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(54) Title: SYSTEMS AND METHODS FOR PROVIDING DYNAMIC SPILLOVER OF VIRTUAL SERVERS BASED ON BANDWIDTH

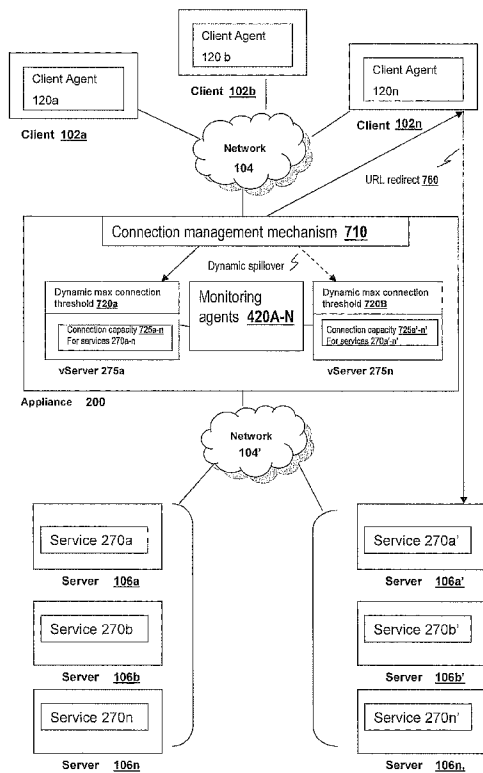


Fig. 7

(57) Abstract: The present solution provides a spillover management technique for virtual servers of an appliance based on bandwidth. A network administrator may configure a bandwidth threshold for one or more virtual servers, such as virtual servers providing acceleration or load balancing for one or more services. The bandwidth threshold may be specified as a number of bytes transferred via the virtual server. The bandwidth threshold may also be specified as a round trip time or derivative thereof. A user may specify the bandwidth threshold via a configuration interface. Otherwise, the appliance may establish the bandwidth threshold. The appliance monitors the bandwidth used by a first virtual server. In response to detecting the bandwidth reaching or exceeding the bandwidth threshold, the appliance dynamically directs client requests to a second virtual server.

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GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER

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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)
H04L G06F

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

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

EPO-Internal, WPI Data, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2001/052016 A1 (SKENE BRYAN D [US] ET AL) 13 December 2001 (2001-12-13) page 2, paragraph 43-49 page 3, paragraphs 54,55	1,2, 4-24, 26-45
A	page 6, paragraph 71 - page 7, paragraph 75 page 11, paragraph 95 page 12, paragraph 99-103 page 13, paragraph 109 page 14, paragraphs 112,113 page 15, paragraph 119-128	3,25, 46-66
X	US 2003/126183 A1 (WU JIANMIN [US] ET AL) 3 July 2003 (2003-07-03) page 5, paragraphs 42,43 page 6, paragraph 54-62 ----- -/--	1,23

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
- *E* earlier document 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

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- *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

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 247 057 B1 (BARRERA III JOSEPH S [US]) 12 June 2001 (2001-06-12) abstract column 3, lines 15-32 column 6, lines 19-67 column 9, lines 27-34 -----	46-66
Y	US 2005/083973 A1 (KRISHNAN MURALI R [US]) 21 April 2005 (2005-04-21) abstract page 2, paragraph 14 page 9, paragraph 90 -----	46-66
A	US 2007/008974 A1 (DISPENSA JEAN-CLAUDE [FR] ET AL) 11 January 2007 (2007-01-11) abstract page 1, paragraphs 7,12 -----	46

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/056518

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 additional sheet

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 an 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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-45

Method and appliance establishing a second virtual server in response to a bandwidth used determination

2. claims: 46-66

Method where a first virtual server directs requests to a second virtual server based on requests corresponding to an object type

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2008/056518

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2001052016	A1	13-12-2001	NONE
US 2003126183	A1	03-07-2003	NONE
US 6247057	B1	12-06-2001	NONE
US 2005083973	A1	21-04-2005	US 2005086338 A1 21-04-2005 US 2005086339 A1 21-04-2005 US 2005108422 A1 19-05-2005 US 2005111489 A1 26-05-2005 US 2005243862 A1 03-11-2005 US 6961341 B1 01-11-2005
US 2007008974	A1	11-01-2007	NONE