CLAIMS

What is claimed is:

1. A communication method, comprising:

receiving first request information from a terminal device, wherein the first request information comprises first application identification information;

determining second information based on the first application identification information and first information obtained from a session network function network element, wherein the second information is an extended mechanisms for DNS client subnet option or address information of a local domain name system DNS resolver; and

sending DNS request information to a central DNS server or the local DNS resolver based on the second information, wherein the DNS request information comprises the first application identification information, and the DNS request information is used to obtain address information of an application server.

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

receiving the first information from the session management function network element, wherein the first information comprises the first application identification information and the second information corresponding to the first application identification information.

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

receiving the first information from the session management function network element, wherein the first information comprises the first application identification information, a first identifier, and the second information corresponding to the first application identification information and the first identifier, and the first identifier is at least one data network access identifier.

4. The method according to any one of claims 1 to 3, wherein the method further comprises:

receiving a second identifier from the session management function network element, wherein the second identifier is a data network access identifier corresponding to a current location of the terminal device; and

the determining second information based on the first application identification information and first information obtained from a session network function network element comprises:

determining the second information based on the first application identification information,

the second identifier, and the first information obtained from the session network function network element.

5. The method according to any one of claims 2 to 4, wherein before the receiving the first information from the session management function network element, the method further comprises:

sending the first application identification information and/or first indication information to the session management function network element, wherein the first application identification information is used to obtain the first information, and the first indication information indicates the session management function network element to send the first information.

6. The method according to any one of claims 3 to 5, wherein the first information further comprises a third identifier, the first identifier, and third information corresponding to the first identifier and the third identifier, the third identifier is application identification information of an application deployed on a data network corresponding to the first identifier, and the third information is an extended mechanisms for DNS client subnet option corresponding to the third identifier or address information of a local DNS resolver corresponding to the third identifier.

7. The method according to claim 2, 4 or 5, wherein the first information further comprises a third identifier and third information corresponding to the third identifier, the third identifier is application identification information of an application deployed on a data network corresponding to the first identifier, and the third information is an extended mechanisms for DNS client subnet option corresponding to the third identifier or address information of a local DNS resolver corresponding to the third identifier.

8. The method according to any one of claims 3 to 6, wherein the method further comprises:

receiving second indication information and a fourth identifier from the session management function network element, wherein the fourth identifier is a data network access identifier of a data network that no longer serves the terminal device, and the first identifier comprises the fourth identifier; and

deleting, based on the second indication information, information corresponding to the fourth identifier from the first information.

9. The method according to claim 8, wherein the receiving second indication information and a fourth identifier from the session management function network element comprises:

receiving the second indication information, the fourth identifier, and a fifth identifier from the session management function network element, wherein the fifth identifier is application

identification information of an application deployed on a data network corresponding to the fourth identifier; and

the deleting information corresponding to the fourth identifier from the first information comprises:

deleting information corresponding to the fourth identifier and the fifth identifier from the first information.

10. The method according to any one of claims 1 to 9, wherein the sending DNS request information to a central DNS server or the local DNS resolver based on the second information comprises:

when the second information is the extended mechanisms for DNS client subnet option, sending the DNS request information to the central DNS server, wherein the DNS request further comprises the second information; and

when the second information is the address information of the local DNS resolver, sending the DNS request information to the local DNS resolver.

11. A communication method, comprising:

sending first information to a first entity, wherein the first information comprises first application identification information and second information corresponding to the first application identification information, or comprises first application identification information, a first identifier, and second information corresponding to the first application identification information and the first identifier, the first identifier is at least one data network access identifier, the second information is an extended mechanisms for DNS client subnet option or address information of a local domain name system DNS resolver, and the first information is used by the first entity to determine the second information.

12. The method according to claim 11, wherein the method further comprises:

sending a second identifier to the first entity, wherein the second identifier is a data network access identifier corresponding to a current location of a terminal device; and

that the first information is used to determine the second information comprises:

the first information and the second identifier are used to determine the second information.

13. The method according to claim 11 or 12, wherein the method further comprises:

receiving the first application identification information and/or first indication information from the first entity; and

the sending first information to a first entity comprises:

sending the first information to the first entity based on the first application identification information and/or the first indication information.

14. The method according to any one of claims 11 to 13, wherein the first information further comprises a third identifier, the first identifier, and third information corresponding to the first identifier and the third identifier, the third identifier is application identification information of an application deployed on a data network corresponding to the first identifier, and the third information is an extended mechanisms for DNS client subnet option corresponding to the third identifier or address information of a local DNS resolver corresponding to the third identifier.

15. The method according to any one of claims 11 to 13, wherein the first information further comprises a third identifier and third information corresponding to the third identifier, the third identifier is application identification information of an application deployed on a data network corresponding to the first identifier, and the third information is an extended mechanisms for DNS client subnet option corresponding to the third identifier or address information of a local DNS resolver corresponding to the third identifier.

16. The method according to any one of claims 11 to 14, wherein the method further comprises:

sending second indication information and a fourth identifier to the first entity, wherein the fourth identifier is a data network access identifier of a data network that no longer serves the terminal device, the first identifier comprises the fourth identifier, and the second indication information is used to delete information corresponding to the fourth identifier from the first information.

17. The method according to claim 16, wherein the sending second indication information and a fourth identifier to the first entity comprises:

sending the second indication information, the fourth identifier, and a fifth identifier to the first entity, wherein the fifth identifier is application identification information of an application deployed on a data network corresponding to the fourth identifier; and

that the second indication information is used to delete information corresponding to the fourth identifier from the first information comprises:

the second indication information is used to delete information corresponding to the fourth identifier and the fifth identifier from the first information.

1~~8~~. A communication method, comprising:

receiving first request information from a terminal device, wherein the first request information comprises first application identification information;

determining second information based on first information obtained from a session management function network element, wherein the second information is an extended mechanisms for DNS client subnet option corresponding to a first identifier or address information of a local domain name system DNS resolver corresponding to a first identifier, wherein the first identifier is a data network access identifier of a data network, in data networks corresponding to a second identifier, with a smallest service scope or closest to the terminal device, and the second identifier is at least one data network access identifier corresponding to a current location of the terminal device; and

sending DNS request information to a central DNS server or the local DNS resolver based on the second information, wherein the DNS request information comprises the first application identification information, and the DNS request information is used to obtain address information of an application server.

~~19~~2. The method according to claim 1~~8~~, wherein the method further comprises:

receiving the first information from the session management function network element, wherein the first information comprises the second information.

~~20~~3. The method according to claim ~~18~~1, wherein the method further comprises:

receiving the first information from the session management function network element, wherein the first information comprises the first application identification information and the second information corresponding to the first application identification information.

~~21. The method according to claim 20, wherein the first information further comprises a third identifier and third information corresponding to the third identifier, wherein the third identifier is application identification information of an application deployed on a data network corresponding to the second identifier, and the third information is an extended mechanisms for DNS client subnet option corresponding to the third identifier or address information of a local DNS resolver corresponding to the third identifier.~~

~~22~~4. The method according to any one of claims ~~18~~ 1 to ~~21~~3, wherein the method further comprises:

sending the first application identification information and/or first indication information to

the session management function network element, wherein the first application identification information is used to obtain the first information, and the first indication information indicates the session management function network element to send the first information.

~~23. The method according to any one of claims 18 to 22, wherein the method further comprises:~~

~~receiving second indication information from the session management function network element, wherein the second indication information indicates to delete the first information; and~~

~~deleting the first information based on the second indication information.~~

~~24~~5. The method according to any one of claims ~~18~~ 1 to ~~23~~4, wherein ~~the sending DNS request information to a central DNS server or the local DNS resolver based on the second information comprises:~~

~~when~~ the second information is the extended mechanisms for DNS client subnet option, and the sending DNS request information to a central DNS server or the local DNS resolver based on the second information comprises: sending the DNS request information to the central DNS server, wherein the DNS request information further comprises the second information~~; or~~

~~when the second information is the address information of the local DNS resolver, sending the DNS request information to the local DNS resolver~~.

6. The method according to any one of claims 1 to 4, wherein the second information is the address information of the local DNS resolver, and the sending DNS request information to a central DNS server or the local DNS resolver based on the second information comprises: sending the DNS request information to the local DNS resolver.

~~25~~7. A communication method, comprising:

sending first information to a first entity, wherein the first information comprises second information, or comprises first application identification information and second information corresponding to the first application identification information, the second information is an extended mechanisms for DNS client subnet option corresponding to a first identifier or address information of a local domain name system DNS resolver corresponding to a first identifier, the first identifier is a data network access identifier of a data network with a smallest service scope or closest to a terminal device in data networks corresponding to a second identifier, the second identifier is at least one data network access identifier corresponding to a current location of the terminal device, and the first information is used to determine the second information.

~~26. The method according to claim 25, wherein the first information further comprises a third identifier and third information corresponding to the third identifier, wherein the third identifier is application identification information of an application deployed on a data network corresponding to the second identifier, and the third information is an extended mechanisms for DNS client subnet option corresponding to the third identifier or address information of a local DNS resolver corresponding to the third identifier.~~

~~27~~8. The method according to claim ~~25~~ 7~~or 26~~, wherein the method further comprises:

receiving the first application identification information and/or first indication information from the first entity; and

the sending first information to a first entity comprises:

sending the first information to the first entity based on the first application identification information and/or the first indication information.

9. A communication apparatus, comprising: means for performing the method according to any one of claims 1 to 6.

10. A communication apparatus, comprising: means for performing the method according to any one of claims 7 to 8.

~~28. The method according to any one of claims 25 to 27, wherein the method further comprises:~~

~~sending second indication information to the first entity, wherein the second indication information indicates to delete the first information.~~

~~29. A communication apparatus, comprising:~~

~~a receiving unit, configured to receive first request information from a terminal device, wherein the first request information comprises first application identification information;~~

~~a determining unit, configured to determine second information based on the first application identification information and first information obtained from a session network function network element, wherein the second information is an extended mechanisms for DNS client subnet option or address information of a local domain name system DNS resolver; and~~

~~a sending unit, configured to send DNS request information to a central DNS server or the local DNS resolver based on the second information, wherein the DNS request information comprises the first application identification information, and the DNS request information is used~~

to obtain address information of an application server.

30. The apparatus according to claim 29, wherein the receiving unit is further configured to receive the first information from the session management function network element, wherein the first information comprises the first application identification information and the second information corresponding to the first application identification information.

31. The apparatus according to claim 29, wherein the receiving unit is further configured to receive the first information from the session management function network element, wherein the first information comprises the first application identification information, a first identifier, and the second information corresponding to the first application identification information and the first identifier, and the first identifier is at least one data network access identifier.

32. The apparatus according to any one of claims 29 to 31, wherein the receiving unit is further configured to receive a second identifier from the session management function network element, wherein the second identifier is a data network access identifier corresponding to a current location of the terminal device; and

the determining unit is specifically configured to determine the second information based on the first application identification information, the second identifier, and the first information obtained from the session network function network element.

33. The apparatus according to any one of claims 30 to 32, wherein the sending unit is further configured to: before the receiving unit receives the first information from the session management function network element, send the first application identification information and/or first indication information to the session management function network element, wherein the first application identification information is used to obtain the first information, and the first indication information indicates the session management function network element to send the first information.

34. The apparatus according to any one of claims 31 to 33, wherein the first information further comprises a third identifier, the first identifier, and third information corresponding to the first identifier and the third identifier, the third identifier is application identification information of an application deployed on a data network corresponding to the first identifier, and the third information is an extended mechanisms for DNS client subnet option corresponding to the third identifier or address information of a local DNS resolver corresponding to the third identifier.

35. The apparatus according to claim 30, 32 or 33, wherein the first information further

~~comprises a third identifier and third information corresponding to the third identifier, the third identifier is application identification information of an application deployed on a data network corresponding to the first identifier, and the third information is an extended mechanisms for DNS client subnet option corresponding to the third identifier or address information of a local DNS resolver corresponding to the third identifier.~~

~~36. The apparatus according to any one of claims 31 to 34, wherein the receiving unit is further configured to receive second indication information and a fourth identifier from the session management function network element, wherein the fourth identifier is a data network access identifier of a data network that no longer serves the terminal device, and the first identifier comprises the fourth identifier; and~~

~~the apparatus further comprises:~~

~~a deletion unit, configured to delete, based on the second indication information, information corresponding to the fourth identifier from the first information.~~

~~37. The apparatus according to claim 36, wherein that the receiving unit receives second indication information and a fourth identifier from the session management function network element comprises:~~

~~receiving the second indication information, the fourth identifier, and a fifth identifier from the session management function network element, wherein the fifth identifier is application identification information of an application deployed on a data network corresponding to the fourth identifier; and~~

~~the deletion unit is specifically configured to delete information corresponding to the fourth identifier and the fifth identifier from the first information.~~

~~38. The apparatus according to any one of claims 29 to 37, wherein that the sending unit sends DNS request information to a central DNS server or the local DNS resolver based on the second information comprises:~~

~~when the second information is the extended mechanisms for DNS client subnet option, sending the DNS request information to the central DNS server, wherein the DNS request further comprises the second information; or~~

~~when the second information is the address information of the local DNS resolver, sending the DNS request information to the local DNS resolver.~~

~~39. A communication apparatus, comprising:~~

a sending unit, configured to send first information to a first entity, wherein the first information comprises first application identification information and second information corresponding to the first application identification information, or comprises first application identification information, a first identifier, and second information corresponding to the first application identification information and the first identifier, wherein the first identifier is at least one data network access identifier, the second information is an extended mechanisms for DNS client subnet option or address information of a local domain name system DNS resolver, and the first information is used by the first entity to determine the second information.

40. The apparatus according to claim 39, wherein the sending unit is further configured to send a second identifier to the first entity, wherein the second identifier is a data network access identifier corresponding to a current location of a terminal device; and

that the first information is used to determine the second information comprises:

the first information and the second identifier are used to determine the second information.

41. The apparatus according to claim 39 or 40, wherein the apparatus further comprises:

a receiving unit, configured to receive the first application identification information and/or first indication information from the first entity; and

that the sending unit sends first information to a first entity comprises:

sending the first information to the first entity based on the first application identification information and/or the first indication information.

42. The apparatus according to any one of claims 39 to 41, wherein the first information further comprises a third identifier, the first identifier, and third information corresponding to the first identifier and the third identifier, the third identifier is application identification information of an application deployed on a data network corresponding to the first identifier, and the third information is an extended mechanisms for DNS client subnet option corresponding to the third identifier or address information of a local DNS resolver corresponding to the third identifier.

43. The apparatus according to any one of claims 39 to 41, wherein the first information further comprises a third identifier and third information corresponding to the third identifier, the third identifier is application identification information of an application deployed on a data network corresponding to the first identifier, and the third information is an extended mechanisms for DNS client subnet option corresponding to the third identifier or address information of a local DNS resolver corresponding to the third identifier.

44. The apparatus according to any one of claims 39 to 42, wherein the sending unit is further configured to send second indication information and a fourth identifier to the first entity, wherein the fourth identifier is a data network access identifier of a data network that no longer serves the terminal device, the first identifier comprises the fourth identifier, and the second indication information is used to delete information corresponding to the fourth identifier from the first information.

45. The apparatus according to claim 44, wherein that the sending unit sends second indication information and a fourth identifier to the first entity comprises:

sending the second indication information, the fourth identifier, and a fifth identifier to the first entity, wherein the fifth identifier is application identification information of an application deployed on a data network corresponding to the fourth identifier; and

that the second indication information is used to delete information corresponding to the fourth identifier from the first information comprises:

the second indication information is used to delete information corresponding to the fourth identifier and the fifth identifier from the first information.

46. A communication apparatus, comprising:

a receiving unit, configured to receive first request information from a terminal device, wherein the first request information comprises first application identification information;

a determining unit, configured to determine second information based on first information obtained from a session management function network element, wherein the second information is an extended mechanisms for DNS client subnet option corresponding to a first identifier or address information of a local domain name system DNS resolver corresponding to a first identifier, the first identifier is a data network access identifier of a data network with a smallest service scope or closest to the terminal device in data networks corresponding to a second identifier, and the second identifier is at least one data network access identifier corresponding to a current location of the terminal device; and

a sending unit, configured to send DNS request information to a central DNS server or the local DNS resolver based on the second information, wherein the DNS request information comprises the first application identification information, and the DNS request information is used to obtain address information of an application server.

47. The apparatus according to claim 46, wherein the receiving unit is further configured to

receive the first information from the session management function network element, wherein the first information comprises the second information.

48. The apparatus according to claim 46, wherein the receiving unit is further configured to receive the first information from the session management function network element, wherein the first information comprises the first application identification information and the second information corresponding to the first application identification information.

49. The apparatus according to claim 48, wherein the first information further comprises a third identifier and third information corresponding to the third identifier, wherein the third identifier is application identification information of an application deployed on a data network corresponding to the second identifier, and the third information is an extended mechanisms for DNS client subnet option corresponding to the third identifier or address information of a local DNS resolver corresponding to the third identifier.

50. The apparatus according to any one of claims 46 to 49, wherein the sending unit is further configured to send the first application identification information and/or first indication information to the session management function network element, wherein the first application identification information is used to obtain the first information, and the first indication information indicates the session management function network element to send the first information.

51. The apparatus according to any one of claims 46 to 50, wherein the receiving unit is further configured to receive second indication information from the session management function network element, wherein the second indication information indicates to delete the first information; and

the apparatus further comprises:

a deletion unit, configured to delete the first information based on the second indication information.

52. The apparatus according to any one of claims 46 to 51, wherein that the sending unit sends DNS request information to a central DNS server or the local DNS resolver based on the second information comprises:

when the second information is the extended mechanisms for DNS client subnet option, sending the DNS request information to the central DNS server, wherein the DNS request further comprises the second information; or

when the second information is the address information of the local DNS resolver, sending the DNS request information to the local DNS resolver.

53. A communication apparatus, comprising:

a sending unit, configured to send first information to a first entity, wherein the first information comprises second information, or comprises first application identification information and second information corresponding to the first application identification information, the second information is an extended mechanisms for DNS client subnet option corresponding to a first identifier or address information of a local domain name system DNS resolver corresponding to a first identifier, the first identifier is a data network access identifier of a data network with a smallest service scope or closest to a terminal device in data networks corresponding to a second identifier, the second identifier is at least one data network access identifier corresponding to a current location of the terminal device, and the first information is used to determine the second information.

54. The apparatus according to claim 53, wherein the first information further comprises a third identifier and third information corresponding to the third identifier, wherein the third identifier is application identification information of an application deployed on a data network corresponding to the second identifier, and the third information is an extended mechanisms for DNS client subnet option corresponding to the third identifier or address information of a local DNS resolver corresponding to the third identifier.

55. The apparatus according to claim 53 or 54, wherein the apparatus further comprises:

a receiving unit, configured to receive the first application identification information and/or first indication information from the first entity; and

the sending unit is specifically configured to send the first information to the first entity based on the first application identification information and/or the first indication information.

56. The apparatus according to any one of claims 53 to 55, wherein the sending unit is further configured to send second indication information to the first entity, wherein the second indication information indicates to delete the first information.

57. A communication apparatus, comprising a processor, a memory, an input interface, and an output interface, wherein the input interface is configured to receive information from a communication apparatus other than the communication apparatus, the output interface is configured to output information to a communication apparatus other than the communication

~~apparatus, and the processor invokes a computer program stored in the memory, to implement the method according to any one of claims 1 to 10.~~

~~58. A communication apparatus, comprising a processor, a memory, an input interface, and an output interface, wherein the input interface is configured to receive information from a communication apparatus other than the communication apparatus, the output interface is configured to output information to a communication apparatus other than the communication apparatus, and the processor invokes a computer program stored in the memory, to implement the method according to any one of claims 11 to 17.~~

~~59. A communication apparatus, comprising a processor, a memory, an input interface, and an output interface, wherein the input interface is configured to receive information from a communication apparatus other than the communication apparatus, the output interface is configured to output information to a communication apparatus other than the communication apparatus, and the processor invokes a computer program stored in the memory, to implement the method according to any one of claims 18 to 24.~~

~~60. A communication apparatus, comprising a processor, a memory, an input interface, and an output interface, wherein the input interface is configured to receive information from a communication apparatus other than the communication apparatus, the output interface is configured to output information to a communication apparatus other than the communication apparatus, and the processor invokes a computer program stored in the memory, to implement the method according to any one of claims 25 to 28.~~

~~61~~11. A communication system, comprising:

the apparatus according to claim ~~57~~ 9 and the apparatus according to claim ~~58~~10~~; or~~

~~the apparatus according to claim 59 and the apparatus according to claim 60~~.

12. The communication system according to claim 11, further comprising:

the central DNS server configured to receive the DNS request information.

13. The communication system according to claim 11, further comprising:

the local DNS resolver configured to receive the DNS request information.

14

~~62~~. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program or computer instructions, and when the computer program or the computer instructions are run, the method according to any one of claims 1 to ~~28~~ 10 is implemented.

~~63~~15. A chip, comprising a processor, configured to execute a program stored in a memory, wherein when the program is executed, the chip is enabled to perform the method according to any one of claims 1 to ~~28~~10.