AMENDMENTS TO THE CLAIMS

Listing of claims:

1. (Currently Amended) A service chain fault detection method implemented by a service forwarding entity (SFE), ~~wherein~~ the service chain fault detection method ~~comprises~~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~~, by a service forwarding entity (SFE),~~ to communicate with a first service function (SF) node on ~~a service~~the 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~~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 ~~according to claim~~of claim 1, ~~wherein the determining, by an SFE, to communicate with a first SF node on the service chain comprises~~further comprising:

determining, ~~by the SFE~~ based on the path ID, to forward the first fault tracing detection request packet ~~by using a~~using 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. (Currently Amended) The service chain fault detection method ~~according to claim~~of claim 2, wherein the first fault tracing detection request packet further comprises a first parameter, wherein the first parameter ~~is used to identify~~identifies the first SF node or ~~is used to identify~~identifies a previous-hop SF node of the first SF node on the service chain, ~~and the~~wherein 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:~~, and wherein the service chain fault detection method further comprises further 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. (Currently Amended) The service chain fault detection method ~~according to claim~~of claim 1, wherein before ~~the sending, by the SFE, a~~sending the first fault tracing detection response packet~~ to the device for initiating fault detection~~, the service chain fault detection method further ~~comprises:~~comprises sending~~, by the SFE,~~ a second fault tracing detection response packet to the device for initiating fault detection, ~~wherein~~and wherein the second fault tracing detection response packet comprises the path ID and an ID of the SFE.

5. (Currently Amended) The service chain fault detection method ~~according to claim~~of claim 2, wherein the first fault tracing detection request packet further comprises a node list, ~~and the~~wherein the node list comprises an ID of ~~the previous hop~~a previous-hop SF node of the first SF node on the service chain~~; and before the sending, by the SFE, a~~, and wherein before sending the first fault tracing detection response packet to the device~~ for initiating fault detection~~, the service chain fault detection 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~~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~~, by the SFE,~~ the updated node list to the first fault tracing detection response packet.

6. (Currently Amended) The service chain fault detection method ~~according to claim 2~~of claim 3, ~~wherein the method~~ further ~~comprises:~~comprising 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. (Currently Amended) The service chain fault detection method ~~according to claim~~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 after the sending, by the SFE, a~~, and wherein after sending the first fault tracing detection response packet to the device ~~for initiating fault detection~~, 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~~, by the SFE,~~ detection on the service chain ~~when the~~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~~.

8. (Currently Amended) The service chain fault detection method ~~according to claim~~of claim 1, ~~wherein the method~~ further ~~comprises~~comprising:

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~~from the device;

receiving~~, by the SFE,~~ the first fault tracing detection request packet ~~sent by a~~from 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. (Currently Amended) 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~~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 ~~a service~~the 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~~a device for initiating fault detection,

wherein the first fault tracing detection response packet comprises the path ~~ID an the~~ID and the ID of the first SF node.

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

determine, based on the path ID, to forward the first fault tracing detection request packet ~~by using~~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. (Currently Amended) The service forwarding apparatus ~~according to claim~~of claim 10, wherein the first fault tracing detection request packet further comprises a first parameter, wherein the first parameter ~~is used to identify~~identifies the first SF node or ~~is used to identify~~identifies a previous-hop SF node of the first SF node on the service chain, ~~and the~~wherein first forwarding entry further comprises the first ~~parameter;~~parameter, and wherein the processor is further ~~instructed~~configured to further 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. (Currently Amended) The service forwarding apparatus ~~according to claim~~of claim 9, wherein before sending the first fault tracing detection response packet, the processor is further ~~instructed~~configured to send a second fault tracing detection response packet to the device for initiating fault detection, ~~wherein~~and wherein the second fault tracing detection response packet comprises the path ID and an ID of the service forwarding apparatus.

13. (Currently Amended) The service forwarding apparatus ~~according to claim~~of claim 10, wherein the first fault tracing detection request packet further comprises a node list, ~~and the~~wherein the node list comprises an ID of ~~the previous hop~~a previous-hop SF node of the first SF node on the service chain~~; wherein~~, and wherein before sending the first fault tracing detection response packet to the device, the processor is further ~~instructed~~configured 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~~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 ~~according to claim 10~~of claim 11, wherein the processor is further ~~instructed to~~configured to add at least one of the first parameter or the ID of the SFE to the first fault tracing detection response packet.

15. (Currently Amended) The service forwarding apparatus ~~according to claim~~of 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~~, wherein after sending the first fault tracing detection response packet to the device, and wherein the processor is further ~~instructed~~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 ~~when the~~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 ~~according to claim~~of claim 9, wherein the ~~method further comprises~~processor is further configured to:

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~~from the device;

receive the first fault tracing detection request packet ~~sent by a~~from 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~~.

17. (New) A computer program product comprising computer-executable instructions for storage on a non-transitory computer-readable medium that, when executed by a processor, cause a service forwarding apparatus 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;

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. (New) The computer program product of claim 17, wherein the instructions further cause the service forwarding apparatus 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. (New) 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 to further determine, based on the first parameter and the path ID, to forward the first fault tracing detection request packet.

20. (New) 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 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.