NETWORK ACCESS METHOD, APPARATUS, AND SYSTEM

TECHNICAL FIELD

[0001] This application relates to the field of communication technologies, and in particular, to a network access method, apparatus, and system.

BACKGROUND

[0002] In a process in which a user accesses a network of a communication system, a control plane (control plane, CP) device, a user plane (user plane, UP) device, and the like of the communication system need to provide a network service for the user. The communication system is usually provided with a plurality of UP devices, and a session of the user accesses the network through a UP device allocated to the user.

[0003] The UP device allocated by the communication system to the user is usually fixed, but network performance between a steering function SF device and the UP device changes. For example, a network delay between the UP device and the SF device changes with a bandwidth congestion status and the like. In this case, a network status between the UP device and the SF device cannot ensure that quality of the network service provided for the user meets a user requirement.

SUMMARY

[0004] Embodiments of this application provide a network access method and apparatus, which are used to ensure quality of a network service provided for a user.

CLAIMS

1. A network access method, comprising:

obtaining, by a first device, first detection data of network performance between a steering function, SF, device and a first user plane, UP, device, wherein the first UP device is a UP device in a communication system in which a control plane, CP, is separated from a UP; and

configuring, by the first device, the SF device and the first UP device based on the first detection data, to enable a first user to access a network through the SF device and the first UP device, wherein the first detection data meets a network performance requirement of the first user.

2. The method according to claim 1, wherein the first device is a software designed network SDN controller.

3. The method according to claim 2, wherein the configuring, by the first device, the first UP device based on the first detection data comprises:

sending, by the first device, first information to a CP device in the communication system, wherein the first information is used to indicate to connect a session of the first user to the network through the first UP device.

4. The method according to claim 2 or 3, wherein the configuring, by the first device, the SF device based on the first detection data comprises:

sending, by the first device, configuration information to the SF device, wherein the configuration information is used to indicate the SF device to connect the session of the first user to the first UP device.

5. The method according to claim 1, wherein the first detection data is sent by the SDN controller.

6. The method according to claim 5, wherein the configuring, by the first device, the SF device based on the first detection data comprises:

sending, by the first device, second information to a software designed network SDN controller, wherein the second information is used to indicate the SDN controller to send configuration information to the SF device, and the configuration information is used to indicate

the SF device to connect a session of the first user to the first UP device.

7. The method according to claim 5 or 6, wherein the first detection data is sent by the SDN controller.

8. The method according to any one of claims 5-7, wherein the configuring, by the first device, the first UP device based on the first detection data comprises:

sending, by the first device, a session table of the first user to the first UP device.

9. The method according to any one of claims 1 to 8, wherein the method further comprises:

obtaining, by the first device, third information, wherein the third information is used to indicate that the first user is a user requesting to go online.

10. The method according to any one of claims 1 to 9, wherein the method further comprises:

obtaining, by the first device, second detection data and third detection data, wherein the second detection data is detection data of the network performance between the SF device and the first UP device, the third detection data is detection data of network performance between the SF device and a second UP device, and the second UP device is a UP device in the communication system; and

configuring, by the first device, the SF device and the second UP device based on the second detection data and the third detection data, to enable a second user to access the network through the SF device and the second UP device, wherein the second detection data does not meet the network performance requirement of the second user, and the third detection data meets the network performance requirement of the second user.

11. The method according to any one of claims 1 to 10, wherein the network performance requirement of the first user is determined by the first device according to a service level agreement SLA of the first user.

12. The method according to any one of claims 1 to 11, wherein the network performance comprises at least one of a network delay, a network jitter, and a network packet loss rate.

13. A network device, wherein the network device is configured to implement the method according to any one of claims 1 to 12.

14. A network access method, comprising:

receiving, by a CP device in a communication system in which a control plane CP is separated from a user plane UP, first information sent by a first device, wherein the first information is used to indicate that a first user corresponds to a first UP device in the communication system, and

detection data of network performance between a steering function SF device and the first UP device meets a network performance requirement of the first user; and

sending, by the CP device, a session table of the first user to the first UP device.

15. The method according to claim 14, wherein the method further comprises:

sending, by the CP device, response information for the first information to the first device, wherein the response information is used to indicate that the session table of the first user has been delivered to the first UP device.

16. The method according to claim 14 or 15, wherein the method further comprises:

receiving, by the CP device, a go-online request packet of the first user; and

sending, by the CP device, third information to the first device, wherein the third information is used to indicate that the first user is a user requesting to go online.

17. A network access method, comprising:

receiving, by a software designed network SDN controller, second information sent by a first device, wherein the second information is used to indicate that a first user corresponds to a first user plane UP device, the first UP device is a UP device in a communication system in which a control plane CP is separated from a UP, and detection data of network performance between a steering function SF device and the first UP device meets a network performance requirement of the first user; and

sending, by the SDN controller, configuration information to the SF device, wherein the configuration information is used to indicate the SF device to connect a session of the first user to the first UP device.

18. A network access method, comprising:

sending, by a software designed network SDN controller, first detection data of network performance between a steering function SF device and a first user plane UP device to a first device, wherein the first UP device is a UP device in a communication system in which a control plane CP is separated from a UP, the first detection data is used to indicate the first device to configure the SF device and the first UP device, and the first detection data meets a network performance requirement of a first user.

19. A network device, wherein the network device is configured to implement the method according to any one of claims 14 to 18.

20. A network system, comprising a first device, a steering function SF device and a first user plane UP device, wherein the first device is configured to implement the method according to any one of claims 1 to 12, 14-18.

21. A computer-readable storage medium, comprising instructions, wherein when the instructions are run on a computer, the computer is enabled to perform the method according to any one of claims 1 to 12, 14-18.