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07/03/97

770-101

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Date: 7/3/97

Applicant: Thomas Yohe et al.  
Serial No.: 08/  
Filed:  
For: APPARATUS AND METHOD FOR INCREASED DATA ACCESS IN A NETWORK FILE ORIENTED CACHING SYSTEM  
Docket No.: S-00014-003

Box Patent Application  
Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

Enclosed are the following papers:

- Specification, abstract and claims, \_\_ pages total.
- Drawings: \_ sheet(s),  formal, \_ informal
- Declaration and Power of Attorney  executed  
\_ unexecuted
- A claim for priority under 35 U.S.C. 119 is hereby made with respect to \_\_\_\_\_ Application No. \_\_\_\_\_ filed \_\_\_\_\_. A certified copy of that application \_ is enclosed/\_ will be filed later.
- A claim for priority under 35 U.S.C. 120 is hereby made with respect to U.S. Application No. 08/565,393 filed 11/30/95.
- Statement by inventor as to small entity status
- Enclosed herewith is a check in the amount of \$ 770, which is calculated as follows.
- Preliminary amendment
- Information Disclosure Statement
- The inventorship for all the claims in this application are:
  - The same
  - or
  - Are not the same. An explanation, including the ownership of the various claims at the time the last claimed invention was made  
\_ is submitted.

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EXHIBIT 1007

\_\_\_ will be submitted.

An assignment of the invention to  
 is attached  
\_\_\_ will follow ; enclosed herewith is a check in the  
amount of 40,00

\_\_\_ A terminal disclaimer is filed herewith and fee \$55.00


**CLAIMS AS FILED**

Number filed	Number Extra	Rate	Basic Fee 37 CFR 1.16(a)
			\$770.00
<b>Total</b>			
Claims (37 CFR 1.16(c))	-20=	X \$ 22.00 -	-----
<b>Independent</b>			
Claims (37 CFR 1.16(b))	- 3=	X \$ 80.00 -	0.00
<b>Multiple dependent claim(s), if any</b>			
(37 CFR 1.16(d))		\$260.00 -	0.00

**Filing Fee Calculation**

Large Entity 770.00  
 Small Entity ( ) x .5

Respectfully submitted,

By   
 R. William Graham  
 Reg. No. 33,891

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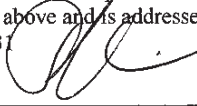
EXPRESS MAIL CERTIFICATE

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I hereby certify that the following attached:

- transmittal letter
- new application
- continuation
- divisional
- continuation-in-part
- declaration and power of attorney
- amendment
- preliminary amendment
- information disclosure statement
- response
- notice of appeal
- assignment
- petition for extension
- notification of continuation
- affidavit
- verified statement of small entity
- filing fees
- terminal disclaimer and fee

is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231

  
R. William Graham  
Reg. No. 33,891

Abstract of the Disclosure

An apparatus for increased data access in a network includes a file server computer having a permanent storage memory, a cache verifying computer operably connected to the file server computer in a manner to form a network for rapidly transferring data, the cache verifying  
5 computer having an operating system, a first memory and a processor with means for performing an operation on data stored in the permanent storage memory of the file server computer to produce a signature of the data characteristic of one of a file and directory, a remote client computer having an operating system, a first memory, a cache memory and a processor with means for performing an operation on data stored in the cache memory to produce a signature of  
10 the data, a communication server operably connected to the remote client computer to the cache verifying computer and the file server computer and comparators operably associated with the cache verifying computer and remote client computer for comparing the signatures of data with one another to determine whether the signature of data of the remote client is valid.

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APPARATUS AND METHOD FOR INCREASED DATA ACCESS IN A NETWORK FILE  
ORIENTED CACHING SYSTEM

This is a continuation-in-part of U.S. Serial No. 08/565,393 filed 11/30/95 *ka*

*ms*

Background of the Invention

5 Field of the Invention

The present invention relates to data access in a file oriented network system. More particularly, the present invention is directed to a client-agent-server utility which increases the speed in which data in the form of files and directories are accessed across slow link communications via remote node caching and verifying.

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Related Art

Many operating systems are equipped to handle caching and verifying of data. Traditionally, in a remote client's caching system, optimization in retrieving data is limited to prefetching. In other words, an application program in a remote client requests from a file server transmission of a predetermined number of bytes of information (e.g., x bytes) and the operating system on the client prefetches the requested data plus another number of bytes of information (e.g., x + y bytes). Thus, when the application requests the bytes, it already exists in its readily accessible memory (cache).

In addition, there also exist problems with verification of directories in existing systems. It has been found, for example, that two remote clients concurrently accessing data and attempting to verify a directory will not necessarily obtain the same data due to the fact that the data from the file server computer will not necessarily send out the data in the same order to each of the remote clients. Thus, there is no clear indication whether the directory data is current.

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