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(54) DOMAIN NAME PARSING METHOD, DOMAIN NAME PARSING DEVICE AND STORAGE MEDIUM

VERFAHREN ZUM PARSING VON DOMAIN-NAMEN, VORRICHTUNG ZUM PARSING VON DOMAIN-NAMEN UND SPEICHERMEDIUM

PROCÉDÉ D'ANALYSE DE NOMS DE DOMAINE, DISPOSITIF D'ANALYSE DE NOMS DE DOMAINE ET SUPPORT D'ENREGISTREMENT

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- **CONTAVALLI W VAN DER GAAST GOOGLE S LEACH NAME COM D RODDEN NEUSTAR C: "Client IP information in DNS requests; draft-vandergaast-edns-client-ip-01.txt", CLIENT IP INFORMATION IN DNS REQUESTS; DRAFT-VANDERGAAST-EDNS-CLIENT-IP-01.TXT, INTERNET ENGINEERING TASK FORCE, IETF; STANDARDWORKINGDRAFT, INTERNET SOCIETY (ISOC) 4, RUE DES FALAISES CH-1205 GENEVA, SWITZERLAND, no. 1, 21 May 2010 (2010-05-21), pages 1-23, XP015068632, [retrieved on 2010-05-21]**

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Description

BACKGROUND

[0001] When it is required by a client to assess a network, a domain name is required to be parsed with a Domain Name System (DNS) after the domain name is entered into a browser, and as long as an Internet Protocol (IP) address corresponding to the domain name is parsed, the client is enabled to assess network contents corresponding to the IP address. Parsing the domain name with the DNS can be a complicated process.

[0002] There is disclosed in US 7536458 B2 the distribution of binary executables and content from peer locations/machines. US 2019/199790 A1 discloses methods and systems for managing health statuses of servers. In CONTAVALLI W VAN DER GAAST GOOGLE D LAWRENCE AKAMAI TECHNOLOGIES W KUMARI GOOGLE C: "Client Subnet In DNS Queries;rfc7871.txt", CLIENT SUBNET IN DNS QUERIES; RFC7871.TXT, Internet Engineering Task Force, IETF; STANDARD, INTERNET SOCIETY (ISOC) 4 an Extension Mechanisms for DNS (EDNS0) option is described that is active to use to carry information about the network that originated a DNS query and the network for which the subsequent response can be cached. In the document CONTAVALLI W VAN DER GAAST GOOGLE S LEACH NAME COM D RODDEN NEUSTAR C "Client IP Information In DNS Requests draft vandergaast-edns-client-ip-01.txt", CLIENT IP INFORMATION IN DNS REQUESTS; DRAFT-VANDERGAAST-EDNS-CLIENT-IP-01.TXT, Internet Engineering Task Force, IETF; STANDARD-WORKINGDRAFT, INTERNET SOCIETY (ISOC) 4 an EDNS0 extension to carry relevant network range information is defined.

SUMMARY

[0003] The invention is set out in the appended set of claims. The present disclosure relates generally to a field of computer technologies, and more specifically to a domain name parsing method, a domain name parsing apparatus and a storage medium.

[0004] It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] The accompanying drawings, which are incorporated in and constitute a part of this description, illustrate embodiments consistent with the invention and, together with the description, serve to explain the principles of the invention.

FIG. 1 is a flowchart showing a domain name parsing method, according to the invention.

FIG. 2 is a flowchart showing a domain name parsing method, according to the invention.

FIG. 3 is a flowchart showing a domain name parsing method, not being part of the invention.

FIG. 4 is a flowchart showing a domain name parsing method, according to the invention.

FIG. 5 is a flowchart showing a domain name parsing method, according to the invention.

FIG. 6 is a flowchart showing a domain name parsing method, according to the invention.

FIG. 7 is a flowchart showing a domain name parsing method, according to the invention.

FIG. 8 is a block diagram illustrating a domain name parsing apparatus, according to some embodiments.

FIG. 9 is a block diagram illustrating a domain name parsing apparatus, according to some embodiments.

FIG. 10 is a block diagram of a device, according to some embodiments.

DETAILED DESCRIPTION

[0006] Description will now be made in detail to exemplary embodiments, examples of which are illustrated in the accompanying drawings. The following description refers to the accompanying drawings in which the same numbers in different drawings represent the same or similar elements unless otherwise represented. The implementations set forth in the following description of exemplary embodiments do not represent all implementations consistent with the invention. Instead, they are merely examples of apparatuses and methods consistent with aspects related to the invention as recited in the appended claims.

[0007] It is possible for the technical solutions according to exemplary embodiments of the present disclosure to be applied to application scenarios where a domain name is parsed in a procedure of accessing a network by a client.

[0008] In related technologies, a way to parse the domain name is as follows: when entering the domain name to access the network, the client parses the domain name through a local DNS allocated by an Internet Service Provider (ISP) at first. The local DNS server inquires a buffer record regarding the domain name, and returns an IP address corresponding to the domain name directly if there is the buffer record for the entered domain name in the buffer of the local DNS server. If there is no buffer record for the domain name in the buffer of the local DNS

server, the local DNS server would inquire to a DNS root server. According to the inquiring request from the local DNS server, the DNS root server returns a result that the local DNS server needs to continue inquiring to a domain server and gives an address of the domain server. The local DNS server continues to make requests to the domain server, and the domain server returns an address of a parsing server for parsing the domain name to the local DNS server according to the inquiring request from the local DNS server. The local DNS server issues an inquiring request to the parsing server for parsing domain name, and, the parsing server returns a correspondence between the domain name and an IP address according to the inquiring request from the local DNS server. The local DNS server returns the acquired IP address corresponding to the domain name to the client, to achieve the accessing to contents on the network corresponding to the IP address by the client. There are many intermediate links in parsing the domain name with the DNS, and an abnormal parsing may occur as long as there is a problem in any link, which affects user access to the network.

[0009] In the related technologies, another way to parse the domain name is to acquire via the DNS service provided by a third party. After entering the domain name in a browser, the IP address corresponding to the domain name is inquired via the DNS service provided by the third party. During a procedure of acquiring the IP address corresponding to the domain name through data provided by the third party, a communication between the client and the DNS service of the third party may be attacked, which results in the acquired IP address to be tampered. Or the DNS service data provided by the third party is not updated in time, such that the DNS domain name parsing fails.

[0010] In view of this, the present disclosure provides a domain name parsing method, to reduce the links of the domain name parsing and increase a success rate of the domain name parsing.

[0011] FIG. 1 is the flowchart illustrating a domain name parsing method, according to some embodiments. Referring to FIG. 1, the domain name parsing method is applied to the client and includes the following steps.

[0012] In step S11, a domain name parsing request is transmitted, and the domain name parsing request includes the domain name and home information of the client.

[0013] In the present disclosure, the client transmits the domain name parsing request to a server side, and the domain name parsing request includes the domain name and the home information of the client.

[0014] In the present disclosure, an IP address of the client can be transmitted as the home information of the client.

[0015] In the present disclosure, a region to which the client belongs and an ISP of the belonged region can also be transmitted as the home information of the client.

[0016] In an implementation of the present disclosure, in order to ensure a safety communication between the client and the server, and prevent a transmission channel between the client and the server from being hacked, the client can transmit the domain name parsing request based on a private encryption protocol between the client and the server. For example, the client transmits, by the private encryption protocol, the domain name parsing request to the server via an inquiring interface set in the server. The server can transmit, to the client, a domain name parsing address corresponding to the domain name in the domain name parsing request via the inquiring interface, according to the private encryption protocol between the server and the client.

[0017] In step S12, the domain name parsing address transmitted by the server is received, and the domain name parsing address is determined by the server based on the home information, the domain name and pre-stored statistical information.

[0018] In the present disclosure, the client receives the domain name parsing address corresponding to the domain name transmitted by the server. The domain name parsing address is determined by the server based on the home information of the client, the domain name and the pre-stored statistical information.

[0019] Herein, the pre-stored statistical information includes a correspondence between domain names and addresses counted previously for various regions, the correspondence between a domain name and an address represents a corresponding relationship between the domain name and domain name available parsing addresses which is a domain name parsing address determined based on history report information from a plurality of clients and capable of accessing the domain name successfully.

[0020] In an implementation, if the client transmits the IP address of the client as the home information of the client to the server, the server can determine the region to which the client belongs, and the ISP of the belonged region based on the IP address of the client. The server acquires the domain name parsing address corresponding to the region to which the client belongs by parsing, according to the region to which the client belongs and the ISP of the belonged region, and the pre-stored statistical information including the region to which the client belongs, the ISP of the belonged region and the correspondence between a domain name and an address, and transmits the domain name parsing address acquired by parsing to the client.

[0021] In the invention, the client transmits the domain name parsing request to the server, and the server parses the domain name transmitted by the client according to the pre-stored correspondence between a domain name and an address counted previously for various regions, and transmits the parsed domain name parsing address to the client. The correspondence between a domain name and an address pre-stored in the server represents the corresponding relationship between the domain name and the domain name available parsing

addresses which is a domain name parsing address capable of accessing the domain name successfully. The client receives the domain name parsing address corresponding to the domain name transmitted by the server, thereby the intermediate links of the domain name parsing can be reduced and the efficiency of the domain name paring can be raised.

[0022] FIG. 2 is the flowchart illustrating a domain name parsing method, according to the invention. As illustrated in FIG. 2, the domain name parsing method is applied to the client and includes following steps.

[0023] In step S21, information is reported, the information includes the home information, the domain name, the domain name parsing address and a parsing result representing whether accessing of the domain name based on the domain name parsing address is successful or not.

[0024] In the present disclosure, information is reported by the client after the domain name is parsed by the local DNS server. The information reported by the client can include the home information of the client, the domain name, the domain name parsing address and the parsing result. The parsing result can be a result representing whether the accessing of the domain name based on the domain name parsing address is successful or not.

[0025] Herein, the home information of the client can be the home of the client determined based on the IP address of the client. The domain name can be a domain name to be parsed, and the parsing result of the domain name can include a parsing successful result, and can also include a parsing failure result for the domain name. When the domain name is parsed successfully, the domain name parsing address can be a domain name parsing address capable of accessing the domain name successfully. When the domain name is parsed in failure, the domain name parsing address can be a domain name parsing address unable to access the domain name successfully.

[0026] In the invention, the client reports, in real-time, the information such as the home information, the domain name, the domain name parsing address and the parsing result, etc. Reporting in real time, by the client, the information such as the home information, the domain name, the domain name parsing address and the parsing result, etc. can enable the server to acquire real information that the domain name is parsed based on the client, and ensure effectiveness and timeliness that the server acquires the domain name parsing address corresponding to the domain name, thereby raising the success rate of parsing.

[0027] In an implementation of the present disclosure, in order to ensure a safety communication between the client and the server, and prevent a transmission channel between the client and the server from being hacked, the private encryption protocol is set in advance between the client and the server. The client can report the information based on the private encryption protocol between the client and the server. For example, the client can report the information, via a report interface of the server, through the private encryption protocol, and the server can acquire the information reported by each of the plurality of clients via the report interface, according to the private encryption protocol between the server and the client.

[0028] In step S22, the domain name parsing request is transmitted, the domain name parsing request includes the domain name and the home information of the client.

[0029] In step S23, the domain name parsing address corresponding to the domain name transmitted by the server is received, and the domain name parsing address is determined by the server based on the home information, the domain name and the pre-stored statistical information.

[0030] In some embodiments of the present disclosure, the domain name parsing information such as the home information, the domain name, the domain name parsing address, the parsing result and the like is reported, in real-time, to the server by the client. The server determines and stores the statistical information based on the information reported historically by the plurality of the clients. The pre-stored statistical information includes the correspondence between a domain name and an address counted previously for various regions, the correspondence between a domain name and an address represents the corresponding relationship between the domain name and the domain name available parsing addresses which is the domain name parsing address capable of accessing the domain name successfully. Reporting, by the client, the information such as the home information, the domain name, the domain name parsing address and the parsing result, etc. can enable the server to acquire real information that the domain name is parsed based on the client, and ensure effectiveness and timeliness that the server acquires the domain name parsing address corresponding to the domain name, thereby raising the success rate of parsing.

[0031] FIG. 3 is the flowchart illustrating a domain name parsing method, not being part of the present invention. As illustrated in FIG. 3, the domain name parsing method is applied to the client and includes following steps.

[0032] In step S31, it is determined that the parsing of domain name on the local DNS server fails.

[0033] In an implementation, the present disclosure can parse the domain name based on the local DNS server, and when the parsing of domain name on the local DNS server fails, it is request that the server parses the domain name.

[0034] In step S32, the domain name parsing request is transmitted, and the domain name parsing request includes the domain name and the home information of the client.

[0035] In step S33, the domain name parsing address corresponding to the domain name transmitted by the server is received, and the domain name parsing address is determined by the server based on the home informa-

tion, the domain name and the pre-stored statistical information.

[0036] In some embodiments of the present disclosure, when the parsing of the domain name on the local DNS server fails, by transmitting the domain name parsing request to the server, the server can parse the domain name transmitted by the client according to the pre-stored correspondence between a domain name and an address counted previously for various regions, and transmits the parsed domain name parsing address to the client. The correspondence between a domain name and an address stored previously in the server represents the corresponding relationship between the domain name and the domain name available parsing addresses which is the domain name parsing address capable of accessing the domain name successfully. Thus, when the parsing on the local DNS server fails, it is avoided that the process of inquiring the domain name to the DNS root server by the local DNS server experiences a plurality of links of the parsing, which improves the parsing efficiency.

[0037] FIG. 4 is the flowchart illustrating a domain name parsing method, according to the invention. As illustrated in FIG. 4, the domain name parsing method is applied to the client and includes following steps.

[0038] In step S41, the domain name parsing request transmitted by the client is acquired, and the domain name parsing request includes the domain name and the home information of the client.

[0039] In the present disclosure, the home information of the client can be information on the regions to which the client belongs. For example, the IP address of the client transmitted by the client can be used as the home information of the client in the present disclosure. Alternatively, the region to which the client belongs and the ISP of the belonged region transmitted by the client can also be used as the home information in the present disclosure.

[0040] In an implementation, in order to ensure a safety communication between the client and the server, and prevent a transmission channel between the client and the server from being hacked, the private encryption protocol is set in advance between the client and the server. The server acquires the domain name parsing request transmitted by the client based on the private encryption protocol between the client and the server. For example, the client transmits to the server the domain name parsing request via the interface on the server, for example via the inquire interface on the server, through the private encryption protocol. The server can acquire the domain name parsing request transmitted by the client via the inquire interface according to the private encryption protocol between the server and the client.

[0041] In step S42, the correspondence between a domain name and an address corresponding to the region to which the client belongs is inquired in pre-stored statistical information based on the home information of the client.

[0042] In an implementation, if the client uses the IP address of the client as the home information of the client and transmits it to the server, the server can determine the region to which the client belongs and the ISP of the belonged region based on the home information of the client. The server inquires the correspondence between a domain name and an address corresponding to the region to which the client belongs in the pre-stored statistical information on the region to which the client belongs according to the region to which the client belongs and the ISP of the belonged region.

[0043] In the present disclosure, the pre-stored statistical information includes the correspondence between a domain name and an address counted previously for various regions. Herein, the correspondence between a domain name and an address represents the corresponding relationship between the domain name and domain name available parsing addresses which is a domain name parsing address determined based on history report information from a plurality of clients and capable of accessing the domain name successfully.

[0044] In step S43, the domain name parsing address corresponding to the domain name included in the inquiring request is determined based on the correspondence between a domain name and an address corresponding to the region.

[0045] In the present disclosure, the domain name available parsing addresses corresponding to the inquired domain name can be determined based on the correspondence between a domain name and an address corresponding to the region to which the client belongs. The domain name available parsing addresses can be understood as the domain name parsing address capable of accessing the domain name successfully as accessing the domain name. Further, in order to increase efficiency of parsing the domain name and improve the success rate of parsing the domain name, the present disclosure can further determine the domain name available parsing addresses according to time taken for the client to access the domain name. For example, the present disclosure can set in advance a time threshold for determining the domain name available parsing addresses. The domain name parsing address which is able to access the domain name successfully and the accessing spends a time less than the time threshold set in advance could be used as the domain name available parsing addresses.

[0046] Furthermore, the present disclosure can determine a predetermined number of acquired domain name available parsing addresses as the domain name parsing address corresponding to the domain name included in the inquiring request in an ascending order of time consuming. For example, in the ascending order of time consuming, the domain name available parsing addresses with the predetermined number of 3 are used as the domain name available parsing addresses.

[0047] In some embodiments of the present disclosure, by acquiring the domain name parsing request

transmitted by the client, and based on the home information of the client in the domain name parsing request, the server can inquire the domain name parsing address corresponding to the domain name in the pre-stored the statistical information on the belonged region. With the present disclosure, the intermediate links in parsing the domain name could be reduced and the efficiency of parsing the domain name could be raised. Also, determining the predetermined number of acquired domain name available parsing addresses as the domain name parsing address corresponding to the domain name included in the inquiring request in an ascending order of time consuming can increase the efficiency of the domain name parsing. Further, the server acquires the domain name parsing request transmitted by the client based on the private encryption protocol between the server and the client, which can prevent the transmission channel between the client and the server from being hacked and ensure a security of acquiring the domain name parsing request by the server.

[0048] FIG. 5 is the flowchart illustrating a domain name parsing method, according to the invention. As illustrated in FIG. 5, the domain name parsing method is applied to the server and includes following steps.

[0049] In step S51, information reported by each of the plurality of clients is acquired respectively within a designated historical period.

[0050] In the present disclosure, the designated historical period can be understood as a period before the current time, and can be set based on actual requirements. For example, it can be one day, one hour or one minute before the current time. In the present disclosure, the historical period can be set as one minute in order to ensure that the domain name parsing addresses capable of accessing the domain name successfully acquired for the various regions are the latest domain name parsing addresses.

[0051] The reported information can be information that the entered domain name is parsed and the situation of parsing is reported by the client. The reported information can include the home information of the client, the domain name, the domain name parsing address and the parsing result. The parsing result can be a result representing whether accessing of the domain name based on the domain name parsing address is successful or not. Herein, the home information of the client can be the home of the client determined based on the IP address information of the client. The domain name can be the domain name to be parsed, and the parsing result of the domain name can include a parsing successful result, and can also include a parsing failure result for the domain name. When the domain name is parsed successfully, the domain name parsing address can be the domain name parsing address capable of accessing the domain name successfully. When the domain name is parsed in failure, the domain name parsing address can be a domain name parsing address which is wrong and unable to access the domain name successfully.

[0052] In an implementation, in order to ensure a safety communication between the client and the server, and prevent a transmission channel between the client and the server from being hacked, in the present disclosure, the server acquires the information reported by each of the plurality of clients respectively based on the respective private encryption protocols between the each of the plurality of clients and the server. For example, the client reports the information via the interface on the server, such as a report interface on the server, to the server through the private encryption protocol. The server can acquire the information reported by the each of the plurality of clients via the report interface according to the private encryption protocol between the server and the clients.

[0053] In step S52, the regions to which the home corresponding to the home information reported by the respective clients belongs are determined respectively.

[0054] In the present disclosure, the home information of the clients is counted according to the information reported by the client in real-time, and the regions to which the respective client belong and the ISPs of the belonged regions are determined.

[0055] In step S53, for the each region, the domain name available parsing addresses of each domain name is counted based on the domain name, the domain name parsing address and the parsing result, and a correspondence between the domain name and the domain name available parsing addresses is established to obtain the correspondence between a domain name and an address.

[0056] In the present disclosure, the domain name available parsing addresses of the domain name in the each region is counted based on the domain name, the parsing result of the successful domain name parsing and the domain name parsing address the successful domain name parsing. The domain name available parsing addresses can be the domain name parsing address capable of accessing the domain name successfully. Based on the domain name available parsing addresses, the correspondence relationship between the domain name and the domain name available parsing addresses is established thereby the correspondence between a domain name and an address can be acquired.

[0057] In step S54, the domain name parsing request transmitted by the client is acquired, and the domain name parsing request includes the domain name and the home information of the client.

[0058] In step S55, the correspondence between a domain name and an address corresponding to the region to which the client belongs is inquired in the pre-stored statistical information, based on the home information.

[0059] In step S56, the domain name parsing address corresponding to the domain name included in the inquiring request is determined based on the correspondence between a domain name and an address corresponding to the region.

[0060] In the exemplary embodiment of the present

disclosure, the server can ensure the timeliness of the domain name available parsing addresses corresponding to the domain name, which is stored in the server, based on the report information acquired within the designated period. A predetermined number of acquired domain name available parsing addresses are determined as the domain name parsing address corresponding to the domain name included in the inquiring request according to the ascending order of time consuming, which can further increase the efficiency of the domain name parsing. Further, the domain name parsing request transmitted by the client is acquired based on the private encryption protocol between the server and the client, so as to ensure the accuracy and security of the reported information.

[0061] FIG. 6 is the flowchart illustrating a domain name parsing method, according to the invention. As illustrated in FIG. 6, the domain name parsing method is applied to the server and includes following steps.

[0062] In step S61, information reported by the each of the plurality of clients is acquired respectively within the designated historical period.

[0063] In step S62, regions to which the homes corresponding to the home information reported by the respective clients belong are determined respectively.

[0064] In step S63, for the each region, the domain name available parsing addresses of each domain name is periodically counted and updated in a designated time unit, based on the domain name, the domain name parsing address and the parsing result, and the correspondence between a domain name and domain name available parsing addresses is established to obtain the correspondence between a domain name and an address for the respective regions.

[0065] In a possible implementation, the domain name available parsing addresses of the each region is counted periodically and updated in the designated time unit, in the present disclosure, and thus the latest correspondence between the domain name and the domain name available parsing addresses can be obtained in real time, which ensures the timeliness and correctness of the domain name available parsing addresses.

[0066] In the present disclosure, the designated time unit can be set based on the actual requirements. For example, it can be one day, one hour or one minute. In the present disclosure, the designated time unit can be set as one minute, for example, in order to ensure the timeliness and correctness of the domain name available parsing addresses.

[0067] In step S64, the domain name parsing request transmitted by the client is received, and the domain name parsing request includes the domain name and the home information of the client.

[0068] In step S65, the correspondence between a domain name and an address corresponding to the region to which the client belongs is inquired in the pre-stored statistical information.

[0069] In step S66, the domain name parsing address corresponding to the domain name included in the inquiring request is determined, based on the correspondence between a domain name and an address corresponding to the region.

[0070] In the exemplary embodiment of the present disclosure, the server can ensure the timeliness and effectiveness of the correspondence between a domain name and an address counted previously for the respective regions, which is pre-stored in the server, by counting periodically and updating the domain name available parsing addresses for the each region in the designated time unit, and can increase the success rate of the domain name parsing by parsing the domain name based on the updated correspondence between a domain name and an address pre-stored in the server.

[0071] FIG. 7 is the flowchart illustrating a domain name parsing method, according to the invention. As illustrated in FIG. 7, the domain name parsing method includes following steps.

[0072] In step S71, the domain name parsing request including the domain name and the home information of the client is transmitted by the client. The domain name parsing request transmitted by the client is acquired by the server, and the domain name parsing request includes the domain name and the home information of the client.

[0073] In step S72, the correspondence between a domain name and an address corresponding to the region to which the client belongs is inquired by the server in the pre-stored statistical information, based on the home information.

[0074] In step S73, the domain name parsing address corresponding to the domain name included in the inquiring request is determined by the server based on the correspondence between a domain name and an address corresponding to the region.

[0075] In step S74, the domain name parsing address corresponding to the domain name included in the inquiring request is transmitted by the server. The domain name parsing address corresponding to the domain name transmitted by the server is received by the client, and the domain name parsing address is determined by the server based on the home information, the domain name and the pre-stored statistical information.

[0076] In the invention, the client transmits the domain name parsing request to the server, and the server parses the domain name transmitted by the client according to the pre-stored correspondence between a domain name and an address counted previously for various regions and transmits the parsed domain name parsing address to the client. The correspondence between a domain name and an address pre-stored in the server represents the corresponding relationship between the domain name and the domain name available parsing addresses which is a domain name parsing address capable of accessing the domain name successfully. The domain name parsing address, transmitted by the server, corresponding to the domain name is received by the

client, which can reduce intermediate links of the domain name parsing and increase the efficiency of the domain name parsing.

[0077] FIG. 8 is a block diagram illustrating a domain name parsing apparatus 100, according to some embodiments. Referring to FIG. 8, the domain name parsing apparatus 100 is applied to the server, and includes an acquiring unit 101, an inquiring unit 102, a determination unit 103 and a transmitting unit 104.

[0078] The acquiring unit 101 is configured to acquire the domain name parsing request transmitted by the client, the domain name parsing request includes a domain name and home information of the client. The inquiring unit 102 is configured to, based on the home information, inquire the correspondence between a domain name and an address corresponding to the region to which the client belongs in the pre-stored statistical information. The statistical information includes the correspondence between a domain name and an address counted previously for various regions, the correspondence between a domain name and an address represents the corresponding relationship between the domain name and the domain name available parsing addresses which is the domain name parsing address determined based on the history report information from the plurality of clients and capable of accessing the domain name successfully. The determination unit 103 is configured to, based on the correspondence between a domain name and an address corresponding to the region, determine the domain name parsing address corresponding to the domain name included in the inquiring request. The transmitting unit 104 is configured to transmit the domain name parsing address corresponding to the domain name included in the inquiring request.

[0079] In an example, the acquiring unit 101 is further configured to: acquire information reported by each of the plurality of clients respectively within the designated historical period, the information including the home information, the domain name, the domain name parsing address and the parsing result representing the result of whether accessing of the domain name based on the domain name parsing address is successful or not. The determination unit 103 determines the statistical information previously by adopting the following modes: determining, respectively, the regions belonging to homes corresponding to the home information reported by the respective clients. For each region, the domain name available parsing addresses is counted for the each domain name based on the domain name, the domain name parsing address and the parsing result, and the corresponding relationship between the domain name and the domain name parsing address is established to obtain the correspondences between a domain name and an address for the various regions.

[0080] In an example, the determination unit 103 counts the domain name available parsing addresses for each domain name by adopting the following modes: counting periodically and updating the domain name available parsing addresses for the each domain name in the designated time unit.

[0081] In an example, the domain name available parsing addresses is the domain name parsing address capable of accessing the domain name successfully and the access time being less than a predetermined time threshold when accessing the domain name.

[0082] In an example, the determination unit 103 is configured to determine the domain name parsing address corresponding to the domain name included in the inquiring request by adopting the following mode: based on the correspondence between a domain name and an address corresponding to the region, determining a predetermined number of acquired domain name available parsing addresses as the domain name parsing address corresponding to the domain name included in the inquiring request in an ascending order of time consuming.

[0083] In an example, the acquiring unit 101 is configured to acquire the information reported by each of the plurality of clients respectively by adopting the following mode: acquiring, respectively, the information reported by each of the plurality of clients, based on private encryption protocols between the server and each of the plurality of clients.

[0084] In an example, the acquiring unit 101 is configured to acquire the domain name parsing request transmitted by the client by adopting the following mode: acquiring the domain name parsing request transmitted by the client based on the private encryption protocol corresponding to the client transmitting the domain name parsing request.

[0085] FIG. 9 is a block diagram illustrating a domain name parsing apparatus 200, according to some embodiments. Referring to FIG. 9, the domain name parsing apparatus 200 is applied to the client and includes a transmitting unit 201 and a receiving unit 202.

[0086] The transmitting unit 201 is configured to transmit the domain name parsing request including the domain name and home information of the client. The receiving unit 202 is configured to receive the domain name parsing address corresponding to the domain name transmitted by the server, and the domain name parsing address is determined by the server based on the home information, the domain name and pre-stored statistical information. The statistical information includes the correspondence between a domain name and an address counted previously for various regions, the correspondence between a domain name and an address represents the corresponding relationship between the domain name and the domain name available parsing addresses which is the domain name parsing address determined based on history report information from the plurality of clients and capable of accessing the domain name successfully.

[0087] In an example, the domain name parsing apparatus further includes: a determination parsing unit 203, configured to determine that the domain name parsing is failed on the local DNS server, before transmitting the

domain name parsing request.

[0088] In an example, the domain name parsing apparatus further includes: a report unit configured to report, in real time, information including the home information, the domain name, the domain name parsing address, and the parsing result representing whether accessing of the domain name based on the domain name parsing address is successful or not.

[0089] In an example, the transmitting unit 201 is configured to transmit the domain name parsing request by adopting the following mode: transmitting the domain name parsing request based on the private encryption protocol between the client and the server.

[0090] In an example, the reporting unit is configured to report information by adopting the following mode: reporting information based on a private encryption protocol between the client and the server.

[0091] With respect to the apparatus in the above embodiments, the specific manners for performing operations by individual modules therein have been described in detail in the embodiments regarding the methods, which will not be elaborated herein.

[0092] FIG. 10 is a block diagram of a device 1000 for parsing the domain name, according to some embodiments. For example, the device 1000 can be a mobile phone, a computer, a digital broadcast terminal, a messaging device, a gaming console, a tablet, a medical device, exercise equipment, a personal digital assistant, and the like.

[0093] Referring to FIG. 10, the device 1000 can include one or more of the following components: a processing component 1002, a memory 1004, a power component 1006, a multimedia component 1008, an audio component 1010, an input/output (I/O) interface 1012, a sensor component 1014, and a communication component 1016.

[0094] The processing component 1002 typically controls overall operations of the device 1000, such as the operations associated with display, telephone calls, data communications, camera operations, and recording operations. The processing component 1002 can include one or more processors 1020 to execute instructions to perform all or part of the steps in the above described methods. Moreover, the processing component 1002 can include one or more modules which facilitate the interaction between the processing component 1002 and other components. For instance, the processing component 1002 can include a multimedia module to facilitate the interaction between the multimedia component 1008 and the processing component 1002.

[0095] The memory 1004 is configured to store various types of data to support the operation of the device 1000. Examples of such data include instructions for any applications or methods operated on the device 1000, contact data, phonebook data, messages, pictures, video, etc. The memory 1004 can be implemented using any type of volatile or non-volatile memory devices, or a combination thereof, such as a static random access memory (SRAM), an electrically erasable programmable read-only memory (EEPROM), an erasable programmable read-only memory (EPROM), a programmable read-only memory (PROM), a read-only memory (ROM), a magnetic memory, a flash memory, a magnetic or optical disk.

[0096] The power component 1006 provides power to various components of the device 1000. The power component 1006 can include a power management system, one or more power sources, and any other components associated with the generation, management, and distribution of power in the device 1000.

[0097] The multimedia component 1008 includes a screen providing an output interface between the device 1000 and the user. In some embodiments, the screen can include a liquid crystal display (LCD) and a touch panel (TP). In some embodiments, organic light-emitting diode (OLED) or other types of displays can be employed.

[0098] If the display screen includes the touch panel, the screen can be implemented as a touch screen to receive input signals from the user. The touch panel includes one or more touch sensors to sense touches, swipes, and gestures on the touch panel. The touch sensors not only can sense a boundary of a touch or swipe action, but also sense a period of time and a pressure associated with the touch or swipe action. In some embodiments, the multimedia component 1008 includes a front camera and/or a rear camera. The front camera and the rear camera can receive an external multimedia datum while the device 1000 is in an operation mode, such as a photographing mode or a video mode. Each of the front camera and the rear camera can be a fixed optical lens system or have focus and optical zoom capability.

[0099] The display screen of the mobile terminal such as the mobile phone can display the received domain name parsing address and/or webpage content corresponding to the domain name parsing address to a user.

[0100] The audio component 1010 is configured to output and/or input audio signals. For example, the audio component 1010 includes a microphone ("MIC") configured to receive an external audio signal when the device 1000 is in an operation mode, such as a call mode, a recording mode, and a voice recognition mode. The received audio signal can be further stored in the memory 1004 or transmitted via the communication component 1016. In some embodiments, the audio component 1010 further includes a speaker to output audio signals.

[0101] The I/O interface 1012 provides an interface between the processing component 1002 and peripheral interface modules, such as a keyboard, a click wheel, buttons, and the like. The buttons can include, but are not limited to, a home button, a volume button, a starting button, and a locking button.

[0102] The sensor component 1014 includes one or more sensors to provide status assessments of various aspects of the device 1000. For instance, the sensor component 1014 can detect an open/closed status of the device 1000, relative positioning of components, e.g., the display and the keypad, of the device 1000, a change in

position of the device 1000 or a component of the device 1000, a presence or absence of user contact with the device 1000, an orientation or an acceleration/deceleration of the device 1000, and a change in temperature of the device 1000. The sensor component 1014 can include a proximity sensor configured to detect the presence of nearby objects without any physical contact. The sensor component 1014 can also include a light sensor, such as a CMOS or CCD image sensor, for use in imaging applications. In some embodiments, the sensor component 1014 can also include an accelerometer sensor, a gyroscope sensor, a magnetic sensor, a pressure sensor, or a temperature sensor.

[0103] The communication component 1016 is configured to facilitate communication, wired or wirelessly, between the device 1000 and other devices. The device 1000 can access a wireless network based on a communication standard, such as Wi-Fi, 2G, 3G, 4G, 5G, or a combination thereof. In one exemplary embodiment, the communication component 1016 receives a broadcast signal or broadcast associated information from an external broadcast management system via a broadcast channel. In one exemplary embodiment, the communication component 1016 further includes a near field communication (NFC) module to facilitate short-range communications. For example, the NFC module can be implemented based on a radio frequency identification (RFID) technology, an infrared data association (IrDA) technology, an ultra-wideband (UWB) technology, a Bluetooth (BT) technology, and other technologies.

[0104] In exemplary embodiments, the device 1000 can be implemented with one or more application specific integrated circuits (ASICs), digital signal processors (DSPs), digital signal processing devices (DSPDs), programmable logic devices (PLDs), field programmable gate arrays (FPGAs), controllers, micro-controllers, microprocessors, or other electronic components, for performing the above described methods.

[0105] In exemplary embodiments, there is also provided a non-transitory computer-readable storage medium including instructions, such as the memory 1004 including instructions, executable by the processor 1020 in the device 1000, for performing the above-described methods. For example, the non-transitory computer-readable storage medium can be a ROM, a RAM, a CD-ROM, a magnetic tape, a floppy disc, an optical data storage device, and the like.

[0106] Various embodiments of the present disclosure can have one or more of the following advantages.

[0107] The client transmits the domain name parsing request to the server, and the server parses the domain name transmitted by the client according to a correspondence between a domain name and an address, which is pre-stored and counted previously for various regions, and transmits the domain name parsing address to the client. The correspondence between a domain name and an address pre-stored in the server represents the corresponding relationship between the domain name and the domain name available parsing addresses which is a domain name parsing address capable of accessing the domain name successfully. The domain name parsing address, transmitted by the server, corresponding to the domain name is received by the client, which can reduce intermediate links of the domain name parsing and increase an efficiency of the domain name parsing.

[0108] Some other embodiments of the present disclosure can be available to those skilled in the art upon consideration of the specification and practice of the various embodiments disclosed herein. The specification and examples can be shown as illustrative only, and the true scope of the disclosure is indicated by the following claims.

Claims

1. A domain name parsing method, applied to a server, the method comprising:

acquiring (S41) a domain name parsing request transmitted by a client, the domain name parsing request including a domain name and home information of the client; and
inquiring (S42), in pre-stored statistical information, a correspondence between the domain name and an address, based on the home information, wherein the correspondence corresponds to a region to which the client belongs, **characterized in that**:

the pre-stored statistical information includes the correspondence between the domain name and the address, obtained previously for the region, and the correspondence between the domain name and the address represents a corresponding relationship between the domain name and a domain name available parsing address which is a domain name parsing address determined based on history report information from a plurality of clients; and
the method further comprises:

determining (S43) and transmitting the domain name parsing address acquired by parsing the domain name included in the inquiring request, based on the correspondence between the domain name and the address corresponding to the region,
wherein the method further comprises determining in advance the statistical information by adopting following modes:

acquiring (S51) information report-

ed by each of the plurality of clients within a designated historical period, the information including the home information, the domain name, the domain name parsing address and a parsing result representing whether assessing of the domain name based on the domain name parsing address was successful;
determining (S52) for each of the plurality of clients the region to which a home belongs, the home corresponding to the home information reported by the respective clients; and
counting (S53), for each region, the domain name available parsing addresses of each domain name, based on the domain name, the domain name parsing address and the parsing result, and establishing (S53) the correspondence between the domain name and the counted domain name parsing addresses so as to obtain the correspondence between the domain name and the address for the various regions,
wherein the designated historical period is set to ensure that the domain name parsing addresses acquired for the various regions, are latest domain name parsing addresses.

2. The domain name parsing method of claim 1, wherein the counting the domain name available parsing addresses for each domain name comprises:
counting periodically, according to a designated time unit, and updating (S63) the domain name available parsing addresses for each domain name.

3. The domain name parsing method of any one of claims 1-2, wherein the domain name available parsing addresses is a domain name parsing address making it possible to access the network successfully and having an access time less than a predetermined time threshold when accessing the domain name.

4. The domain name parsing method of claim 3, wherein the determining the domain name parsing address corresponding to the domain name included in the inquiring request based on the correspondence between the domain name and the address corresponding to the region comprises:
determining a predetermined number of acquired domain name available parsing addresses as the domain name parsing address corresponding to the domain name included in the inquiring request in an ascending order of the access time.

5. A domain name parsing apparatus implementing the domain name parsing method of any one of claims 1-4, comprising:

a processor (1020);
memory (1004) storing processor-executable instructions;
wherein the processor (1020) is configured to perform the domain name parsing method.

6. A non-transitory computer-readable storage medium having computer executable instructions stored thereon, for execution by a processor to perform the domain name parsing method of any one of claims 1-4.

Patentansprüche

1. Verfahren zum Parsen von Domänennamen, angewandt auf einen Server, wobei das Verfahren die folgenden Schritte aufweist:

Erfassen (S41) einer von einem Client gesendeten Domänennamen-Parsing-Anfrage, wobei die Domänennamen-Parsing-Anfrage einen Domänennamen und Wohnsitzinformationen des Clients aufweist; und
Abfragen (S42), in vorab gespeicherten statistischen Informationen, einer Übereinstimmung zwischen dem Domänennamen und einer Adresse, basierend auf den Wohnsitzinformationen, wobei die Übereinstimmung einer Region entspricht, in welcher der Client wohnt,
dadurch gekennzeichnet,
dass die vorab gespeicherten statistischen Informationen die Übereinstimmung zwischen dem Domänennamen und der Adresse, die zuvor für die Region ermittelt wurde, aufweisen, und die Übereinstimmung zwischen dem Domänennamen und der Adresse eine entsprechende Beziehung zwischen dem Domänennamen und einer verfügbaren Domänennamen-Parsing-Adresse wiedergibt, welche eine basierend auf Verlaufsberichtsinformationen mehrerer Clients bestimmte Domänennamen-Parsing-Adresse ist; und
das Verfahren ferner den folgenden Schritt aufweist:

Feststellen (S43) und Übertragen der durch Parsen des in der Abfrageanfrage enthaltenen Domänennamens erhaltenen Domä-

nennamen-Parsing-Adresse, basierend auf der Übereinstimmung zwischen dem Domänennamen und der Adresse, welche der Region entspricht,
wobei das Verfahren ferner das vorab erfolgende Bestimmen der statistischen Informationen durch Verwenden der folgenden Modi aufweist:

Erfassen (S51) von Informationen, welche von jedem der mehreren Clients innerhalb eines bestimmten historischen Zeitraums berichtet wurden, wobei die Informationen die Wohnsitzinformationen, den Domänennamen, die Domänennamen-Parsing-Adresse, und ein Parsing-Ergebnis, das angibt, ob das Feststellen des Domänennamens basierend auf der Domänennamen-Parsing-Adresse erfolgreich war, aufweisen;
Bestimmen (S52) der Region, zu welcher ein Wohnsitz gehört, für jeden der mehreren Clients, wobei der Wohnsitz den von den jeweiligen Clients berichteten Wohnsitzinformationen entspricht; und
Zählen (S53), für jede Region, der verfügbaren Domänennamen-Parsing-Adressen jedes Domänennamens, basierend auf dem Domänennamen, der Domänennamen-Parsing-Adresse
und dem Parsing-Ergebnis, und Bestimmen (S53) der Übereinstimmung zwischen dem Domänennamen und den gezählten Domänennamen-Parsing-Adressen, um die Übereinstimmung zwischen dem Domänennamen und der Adresse für die verschiedenen Regionen zu erhalten,
wobei der bestimmte historische Zeitraum so eingestellt ist, dass gewährleistet ist, dass die für die verschiedenen Regionen erhaltenen Domänennamen-Parsing-Adressen die neuesten Domänennamen-Parsing-Adressen sind.

2. Verfahren zum Parsen von Domänennamen nach Anspruch 1, bei welchem das Zählen der verfügbaren Domänennamen-Parsing-Adressen für jeden Domänennamen den folgenden Schritt aufweist:
periodisches Zählen, gemäß einer bestimmten Zeiteinheit, und Aktualisieren (S63) der verfügbaren Domänennamen-Parsing-Adressen für jeden Domänennamen.

3. Verfahren zum Parsen von Domänennamen nach einem der Ansprüche 1-2, bei welchem die verfügbaren Domänennamen-Parsing-Adressen eine Domänennamen-Parsing-Adresse sind, die einen erfolgreichen Zugriff auf das Netzwerk ermöglicht und eine Zugriffszeit aufweist, die beim Zugriff auf den Domänennamen geringer als ein vorbestimmter Zeitschwellenwert ist.

4. Verfahren zum Parsen von Domänennamen nach Anspruch 3, bei welchem das Bestimmen der dem in der Abfrageanfrage enthaltenen Domänennamen entsprechenden Domänennamen-Parsing-Adresse basierend auf der Übereinstimmung zwischen dem Domänennamen und der Adresse, welche der Region entspricht, den folgenden Schritt aufweist:
Bestimmen einer vorbestimmten Anzahl erfasster verfügbarer Domänennamen-Parsing-Adressen als die dem in der Abfrageanfrage enthaltenen Domänennamen entsprechende Domänennamen-Parsing-Adresse in aufsteigender Reihenfolge der Zugriffszeit.

5. Vorrichtung zum Parsen von Domänennamen, welche das Verfahren zum Parsen von Domänennamen nach einem der Ansprüche 1-4 implementiert, mit:

einem Prozessor (1020);
einem durch den Prozessor ausführbare Befehle speichernden Speicher (1004);
wobei der Prozessor (1020) dazu ausgebildet ist, das Verfahren zum Parsen von Domänennamen auszuführen.

6. Nicht-flüchtiges computerlesbares Speichermedium, auf welchem von einem Computer ausführbare Befehle zur Ausführung durch einen Prozessor gespeichert sind, um das Verfahren zum Parsen von Domänennamen nach einem der Ansprüche 1-4 auszuführen.

Revendications

1. Procédé d'analyse de nom de domaine, appliqué à un serveur, le procédé comprenant :

l'acquisition (S41) d'une demande d'analyse de nom de domaine transmise par un client, la demande d'analyse de nom de domaine comportant un nom de domaine et des informations de rattachement du client ; et
l'interrogation (S42), dans des informations statistiques pré-stockées, d'une correspondance entre le nom de domaine et une adresse, sur la base des informations de rattachement, dans lequel la correspondance correspond à une région à laquelle appartient le client,
caractérisé en ce que :

les informations statistiques pré-stockées comportent la correspondance entre le nom de domaine et l'adresse, obtenue précédemment pour la région, et la correspondance entre le nom de domaine et l'adresse représente une relation correspondante entre le nom de domaine et une adresse d'analyse disponible de nom de domaine, qui est une adresse d'analyse de nom de domaine déterminée sur la base d'informations de rapport d'historique provenant d'une pluralité de clients ; et
le procédé comprend en outre :

la détermination (S43) et la transmission de l'adresse d'analyse de nom de domaine acquise par l'analyse du nom de domaine que comporte la demande d'interrogation, sur la base de la correspondance entre le nom de domaine et l'adresse correspondant à la région, dans lequel le procédé comprend en outre la détermination à l'avance des informations statistiques en adoptant des modes suivants :

l'acquisition (S51) d'informations rapportées par chacun de la pluralité de clients au sein d'une période historique désignée, les informations comportant les informations de rattachement, le nom de domaine, l'adresse d'analyse de nom de domaine et un résultat d'analyse indiquant si l'évaluation du nom de domaine sur la base de l'adresse d'analyse de nom de domaine a réussi ;
la détermination (S52) pour chacun de la pluralité de clients de la région à laquelle appartient un domicile, le domicile correspondant aux informations de rattachement rapportées par les clients respectifs ; et
le comptage (S53), pour chaque région, des adresses d'analyse de nom de domaine disponibles pour chaque nom de domaine, sur la base du nom de domaine, de l'adresse d'analyse de nom de domaine et du résultat d'analyse, et l'établissement (S53) de la correspondance entre le nom de domaine et les adresses d'analyse de nom de domaine comptées de manière à obtenir la correspondance entre le nom de domaine et l'adresse pour les différentes régions,
dans lequel la période historique désignée est établie pour garantir que les adresses d'analyse de nom de domaine acquises pour les différentes régions, sont les adresses d'analyse de nom de domaine les plus récentes.

2. Procédé d'analyse de nom de domaine selon la revendication 1, dans lequel le comptage des adresses d'analyse de nom de domaine disponibles pour chaque nom de domaine comprend :
le comptage périodique, selon une unité de temps désignée, et la mise à jour (S63) des adresses d'analyse de nom de domaine disponibles pour chaque nom de domaine.

3. Procédé d'analyse de nom de domaine selon l'une quelconque des revendications 1 à 2, dans lequel les adresses d'analyse de nom de domaine disponibles sont des adresses d'analyse de nom de domaine permettant d'accéder au réseau avec succès et ayant un temps d'accès inférieur à un seuil de temps prédéterminé lors de l'accès au nom de domaine.

4. Procédé d'analyse de nom de domaine selon la revendication 3, dans lequel la détermination de l'adresse d'analyse de nom de domaine correspondant au nom de domaine que comporte la demande d'interrogation sur la base de la correspondance entre le nom de domaine et l'adresse correspondant à la région comprend :
la détermination d'un nombre prédéterminé d'adresses d'analyse disponibles de nom de domaine acquis comme adresse d'analyse de nom de domaine correspondant au nom de domaine que comporte la demande d'interrogation dans un ordre croissant du temps d'accès.

5. Appareil d'analyse de nom de domaine mettant en oeuvre le procédé d'analyse de nom de domaine selon l'une quelconque des revendications 1 à 4, comprenant :

un processeur (1020) ;
une mémoire (1004) stockant des instructions exécutables par le processeur ;
dans lequel le processeur (1020) est configuré pour effectuer le procédé d'analyse de nom de domaine.

6. Support de stockage non transitoire lisible par ordinateur sur lequel sont stockées des instructions exécutables par ordinateur, destinées à être exécutées par un processeur pour effectuer le procédé d'analyse de nom de domaine selon l'une quelconque des

revendications 1 à 4.

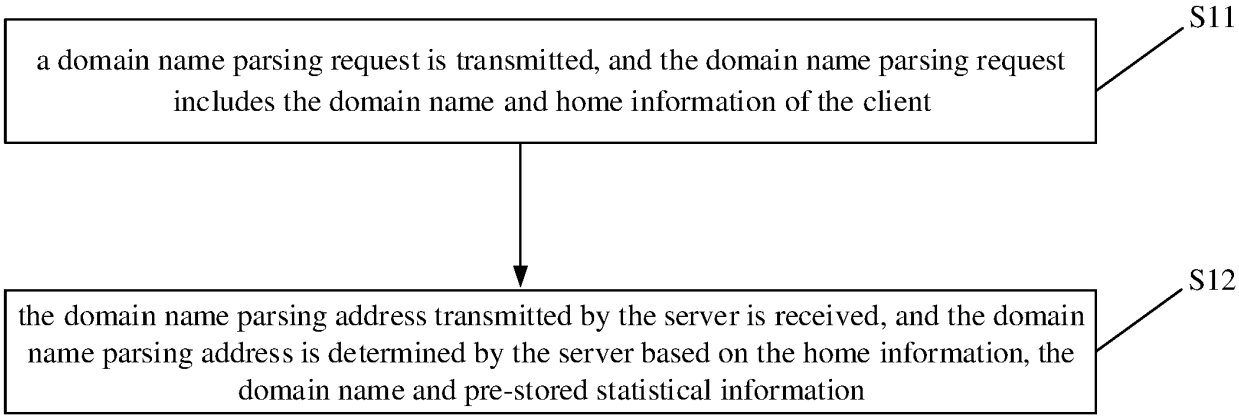
a domain name parsing request is transmitted, and the domain name parsing request includes the domain name and home information of the client
S11
the domain name parsing address transmitted by the server is received, and the domain name parsing address is determined by the server based on the home information, the domain name and pre-stored statistical information
S12

FIG. 1

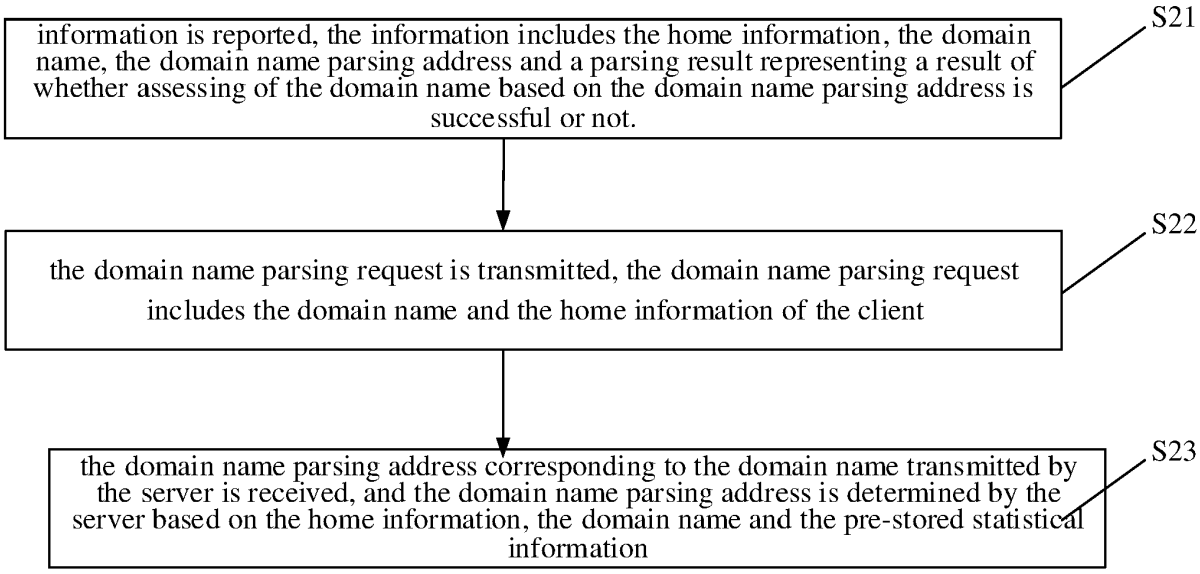
information is reported, the information includes the home information, the domain name, the domain name parsing address and a parsing result representing a result of whether assessing of the domain name based on the domain name parsing address is successful or not.
S21
the domain name parsing request is transmitted, the domain name parsing request includes the domain name and the home information of the client
S22
the domain name parsing address corresponding to the domain name transmitted by the server is received, and the domain name parsing address is determined by the server based on the home information, the domain name and the pre-stored statistical information
S23

FIG. 2

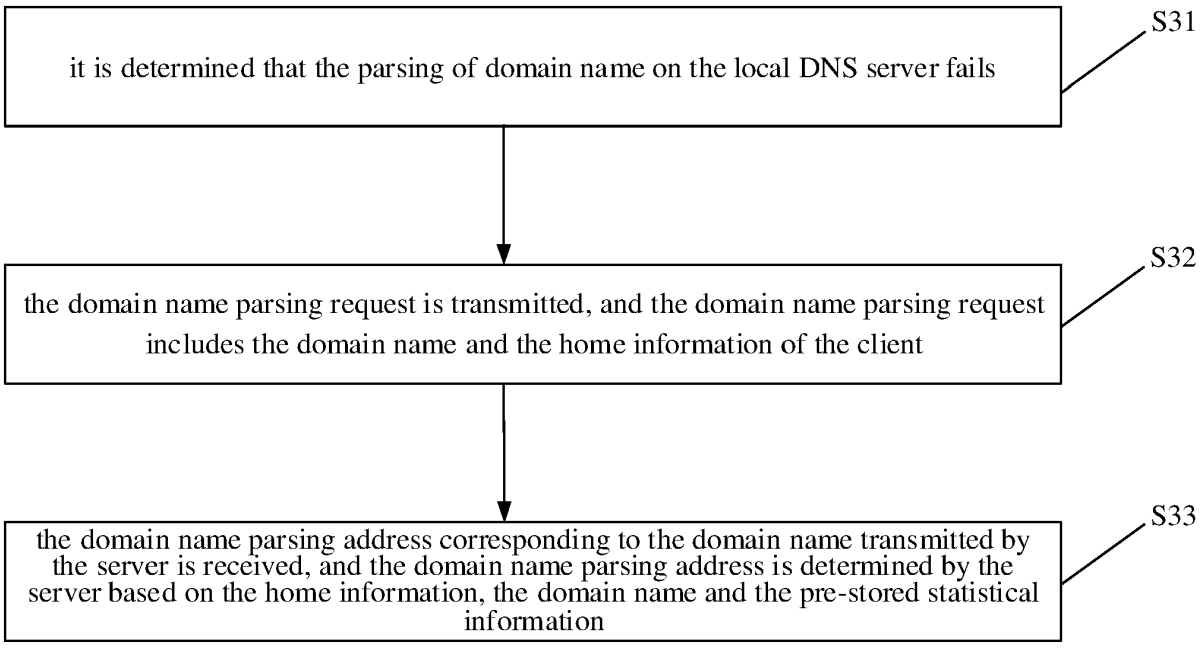
it is determined that the parsing of domain name on the local DNS server fails
S31
the domain name parsing request is transmitted, and the domain name parsing request includes the domain name and the home information of the client
S32
the domain name parsing address corresponding to the domain name transmitted by the server is received, and the domain name parsing address is determined by the server based on the home information, the domain name and the pre-stored statistical information
S33

FIG. 3

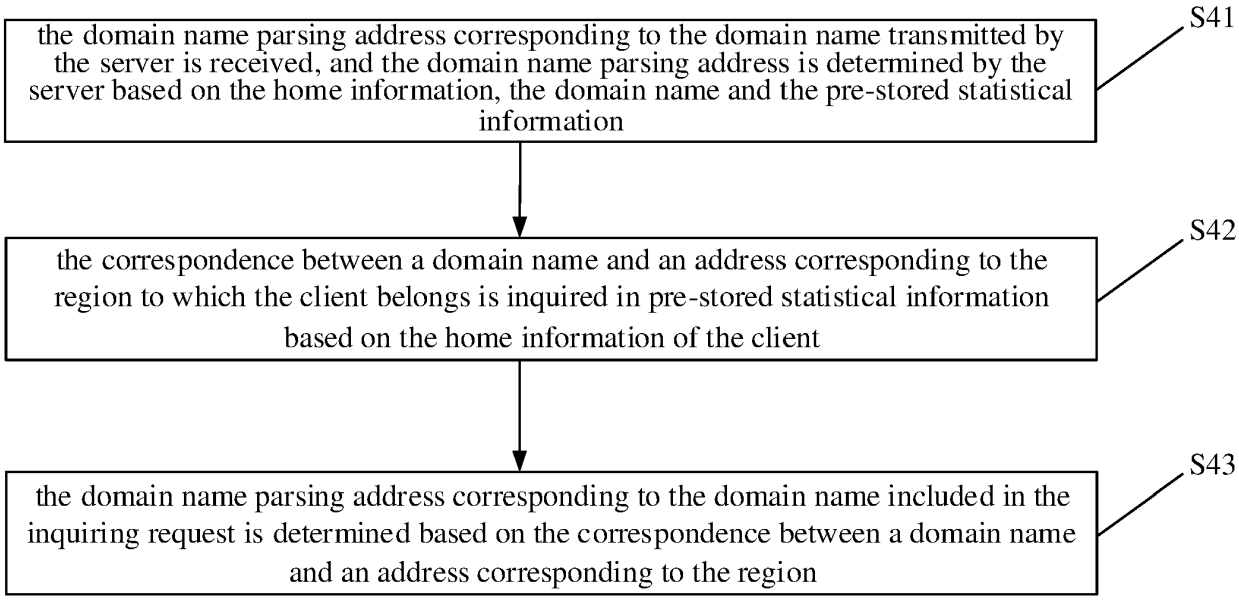
the domain name parsing address corresponding to the domain name transmitted by the server is received, and the domain name parsing address is determined by the server based on the home information, the domain name and the pre-stored statistical information
S41
the correspondence between a domain name and an address corresponding to the region to which the client belongs is inquired in pre-stored statistical information based on the home information of the client
S42
the domain name parsing address corresponding to the domain name included in the inquiring request is determined based on the correspondence between a domain name and an address corresponding to the region
S43

FIG. 4

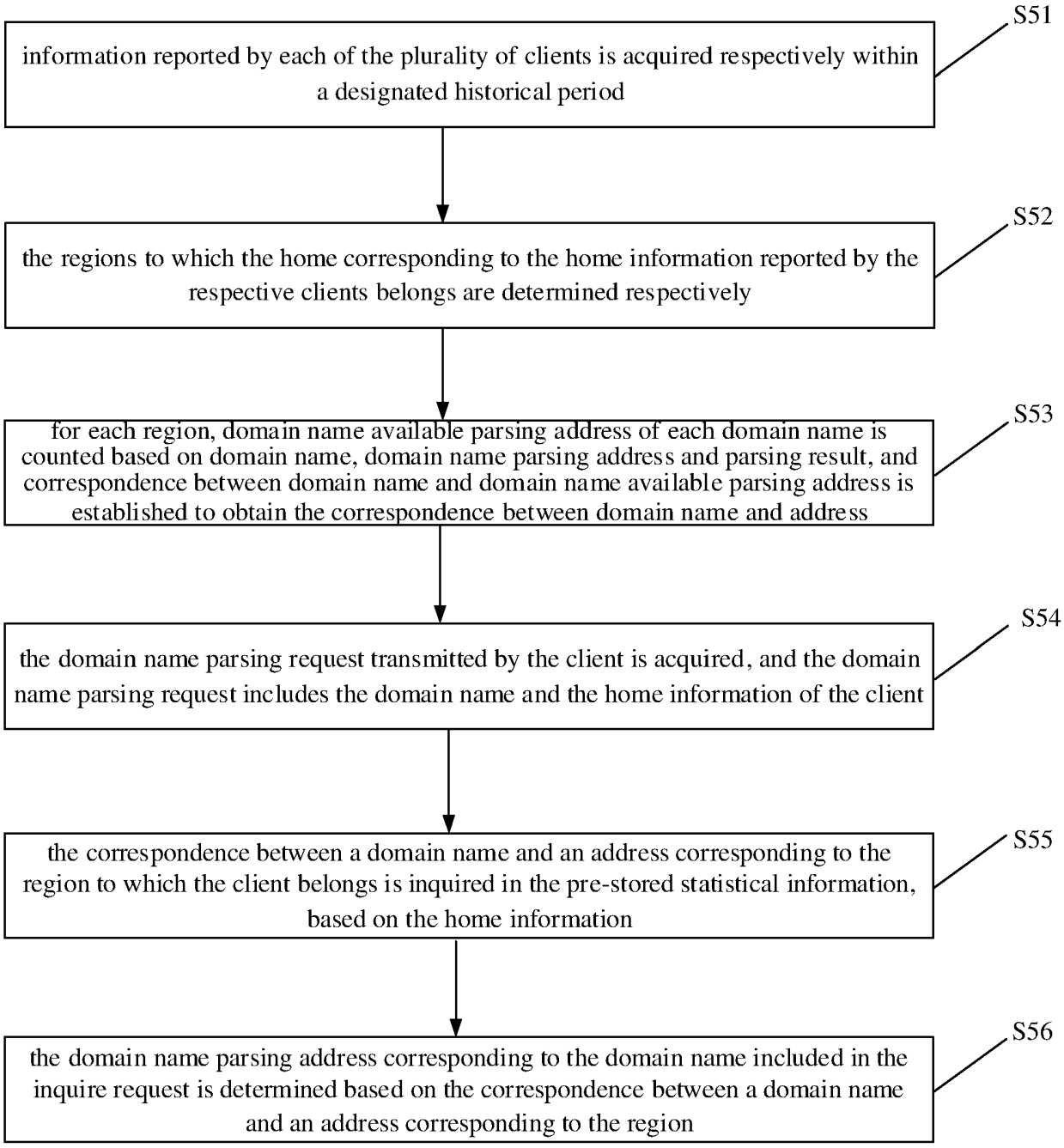
S51
information reported by each of the plurality of clients is acquired respectively within a designated historical period
S52
the regions to which the home corresponding to the home information reported by the respective clients belongs are determined respectively
S53
for each region, domain name available parsing address of each domain name is counted based on domain name, domain name parsing address and parsing result, and correspondence between domain name and domain name available parsing address is established to obtain the correspondence between domain name and address
S54
the domain name parsing request transmitted by the client is acquired, and the domain name parsing request includes the domain name and the home information of the client
S55
the correspondence between a domain name and an address corresponding to the region to which the client belongs is inquired in the pre-stored statistical information, based on the home information
S56
the domain name parsing address corresponding to the domain name included in the inquire request is determined based on the correspondence between a domain name and an address corresponding to the region

FIG. 5

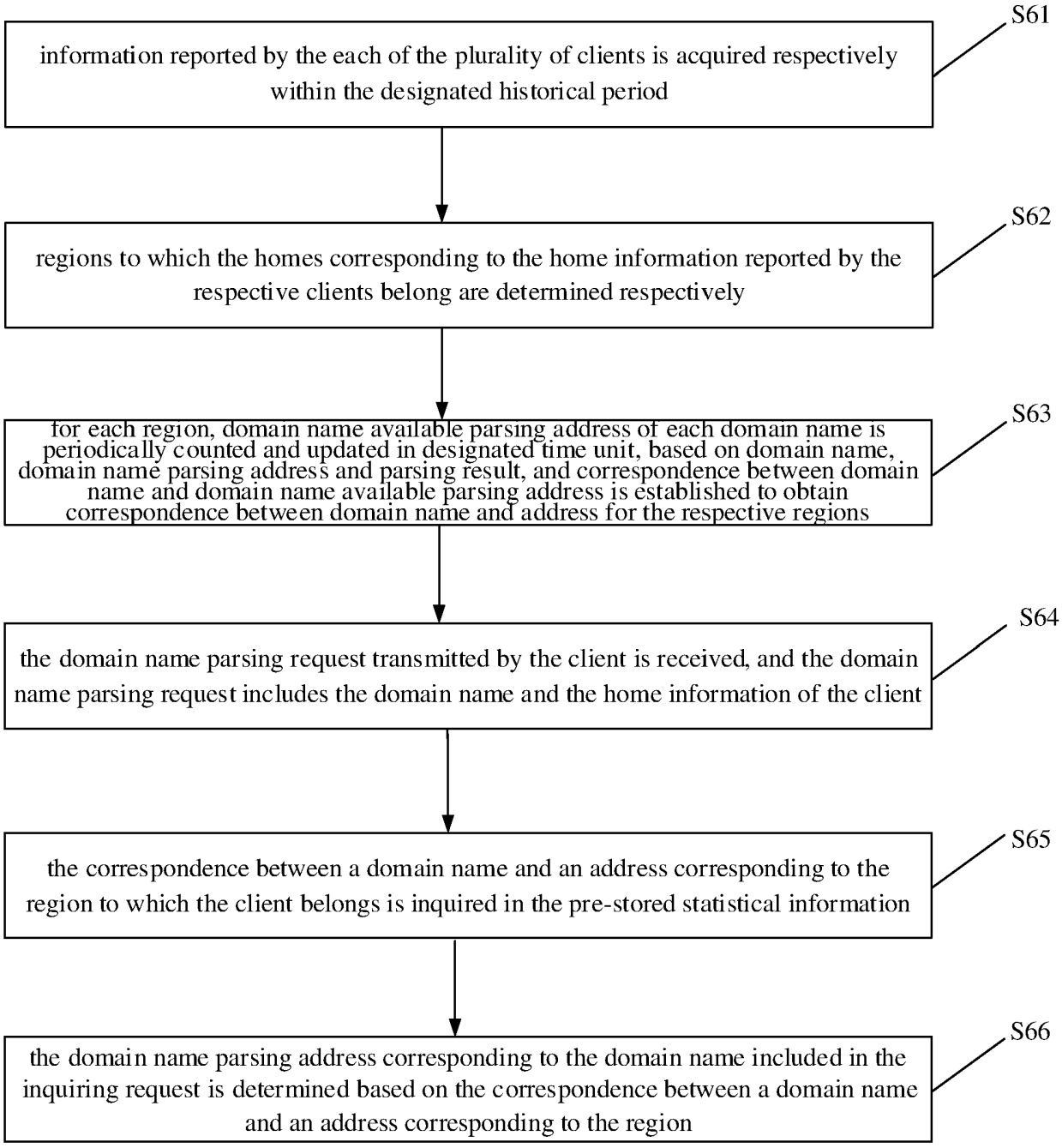
S61
information reported by the each of the plurality of clients is acquired respectively within the designated historical period
S62
regions to which the homes corresponding to the home information reported by the respective clients belong are determined respectively
S63
for each region, domain name available parsing address of each domain name is periodically counted and updated in designated time unit, based on domain name, domain name parsing address and parsing result, and correspondence between domain name and domain name available parsing address is established to obtain correspondence between domain name and address for the respective regions
S64
the domain name parsing request transmitted by the client is received, and the domain name parsing request includes the domain name and the home information of the client
S65
the correspondence between a domain name and an address corresponding to the region to which the client belongs is inquired in the pre-stored statistical information
S66
the domain name parsing address corresponding to the domain name included in the inquiring request is determined based on the correspondence between a domain name and an address corresponding to the region

FIG. 6

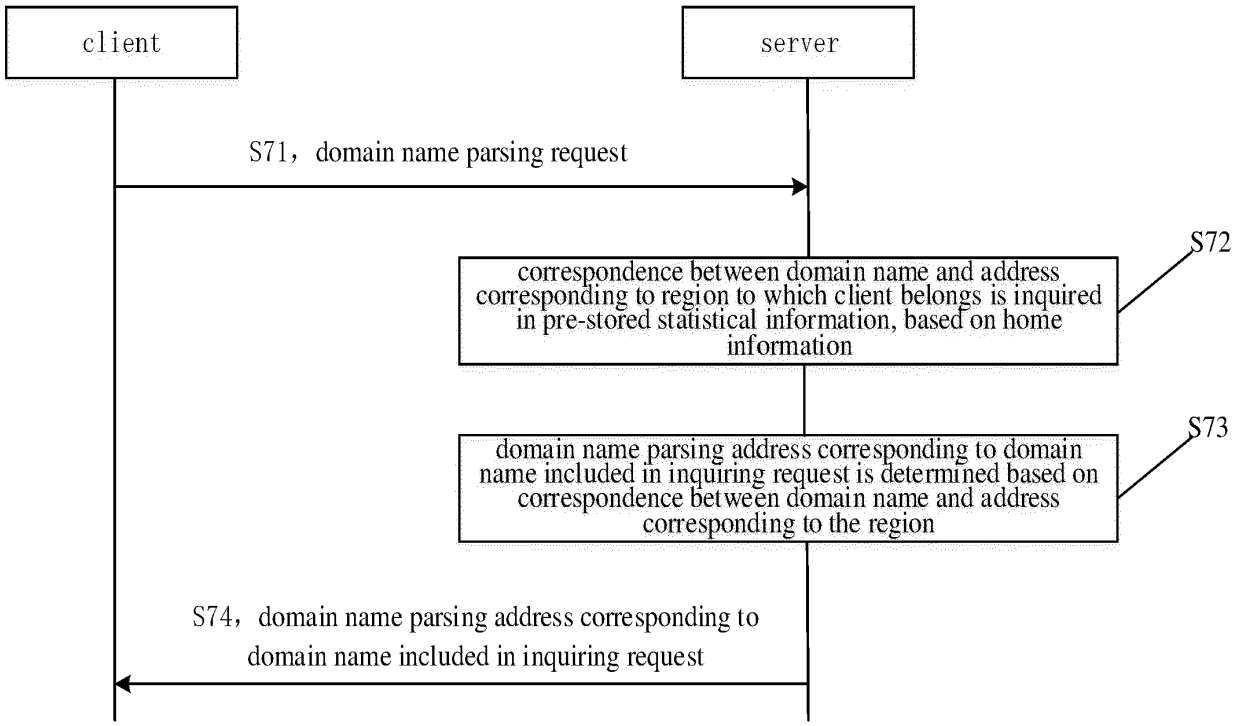

FIG. 7

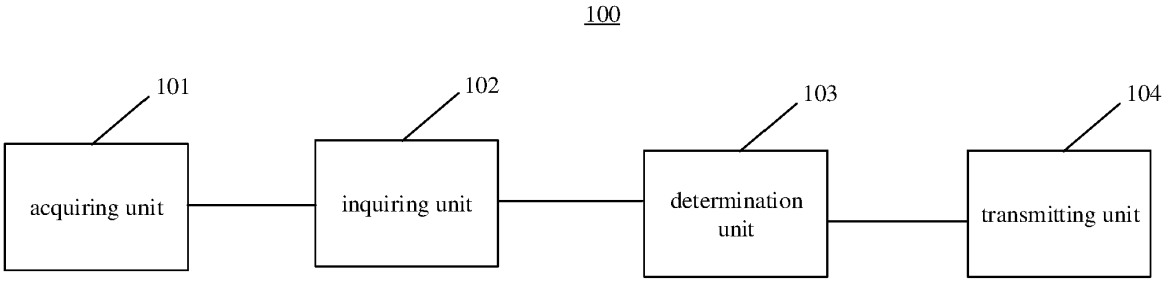

FIG. 8

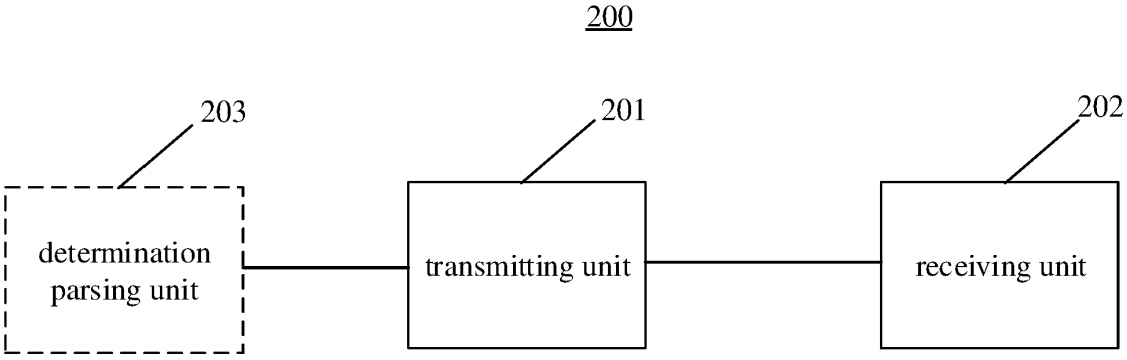

FIG. 9

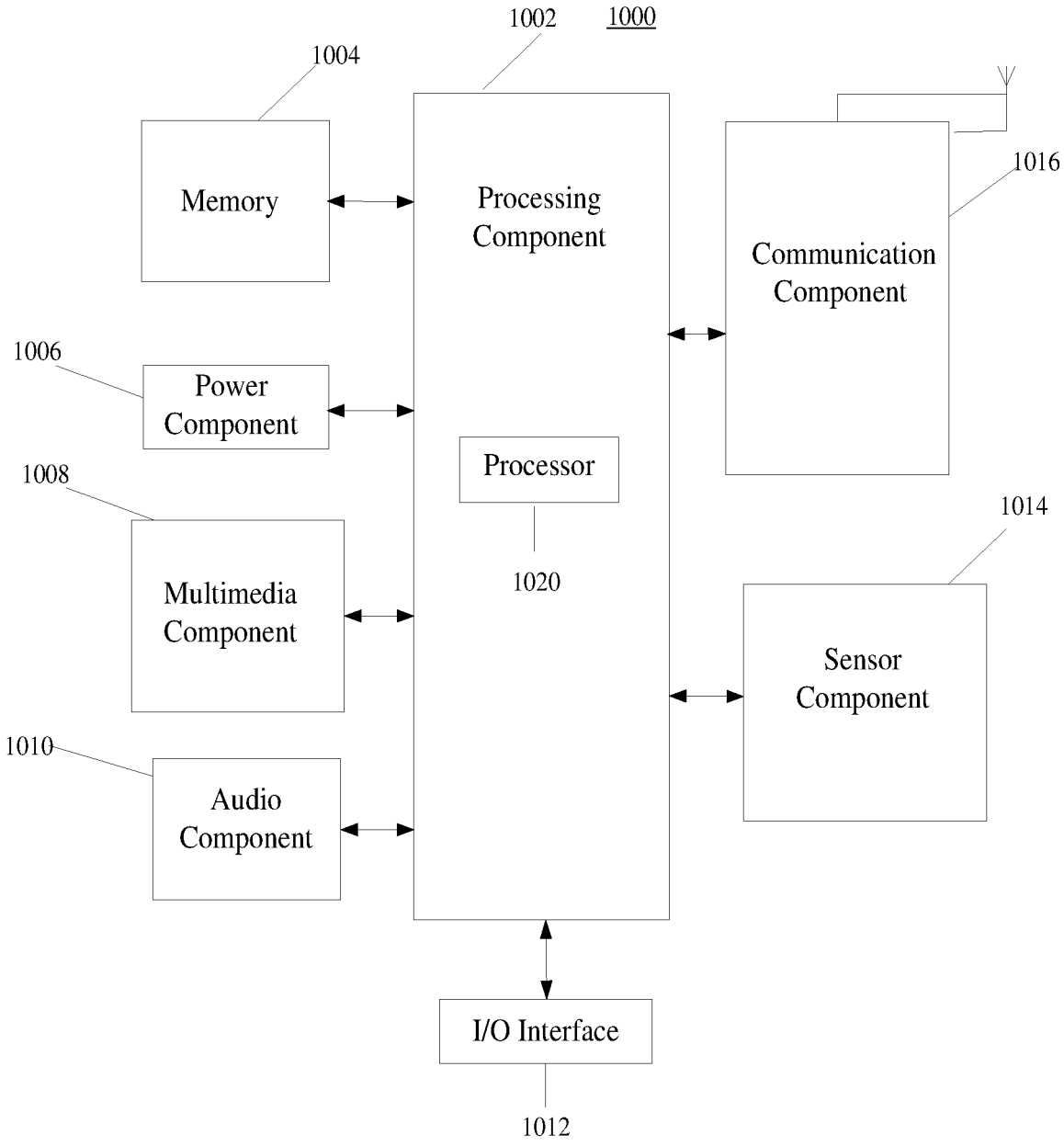
1002
1000
1004
Memory
Processing Component
Communication Component
1016
1006
Power Component
Processor
1020
1008
Multimedia Component
1014
Sensor Component
1010
Audio Component
I/O Interface
1012

FIG. 10

REFERENCES CITED IN THE DESCRIPTION

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