CLAIMS

1. A computer implemented method for identifying a router address type, the method comprising:

receiving network interaction data collected by a server, wherein the network interaction data comprises user Media Access Control (MAC) address data and router MAC address data (S202);

determining a relationship between a router MAC address and a user MAC address based on the user MAC address data and the router MAC address data (S204);

determining, based on the relationship between the router MAC address and the user MAC address, an access parameter obtained after each user MAC address in the user MAC address data accesses a router corresponding to the router MAC address within a predetermined period (S206); and

identifying the router MAC address type of the router based on a comparison between the access parameter and a predetermined threshold (S208).

2. The computer implemented method according to claim 1, wherein the access parameter is used to reflect information about a number of users accessing the router and/or an access frequency.

3. The computer implemented method according to claim 2, wherein the access parameter comprises one or any combination of the following listed information: a first number of users accessing the router within a first predetermined period, a second number of users accessing the router within a second predetermined period, and a third number of users successfully accessing the router within a third predetermined period.

4. The computer implemented method according to claim 3, wherein identifying the router MAC address type of the router based on a result of the comparison between the access parameter and the predetermined threshold specifically comprises:

in response to determining that the number of users accessing the router is less than a first threshold, identifying the router MAC address type as a residential router; and

in response to determining that the number of users accessing the to-be-identified router is greater than a second threshold and less than a third threshold, identifying the router MAC address type as a business router, wherein the first threshold is smaller than the second threshold.

5. The computer implemented method according to claim 3, wherein identifying the router

MAC address type of the to-be-identified router based on a result of the comparison between the access parameter and the predetermined threshold specifically comprises:

in response to determining that the total number of accesses of all users is greater than a fourth threshold, identifying the router MAC address type as a business router.

6. The computer implemented method according to claim 3, wherein identifying the router MAC address type of the to-be-identified router based on a result of the comparison between the access parameter and the predetermined threshold specifically comprises:

in response to determining that the number of successful accesses is greater than a fifth threshold, identifying the router MAC address type as a residential router.

7. The computer implemented method according to claim 4, wherein identifying the router MAC address type of the to-be-identified router based on a result of the comparison between the access parameter and the predetermined threshold specifically comprises:

in response to determining that the first number of users is less than the first threshold, and the second number of accesses falls within a value interval between a sixth threshold and a seventh threshold, identifying the router MAC address type as a residential router (S316); and

in response to determining that the second number of users is greater than the seventh threshold, and the first number of users is greater than the first threshold, identifying the router MAC address type as a business router (S314).

8. The computer implemented method according to claim 7, wherein the method further comprises:

in response to determining that the router MAC address type is the residential router, obtaining a workday number of accesses of the router during a workday and a non-workday number of accesses of the router during a non-workday within a fourth predetermined period; and further identifying, based on a result of comparison between the predetermined threshold and a proportion of the workday number of accesses of the router during the workday to the non-workday number of accesses of the router during the non-workday, a residential type corresponding to the residential router; or

in response to determining that the router MAC address type is the residential router, obtaining a fifth number of accesses of the router in a specific time period per day within a fifth predetermined period and a daily number of accesses per day within the fifth predetermined period; and obtaining a proportion of the fifth number of accesses of the router in a specific time period per

day to the daily number of accesses per day, and further identifying, based on the result of the comparison between the proportion and the predetermined threshold, a residential type corresponding to the residential router.

9. The computer implemented method according to claim 3, wherein identifying the router MAC address type of the to-be-identified router based on a result of the comparison between the access parameter and the predetermined threshold comprises using information in descending order of priorities, optionally wherein the descending order of priorities comprises the first number, the second number, and the third number in descending order, the first number is used to identify the router MAC address.

10. The computer implemented method according to claim 3, wherein identifying the router MAC address type of the to-be-identified router based on a result of the comparison between the access parameter and the predetermined threshold comprises using weight of information, optionally wherein the weight of the information comprises a sum of a first weight times the first number, a second weight times the second number, and a third weight times the third number, the sum being compared with the predetermined threshold to identify the router MAC address.

11. The computer implemented method according to claim 1, wherein after the obtaining network interaction data collected by a server, the method further comprises:

performing filtering on the router MAC address data in the network interaction data by using a public router MAC address library, wherein filtered router MAC address data does not comprise public router MAC address data; and

determining a relationship between the router MAC address and the user MAC address based on the user MAC address data and the router MAC address data comprises:

determining the relationship between the router MAC address and the user MAC address based on the user MAC address data and the filtered router MAC address data.

12. The computer implemented method according to any one of claims 1 to 11, wherein the network interaction data further comprises user location information; and

the method further comprises:

determining location information of the to-be-identified router based on location information of a user accessing the to-be-identified router; and

storing the router MAC address type and the location information of the to-be-

identified router in a database.

13. The computer implemented method according to claim 12, further comprising generating a message associated to a service available within a distance based on the user location information.

14. The computer implemented method according to any one of claims 1 to 13, wherein after the identifying the router MAC address type based on a result of the comparison between the access parameter and the predetermined threshold, the method further comprises:

transmitting, based on an identification result, a message corresponding to the router MAC address type to the to-be-identified router or a user accessing the to-be-identified router.

15. An apparatus for identifying a router address type, the apparatus comprising a plurality of modules configured to perform the computer implemented method of any one of claims 1 to 14.