

CLAIMS

What is claimed is:

1. A method for mode switching, performed by a first network function, wherein the method comprises:

invoking a channel mode switch operation towards a second network function, wherein a parameter of the channel mode switch operation comprises first information, and the first information comprises a channel mode switch command; and

the channel mode switch command is used to notify a target party to perform a channel mode switch operation,

wherein the channel mode switch operation comprises: switching from a unicast channel to a multicast channel, or switching from the multicast channel to the unicast channel;

the multicast channel comprises a channel for multicast service data transmission between a core network user plane function a radio access network node, and the multicast channel is shared by all user terminals of the multicast service served by that radio access network node; the unicast channel is a channel is a unicast service data transmission channel established between the core network user plane function and each user terminal to separately send service data to each user terminal.

2. The method according to claim 1, wherein before the invoking a channel mode switch operation towards a second network function, the method further comprises:

determining, based on a user count of multicast service, or a user count in a multicast service area, or a service operation being invoked, whether to perform the invoking a channel mode switch operation towards a second network function.

3. The method according to claim 1, wherein the first information further comprises one or more of the following: user information, and information about an access and mobility management function serving a user terminal.

4. The method according to claim 1, further comprising:

querying a unified data management function for information about an access and mobility management function.

5. The method according to claim 1, wherein the target party is a user terminal or a radio access network node.

6. The method according to claim 5, wherein the channel mode switch command comprises: service information or session information;

the service information is used to indicate at least one of the following:

send a first message, wherein the first message is used to establish a unicast channel or a multicast channel for service data transmission between the user terminal and a network-side device, and the network-side device comprises the first network function; and

send a second message to an application server, wherein the second message is used to notify the application server to send service data to the user terminal;

wherein, the session information is used to indicate at least one of the following:

send a third message to a core network, wherein the third message is used to establish or maintain a multicast channel for service data transmission between the radio access network node and a third network function, or to establish a unicast channel for service data transmission between the radio access network node and a fourth network function; and

send no message to maintain a multicast channel for service data transmission between the radio access network node and the third network function.

7. The method according to claim 5, wherein the channel mode switch command comprises one or more of the following:

information about a third network function;

a temporary mobile group identity TMGI;

a multicast address; and

a protocol data unit session identifier.

8. A method for mode switching, performed by a second network function, wherein the method comprises:

a channel mode switch operation being invoked by a first network function, wherein a parameter of the channel mode switch operation comprises first information, and the first information comprises a channel mode switch command; and

invoking a service operation towards a fifth network function, wherein a parameter of the service operation comprises content of the channel mode switch command; or sending the channel mode switch command to a user terminal; or sending the channel mode switch command to a radio access network node,

wherein the channel mode switch operation comprises: switching from a unicast channel to a multicast channel, or switching from the multicast channel to the unicast channel;

the multicast channel comprises a channel for multicast service data transmission between a core network user plane function a radio access network node, and the

multicast channel is shared by all user terminals of the multicast service served by that radio access network node; the unicast channel is a channel is a unicast service data transmission channel established between the core network user plane function and each user terminal to separately send service data to each user terminal.

9. The method according to claim 8, wherein the first information further comprises one or more of the following: user information, and information about an access and mobility management function serving the user terminal.

10. The method according to claim 8, further comprising:

querying a unified data management function for information about an access and mobility management function serving the user terminal.

11. A method for mode switching, performed by a user terminal, wherein the method comprises:

receiving a channel mode switch command from a network side; and

sending a first message to the network side, wherein the first message is used to establish a unicast channel or a multicast channel for service data transmission between the user terminal and the network side, or for the user terminal to send a second message to an application server, and the second message is used to notify the application server to send service data to the user terminal,

wherein the channel mode switch operation comprises: switching from a unicast channel to a multicast channel, or switching from the multicast channel to the unicast channel;

the multicast channel comprises a channel for multicast service data transmission between a core network user plane function a radio access network node, and the multicast channel is shared by all user terminals of the multicast service served by that radio access network node; the unicast channel is a channel is a unicast service data transmission channel established between the core network user plane function and each user terminal to separately send service data to each user terminal.

12. The method according to claim 11, wherein the channel mode switch command comprises: service information; and

the service information is used to indicate at least one of the following:

for the user terminal to send the first message to the network side, wherein the first message is used to establish a unicast channel or a multicast channel for service data transmission between the user terminal and the network side; and

for the user terminal to send the second message to the application server, wherein the second message is used to notify the application server to send service data to the user terminal.

13. The method according to claim 11, wherein the channel mode switch command comprises one or more of the following:

- a TMGI; and
- a multicast address.

14. A network function, which is a first network function, comprising:

a first invocation module, configured to invoke a channel mode switch operation towards a second network function, wherein a parameter of the channel mode switch operation comprises first information, the first information comprises a channel mode switch command, and the channel mode switch command is used to notify a target party to perform a channel mode switch operation,

wherein the channel mode switch operation comprises: switching from a unicast channel to a multicast channel, or switching from the multicast channel to the unicast channel;

the multicast channel comprises a channel for multicast service data transmission between a core network user plane function a radio access network node, and the multicast channel is shared by all user terminals of the multicast service served by that radio access network node; the unicast channel is a channel is a unicast service data transmission channel established between the core network user plane function and each user terminal to separately send service data to each user terminal.

15. A network function, which is a second network function, comprising:

a second invocation module, configured to determine whether a channel mode switch operation is invoked by a first network function, wherein a parameter of the channel mode switch operation comprises first information, and the first information comprises a channel mode switch command; and

a first sending module, configured to: when the channel mode switch operation is invoked by the first network function, invoke a service operation towards a fifth network function, wherein a parameter of the service operation comprises content of the channel mode switch command; or send the channel mode switch command to a user terminal; or send the channel mode switch command to a radio access network node,

wherein the channel mode switch operation comprises: switching from a unicast channel to a multicast channel, or switching from the multicast channel to the unicast channel;

the multicast channel comprises a channel for multicast service data transmission between a core network user plane function a radio access network node, and the multicast channel is shared by all user terminals of the multicast service served by that radio access network node; the unicast channel is a channel is a unicast service data transmission channel established between the core network user plane function and each user terminal to separately send service data to each user terminal.

16. A user terminal, comprising:

a receiving module, configured to receive a channel mode switch command from a network side; and

a second sending module, configured to send a first message to the network side, wherein the first message is used to establish a unicast channel or a multicast channel for service data transmission with the network side, or to send a second message to an application server, wherein the second message is used to notify the application server to send service data to the user terminal,

wherein the channel mode switch operation comprises: switching from a unicast channel to a multicast channel, or switching from the multicast channel to the unicast channel;

the multicast channel comprises a channel for multicast service data transmission between a core network user plane function a radio access network node, and the multicast channel is shared by all user terminals of the multicast service served by that radio access network node; the unicast channel is a channel is a unicast service data transmission channel established between the core network user plane function and each user terminal to separately send service data to each user terminal.

17. A communications device, comprising: a processor, a memory, and a program stored on the memory and capable of running on the processor, wherein when the program is executed by the processor, the steps of the method for mode switching according to any one of claims 1 to 13 are implemented.

18. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program, and when the computer program is executed by a processor, the steps of the method for mode switching according to any one of claims 1 to 13 are implemented.

19. A computer program product, wherein the program product is executed by at least one processor to implement the method for mode switching according to any one of claims 1 to 13.

20. A network function, configured to perform the method for mode switching according to any one of claims 1 to 7.