

# Exhibit 1006

(12) **United States Patent**  
**Smith et al.**

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(45) **Date of Patent:** **Jan. 22, 2002**

(54) **DIRECTING DATA OBJECT ACCESS REQUESTS IN A DISTRIBUTED CACHE**

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(73) Assignee: **Microsoft Corporation**, Redmond, WA (US)

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(52) **U.S. Cl.** ..... **709/226**

(58) **Field of Search** ..... 709/201, 203, 709/217, 218, 219, 223, 224, 225, 226, 227

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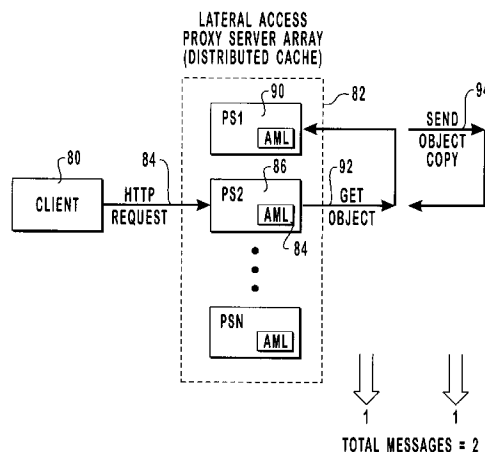
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(57) **ABSTRACT**

A method, computer program product, and system for routing URL data object requests in a proxy server array. A URL data object request is received at one proxy server of the array while the desired URL data object resides in the local cache of another proxy server in the array. The receiving proxy server will deterministically identify the residing proxy server based on information residing thereon without resorting to expensive query-response transactions, such as those that occur in proxy server arrays using ICP. An array membership list containing array membership information is available at each and every proxy server and is used in conjunction with the URL as the information for identifying the correct proxy server where the URL data object resides. First, a deterministic hash value is computed for each proxy server name and the URL. Next, a combined hash value is computed that combines the URL hash value with each proxy server hash value. Finally, the proxy server with the highest "score" or combined hash value is identified as the proxy server where the desired URL data object should reside in local cache storage. Since the array membership list, the URL, and the hashing algorithm are the same at each proxy server, the same proxy server will be identified as having the URL data object regardless of which proxy server originally receives the URL data object request.

**24 Claims, 11 Drawing Sheets**



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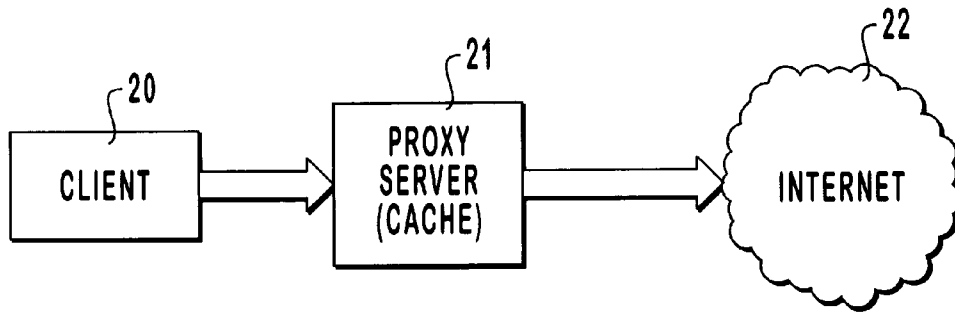


FIG. 1

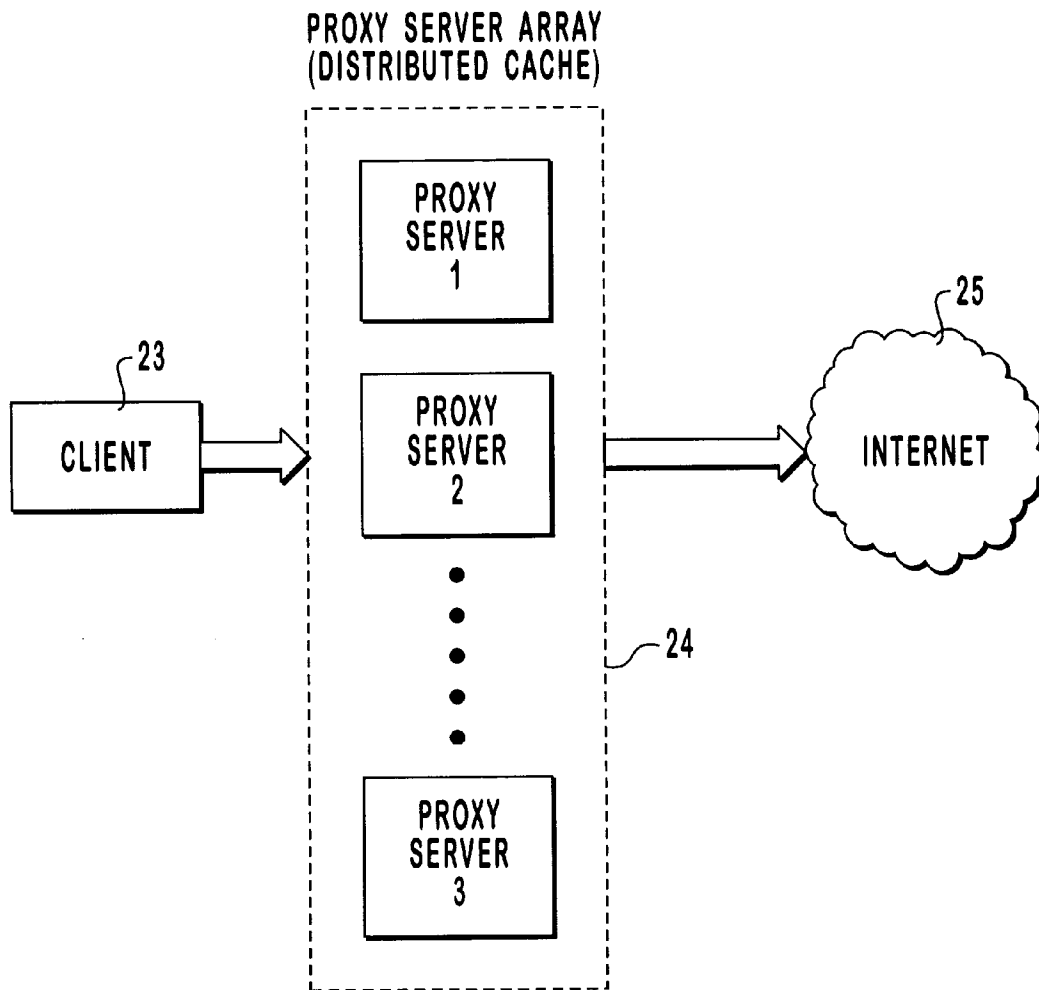


FIG. 2

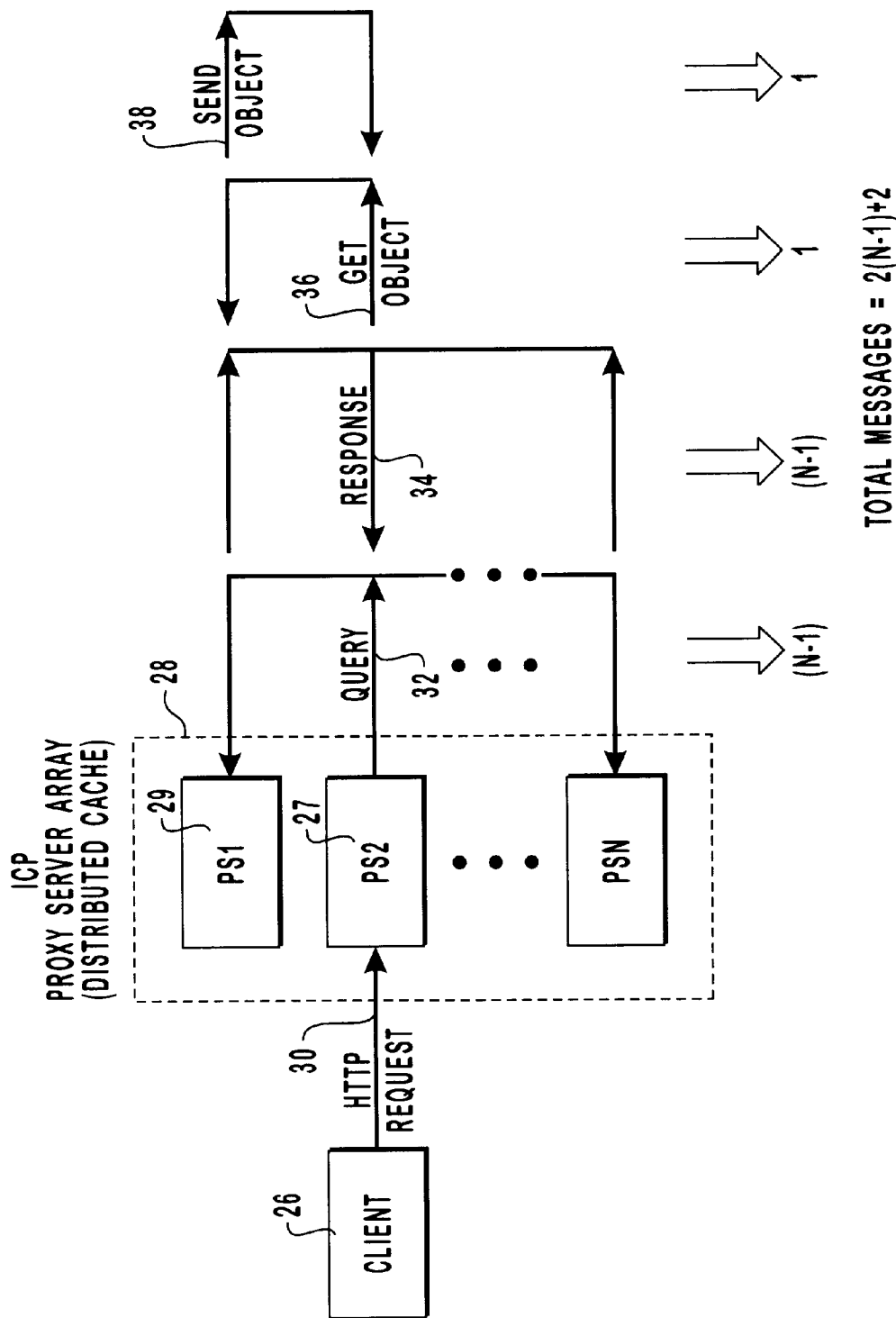


FIG. 3

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