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(54) Title: SYSTEM AND METHOD FOR URL FETCHING RETRY MECHANISM

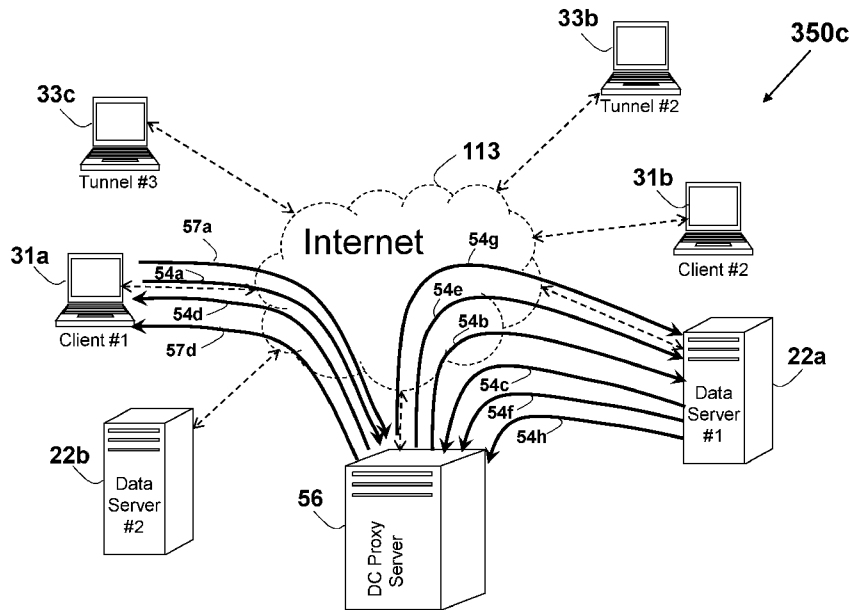


FIG. 35c

(57) Abstract: A method for overcoming intermittent, temporary, or other fetching failures by using multiple attempts for retrieving a content from a web server to a client device is disclosed. The URL fetching may use direct or non-direct fetching schemes, or a combination thereof. The non-direct fetching method may use intermediate devices, such as proxy server, Data-Center proxy server, tunnel devices, or any combination thereof. Upon sensing a failure of a fetching action, the action is repeated using the same or different parameters or attributes, such as by using different intermediate devices, selected based on different parameters or attributes, such as different countries. The repetitions are limited to a pre-defined maximum number or attempts. The fetching attempts may be performed by the client device, by an intermediate device in a non-direct fetching scheme, or a combination thereof. Various fetching schemes may be used sequentially until the content is retrieved.



OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL2020/050194

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06F 15/16; G06Q 30/00; H04L 29/08 (2020.01)

CPC - H04L 67/2838; H04L 1/1635; H04L 61/30; H04L 67/02; H04L 67/2847 (2020.08)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

see Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

see Search History document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

see Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2016/181383 A2 (HOLA NETWORKS LTD.) 17 November 2016 (17.11.2016) entire document	1-481
A	US 2019/0037047 A1 (LUMINATI NETWORKS LTD.) 31 January 2019 (31.01.2019) entire document	1-481
A	US 7,894,431 B2 (GORING et al) 22 February 2011 (22.02.2011) entire document	1-481
A	US 2015/0295988 A1 (ENSIGHTEN, INC.) 15 October 2015 (15.10.2015) entire document	1-481
A	EP 1672826 A2 (MICROSOFT CORPORATION) 21 June 2006 (21.06.2006) entire document	1-481
A	US 8,533,628 B2 (ROHRABAUGH et al) 10 September 2013 (10.09.2013) entire document	1-481

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"D" document cited by the applicant in the international application

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL2020/050194

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See extra sheet(s).

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL2020/050194

Continued from Box No. III Observations where unity of invention is lacking

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-239, 360-361 and 479-480, are drawn to a method for fetching a content over the Internet by a client device using a first device, the content is stored in a web server and is identified by a Uniform Resource Locator (URL), the method comprising: receiving, by the first device from the client device, a URL request; fetching N times.

Group II, claims 240-359 and 362, are drawn to a method for fetching by a first device over the Internet a content that is stored in a web server and is identified by a Uniform Resource Locator (URL), the method comprising: first fetching, by the first device, a first response by using a first fetching scheme; checking for determining whether the first response is a proper response that comprises the content; responsive to determining that the first response is a proper response, using the fetched content; and responsive to determining that the first response is not a proper response, performing the steps of: second fetching, by the first device.

Group III, claims 363-478 and 481, are drawn to a method for fetching by a first device over the Internet a content that is stored in a web server and is identified by a Uniform Resource Locator (URL), the method comprising: first fetching, by the first device, a first content, wherein in the first fetching a URL request is received by the web server using a first IP address as a source address.

The inventions listed as Groups I, II and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention: receiving, by the first device from the client device, a URL request; fetching N times, wherein $N > 1$ or $N = 1$, by the first device from the web server, a first response, until the first response is determined to be a proper response, wherein each one of the N times fetchings consists of, or comprises: sending, by the first device to the web server, a first message that comprises the URL request; receiving, by the first device from the web server, the first response in response to the sending of the first message to the web server; and checking and determining whether the first response is a proper response that comprises the content; responsive to determining that the first response is a proper response, sending, by the first device to the client device, the content; and responsive to determining that the first response is not a proper response, sending, by the first device to the client device, an error message as claimed therein is not present in the invention of Groups II and III. The special technical feature of the Group II invention: performing the steps of: second fetching, by the first device, a second response by using a second fetching scheme that is distinct from the first fetching scheme; checking for determining whether the second response is a proper response that comprises the content; responsive to determining that the second response is a proper response, using the fetched content; and responsive to determining that the second response is not a proper response, performing the steps of: third fetching, by the first device, a third response by using a third fetching scheme that is distinct from the first fetching scheme and from the second fetching scheme; checking for determining whether the third response is a proper response that comprises the content; responsive to determining that the third response is a proper response, using the fetched content; and responsive to determining that the third response is not a proper response, performing, by the first device, a first action as claimed therein is not present in the invention of Groups I or III. The special technical feature of the Group III invention: in the first fetching a URL request is received by the web server using a first IP address as a source address; storing, by the first device, the fetched first content; second fetching, by the first device, a second content, wherein in the second fetching the URL request is received by the web server using a second IP address as a source address, wherein the second IP address is different from the first IP address; comparing, by the first device, the stored fetched first content and the fetched second content; responsive to determining that the first and second contents are identical, using the fetched content; and responsive to determining that first and second contents are not identical, performing, by the first device, a first action as claimed therein is not present in the invention of Groups I or II.

Groups I, II and III lack unity of invention because even though the inventions of these groups require the technical feature of a method for fetching by a first device over the Internet a content that is stored in a web server and is identified by a Uniform Resource Locator (URL), this technical feature is not a special technical feature as it does not make a contribution over the prior art.

Specifically, US 2019/0037047 to LUMINATI NETWORKS LTD. teaches a method for fetching by a first device over the Internet a content that is stored in a web server and is identified by a Uniform Resource Locator (URL) (Paras. [0247-0249]).

Since none of the special technical features of the Group I, II or III inventions are found in more than one of the inventions, unity of invention is lacking.