URL, such as the Original URL or network storage provider URL, are well known and have not been illustrated.

[0037] In an illustrative embodiment, the identification of the identification of a DNS server authoritative to the "contentprovider" corresponds to an IP address of a DNS server associated with the service provider 106. In one embodiment, the IP address is a specific network address unique to DNS server component(s) of a specific POP associated with the service provider 106. In another embodiment, the IP address can be shared by one or more POPs associated with the service provider 106, which may be geographically or logically distributed. In this embodiment, a DNS query to the shared IP address utilizes a one-to-many network routing schema, such as anycast, such a specific POP will receive the request as a function of network topology. For example, in an anycast implementation, a DNS query issued by a client computing device 102 to a shared IP address will arrive at a DNS server component of the service provider 106 logically having the shortest network topology distance, often referred to as network hops, from the client computing device. The network topology distance does not necessarily correspond to geographic distance. However, in some embodiments, the network topology distance can be inferred to be the shortest network distance between a client computing device 102 and a service provider POP.

[0038] With continued reference to FIGURE 4B, once one of the DNS servers in the service provider 106 receives the request, the specific DNS server attempts to resolve the request. In an illustrative embodiment, a specific DNS server can resolve the DNS query by identifying an IP address of a network storage provider storage component ~~142, 148, 154~~ 140, 144 (FIGURE 1) or the origin server component 114 and associated storage component 116 (FIGURE 1) that will process the request for the requested resource. The identified IP address of a network storage provider storage component ~~142, 148, 154~~ 140, 144 (FIGURE 1) or the origin server component 114 and associated storage component 116 (FIGURE 1) will be generically referred to as the "storage component" or the "selected storage component." Illustratively, the service provider 106 can utilize information provided by the content provider 104, information maintained by the service provider 106 and information provided by third parties to resolve client computing device DNS queries.

received in a region not corresponding to the content provider's regional plan may be better processed by a DNS server in region corresponding to the content provider's regional plan. In this example, the DNS server component 118 may also obtain geographic information from the client directly (such as information provided by the client computing device or ISP) or indirectly (such as inferred through a client computing device's IP address).

[0049] In a further illustrative example, the service provider 106 can attempt to direct a DNS query to DNS severs according to service level criteria. The service level criteria can correspond to service or performance metrics contracted between the service provider 106 and the content provider 104. Examples of performance metrics can include latencies of data transmission between the service provider POPs and the client computing devices 102, total data provided on behalf of the content provider 104 by the service provider POPs, error rates for data transmissions, and the like.

[0050] In still a further example, the service provider 106 can attempt to direct a DNS query to DNS severs according to network performance criteria. The network performance criteria can correspond to measurements of network performance for transmitting data from the CDN service provider POPs to the client computing device 102. Examples of network performance metrics can include network data transfer latencies (measured by the client computing device or the service provider 106, network data error rates, and the like.

[0051] In accordance with an illustrative embodiment, the DNS server maintains a data store that defines CNAME records for various URLs. If a DNS query corresponding to a particular URL matches an entry in the data store, the DNS server ~~component 118~~ returns a CNAME record as defined in the data store. In an illustrative embodiment, the data store can include multiple CNAME records corresponding to a particular original URL. The multiple CNAME records would define a set of potential candidates that can be returned to the client computing device. In such an embodiment, the DNS server ~~component 118~~, either directly or via a network-based service, can implement additional logic in selecting an appropriate CNAME from a set of possible of CNAMEs. In an illustrative embodiment, each DNS server component ~~118, 124, 130~~122, 128, 134 maintains the same data stores that define CNAME records, which can be managed centrally by the service provider 106. Alternatively, each DNS server

component ~~118, 124, 130~~ 122, 128, 134 can have a POP specific data stores that define CNAME records, which can be managed centrally by the service provider 106 or locally at the POP ~~116, 122, 128~~120, 126, 132.

[0052] With reference now to FIGURE 4C, upon receipt of the successful resolution of the DNS query (e.g., resulting in the returning of an IP address to the client computing device 102), the client computing device 102 transmits embedded resource requests to the IP address. In turn, the receiving storage component (either the network storage provider 110 or origin server component 114 and associated storage component 116) can process the request by providing the requested content. The requested content can be transmitted to the requesting client computing device 102 via the communication network 108.

[0053] With reference now to FIGURE 5, one embodiment of a routine 500 implemented by the service provider 106 for managing registration of content provider 104 will be described. One skilled in the relevant art will appreciate that actions/steps outlined for routine 500 may be implemented by one or many computing devices/components that are associated with the service provider 106. Accordingly, routine 500 has been logically associated as being generally performed by the service provider 106, and thus the following illustrative embodiments should not be construed as limiting.

[0054] At block 502, the service provider 106 obtains a request for providing DNS request routing services on behalf of a content provider 104. Illustratively, the request for providing DNS request routing services may be facilitated through a registration API in which the content provider specifies information necessary for the service provider 106 to begin hosting DNS nameserver functionality on behalf of the content provider. The transmission of the registration API (and associated information) may be an automatic process corresponding to an exchange of information between computing devices without need for administrator, or other human interaction. Alternatively, the transmission of the registration API (and associated information) may be an automatic process may be a manual, or semi-manual, process in which an administrator specifies at least a portion of the information necessary for the service provider 106 to begin hosting DNS nameserver functionality on behalf of the content provider. An illustrative screen display for the manual specification of at least a portion of the information necessary for the service provider 106 to begin hosting DNS nameserver functionality on behalf of the content provider will be described with regard to FIGURE 7.

threshold. Alternative or additional methodologies may also be practiced to determine whether the DNS server is authoritative.

[0061] If the current DNS server is authoritative (including a determination that the same DNS server will be authoritative for subsequent DNS queries), the current DNS server resolves the DNS query by returning the IP address of cache server component at block 608. In a non-limiting manner, a number of methodologies for selecting an appropriate resource cache component have been previously discussed. Additionally, the service provider 106 can obtain real time or semi-real time information regarding that status of the various available storage components, such as a current load, availability, resource utilization, health information, and the like. Still further, as described above, the IP address may correspond to a specific cache server of a resource cache component or generally to group of cache servers. The identification of the IP address may be provided to the client computing device 102 responsive to the received DNS query. Alternatively, if the DNS query was received as an API, the identification of the IP address may be provided via an API.

[0062] Alternatively, if at decision block 606, the DNS server is not authoritative, at block 610, the DNS server component selects and transmits an alternative resource identifier. As described above, the DNS server component can utilize a data store to identify an appropriate CNAME as a function of the current DNS query. Additionally, the DNS server component can also implement additional logical processing to select from a set of potential CNAMES. Illustratively, the identification of the selected CNAMES may be provided to the client computing device 102 responsive to the received DNS query. Alternatively, if the DNS query was received as an API, the identification of the CNAME may be provided via an API. At block 612, different DNS server components ~~118, 124, 130~~ 122, 128, 134 receive a DNS query corresponding to the CNAME. The routine 600 then returns to decision block 606 and continues to repeat as appropriate.

[0063] With reference now to FIGURE 7, one illustrative embodiment of a user interface or screen display 700 in which information for registering a content provider 104 for request routing functionality with a service provider 106 will now be described. In this illustrative embodiment, the screen display 700 corresponds to a Web page or software

~~WHAT IS~~ CLAIMS~~ED IS~~:

1. A computer-implemented method for managing request routing functionality comprising:

obtaining registration information at a service provider for registering one or more content providers with the service provider, the registration corresponding to hosting at least of portion of request routing functionality associated with one or more resources provided by the content provider;

obtaining identification of request routing information to be utilized by the service provider in processing and resolving DNS queries; ~~and~~

obtaining a DNS query from a client computing device at a first DNS server, wherein the DNS query corresponds to a requested resource associated with a resource identifier and wherein the first DNS server corresponds to the service provider; and

providing the client computing device with at least one of an identifier corresponding to a storage component for the requested resource based on supplemental request routing information not included in the resource request and an alternative resource identifier query to resolve to a domain corresponding to the service provider and the supplemental request routing information not included in the first resource identifier.

~~2. The method as recited in Claim 1, wherein the one or more resources correspond to one or more embedded resources.~~

~~3. The method as recited in Claim 1, wherein the one or more resources correspond to a domain associated with the content provider~~

~~4.~~2. The method as recited in Claim 1, wherein the storage component corresponds to at least one of the content provider, the service provider and a network storage provider.

~~5.~~3. The method as recited in Claim 1 or Claim 2, wherein the request routing information comprises at least one of service level plan information and geographic selection information.

~~6.~~4. The method as recited in any one of the preceding Claims ~~1~~, wherein the request routing information comprises cost information associated with one or more storage components.

~~7.~~5. The method as recited in any one of the preceding Claims ~~1~~ further comprising causing generation, by the service provider, of a user interface for registering the one or more domains associated with the content provider with the service provider.

6. The method as recited in any one of the preceding Claims, wherein the one or more resources correspond to at leaset one of :

one or more embedded resources; and

a domain associated with the content provider.

~~8.~~7. A system for request routing comprising:

an interface component for obtaining

registration information at a service provider for registering one or more content providers with the service provider, the registration corresponding to hosting at least of portion of request routing functionality associated with one or more resources provided by the content provider; and

identification of request routing information to be utilized by the service provider in processing and resolving DNS queries;

a first network point of presence associated with a service provider, wherein the first network point of presence includes a DNS server component that receives a DNS query from a client computing device, wherein the DNS query corresponds to a requested resource associated with a first resource identifier, and wherein the DNS server in the first network point of presence is operable to:

determine that the first resource identifier is associated with an alternative resource identifier as a function of request routing criteria associated with a content provider; and

transmit an alternative resource identifier to the client computing device, wherein the alternative resource identifier includes information for causing a DNS query to resolve to a domain corresponding to the service provider;

a second network point of presence associated with a service provider, wherein the second network point of presence includes a DNS server component that receives a subsequent DNS query from a client computing device, wherein the subsequent DNS query corresponds to a requested resource associated with the alternative resource identifier, and wherein the DNS server in the second network point of presence is operable to:

resolve the subsequent DNS query to identify a cache component for providing content associated with the original resource request; and

transmit information identifying the identified cache component to the client computing device.

~~9~~8. The system as recited in Claim ~~8~~7, wherein the ~~original~~ first resource identifier includes at least a portion of the request routing criteria.

~~10~~9. The system as recited in Claim 7 or Claim 8, wherein the DNS server in the first network point of presence is further operable to obtain at least a portion of the cost information.

~~1~~10. The system as recited in any one of Claims 7 to ~~9~~8, wherein the alternative resource identifier corresponds to a canonical name record identifier.

112. The system as recited in any one of Claims 7 to 108, wherein the request routing criteria includes regional service information and wherein the alternative resource identifier includes information identifying a regional service plan provided by the service provider.

123. The system as recited in any one of Claims 7 to 118, wherein information identifying the identified cache component to the client computing device includes a network address of a cache component associated with the content provider.

134. The system as recited in any one of Claims 87 to 12, wherein information identifying the identified cache component to the client computing device includes a network address of a cache component associated with a third party service provider.

145. The system as recited in any one of Claims 7 to 138, wherein the request routing criteria includes cost information and wherein the alternative resource identifier includes information identifying a cost plan provided by the service provider.

156. The system as recited in any one of Claims 7 to 148, wherein the request routing criteria includes network performance information and wherein the alternative resource identifier includes information identifying a network performance plan provided by the service provider.