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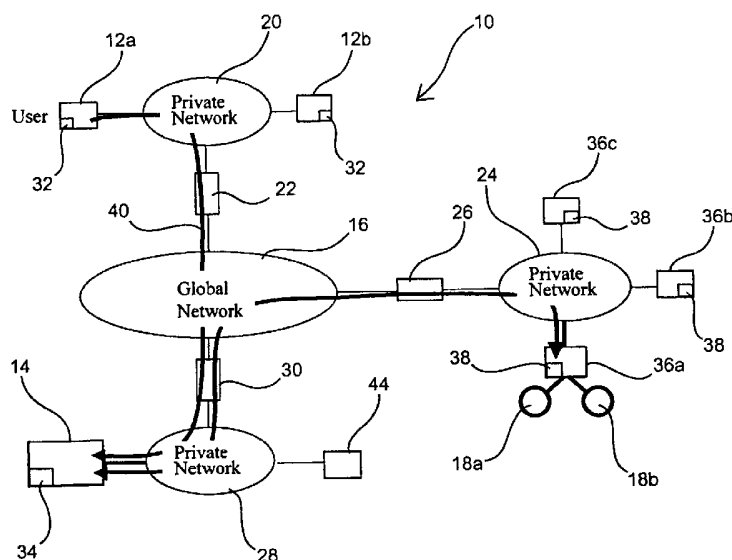
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- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: ACCESS AND CONTROL SYSTEM FOR NETWORK-ENABLED DEVICES



(57) Abstract: Systems and methods for remote access of network-enabled devices that provide seamless, firewall-compliant connectivity between multiple users and multiple devices and that allow point and multipoint control of multiple devices. In general terms, the system includes at least one connection server, and at least two computers (12a, 12b) operatively coupled to the connection server (14) via a public or global network (16). In an example, at least one client computer (12a, 12b) is operatively connected to at least one network-enabled device (18a, 18b) through a connection server (14) via the public or global network (16). The connection server (14) is configured to route control instructions from the client (12a, 12b) to the network-enabled device (18a, 18b), and route data from the network-enabled device (18a, 18b) to the client (12a, 12b).

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/35271

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 15/16
US CL : 709/225, 229

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)
U.S. : 709/225, 226, 227, 229; 713/201

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 practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 6,104,716 A (CRICHTON et al.) 15 August 2000 (15.08.2000), columns 1-4	1-6, 8-, 11-20, 22, 24, 28-34, 37, 43, 45, 49- 59, 62-72, 76-97, 99- 113, 125-127 ----- 7, 9-10, 21, 23, 25-27, 35-36, 38-42, 44, 46- 48, 60-61, 73-75, 98
Y	US 6,275,942 B1 (BERNHARD et al.) 14 August 2001 (14.08.2001), column 4-5	7, 9-10, 21, 35-36, 38- 42
Y	US 6,182,139 B1 (BRENDL) 30 January 2001 (30.01.2001), columns 9, 12-13, 16	23, 25-27, 44, 46-48, 60-61, 73-75, 98
A, P	US 6,553,422 B1 (NELSON) 22 April 2003 (22.04.2003), abstract, columns 6-7	1-113, 125-127

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"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	

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/35271

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

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

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim 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. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation 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 fee, this Authority did not invite payment of any additional fee.
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.: 1-113 and 125-127

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

PCT/US03/35271

BOX II. 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, claim(s) 1-113, 125-127, drawn to a method and system for establishing communications between a computer behind a firewall and a device control computer behind a second firewall.

Group II, claim(s) 114-115, drawn to a method and a system for determining whether a server has adequate power for connections.

Group III, claim(s) 116-124, drawn to a method and a system for periodically monitoring buffers to determine whether new data has been received.

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: Invention I has separate utility as a system for secure for establishing secure communications between computer behind firewalls without the features of invention II and III;

Invention II has separate utility as a system for determining whether a server has adequate power for connections without the features of inventions I and III; and

Invention III has separate utility as a system for periodically monitoring buffers to determine whether new data has been received without the features of inventions I and II.

Continuation of B. FIELDS SEARCHED Item 3:

BRS, DERWENT WPI

search terms: first firewall, second firewall, remote control