

**Ex. 1002**

**466 Prosecution (File) History (“File  
History”)**

JC 325 U.S. PTO  
09/21/528  
12/14/98

709	Class
229	Subclass
	ISSUE CL

PATENT NUMBER  
**6510466**  
6510466

**U.S. UTILITY PATENT APPLICATION**

O.I.P.E. *cc* PATENT DATE **JAN 21 2003**  
 SCANNED *cc* Q.A. *NA*

SECTOR	CLASS <i>35</i>	SUBCLASS <i>229</i>	ART UNIT <i>2162</i>	EXAMINER <i>David Wiley</i>
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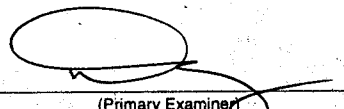
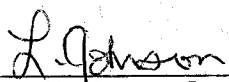
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**PREPARED AND APPROVED FOR ISSUE**

**ISSUING CLASSIFICATION**

ORIGINAL		CROSS REFERENCE(S)			
CLASS	SUBCLASS	CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)		
<i>709</i>	<i>229</i>	<i>709</i>	<i>223</i>		
INTERNATIONAL CLASSIFICATION					
<i>G06F</i>	<i>13/00</i>				

Continued on Issue Slip Inside File Jacket

<input type="checkbox"/> <b>TERMINAL DISCLAIMER</b>	<b>DRAWINGS</b>			<b>CLAIMS ALLOWED</b>	
	Sheets Drwg. <i>9</i>	Figs. Drwg. <i>12</i>	Print Fig. <i>2</i>	Total Claims <i>42</i>	Print Claim for O.G. <i>1</i>
<input type="checkbox"/> a) The term of this patent subsequent to _____ (date) has been disclaimed.	_____ (Assistant Examiner) _____ (Date)			<b>NOTICE OF ALLOWANCE MAILED</b>  <i>8-13-02</i>	
<input type="checkbox"/> b) The term of this patent shall not extend beyond the expiration date of U.S. Patent. No. _____	<b>DAVID WILEY</b> <b>PRIMARY EXAMINER</b>  (Primary Examiner) <i>8/02</i> (Date)			<b>ISSUE FEE</b> <i>1.00m</i> Amount Due <b>\$ 1280.00</b> Date Paid <i>11/7/02</i>	
<input type="checkbox"/> c) The terminal _____ months of this patent have been disclaimed.	 (Legal Instruments Examiner) <i>8-13-02</i> (Date)			<b>ISSUE BATCH NUMBER</b>	

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Form PTO-436A (Rev. 6/98)

Issue Fee in File

Formal Drawings (    sheets ) set

(LABEL AREA)

(FACE)

*JLG*

**PATENT APPLICATION**



09211528

Jc525 U.S. PTO  
09/211528  
12/14/98

INITIALS ECW

**CONTENTS**

	Date received (Incl. C. of M.) or Date Mailed	Date received (Incl. C. of M.) or Date Mailed
1 ✓ Application <u>9 pnts.</u> papers.		42.
2. <u>Office Re: No Dec.</u>	<u>1/19/99</u>	43.
3. <u>Dec &amp; Fee</u>	<u>2/20/99</u>	44.
4. <u>IDS Statement</u>	<u>3-11-99</u>	45.
3/26 <u>Re: 3 months</u>	<u>3/28/07</u>	46.
6. <u>IDS</u>	<u>6-4-01</u>	47.
7. <u>mdt A</u>	<u>6-4-01</u>	48.
8-10 <u>Rejection 3 months</u>	<u>8/13/07</u>	49.
9. <u>Req. for reconsideration</u>	<u>1-7-02</u> <sup>10-22</sup> <sup>3-07</sup>	50.
10. <u>Final Rejection 3 months</u>	<u>2-22-02</u>	51.
11. <u>IDS</u>	<u>3-25-02</u>	52.
12. <u>Req. for reconsideration</u>	<u>3-25-02</u>	53.
13. <u>Advisory Action</u>	<u>4-4-02</u>	54.
14. <u>notice of appeal</u>	<u>4-18-02</u>	55.
15. <u>APPEAL Brief</u>	<u>05-16-02</u>	56.
16. <u>notice of allow.</u>	<u>8-13-02</u>	57.
17. <u>Drawings (9 sheets) set 1</u>	<u>11-7-02</u>	58.
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ISSUE SLIP STAPLE AREA (for additional cross references)

POSITION	INITIALS	ID NO.	DATE
FEE DETERMINATION	<i>[Handwritten initials]</i>		12/21/97
O.I.P.E. CLASSIFIER	<i>[Handwritten initials]</i>	11	12/29/97
FORMALITY REVIEW	<i>[Handwritten initials]</i>	108971	1/16/98
		108971	3/10/97

INDEX OF CLAIMS

- ✓ ..... Rejected
- = ..... Allowed
- (Through numeral)... Canceled
- ..... Restricted
- N ..... Non-elected
- I ..... Interference
- A ..... Appeal
- O ..... Objected

Claim	Final	Original	Date
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If more than 150 claims or 10 actions staple additional sheet here

## SEARCHED

Class	Sub.	Date	Exmr.
709	223	2/11/01	F.B
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710	129		
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709	229	8/02	aw
	223		

## SEARCH NOTES (INCLUDING SEARCH STRATEGY)

	Date	Exmr.
WEST SEARCH	1/20/01	F.B
"	1/15/01	
"	3/21/01	
WEST SEARCH	3/23/01	F.B
WEST SEARCH	7/17/01	F.B
NPL SEARCH	7/17/01	F.B
WEST SEARCH	7/31/01	F.B
Updates	8/02	aw

## INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.
709	229	8/02	aw
	223		

PATENT APPLICATION SERIAL NO. \_\_\_\_\_

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE  
FEE RECORD SHEET

12/23/1998 MPEOPLES 00000011 090461 09211528

01 FC:101	760.00 CH
02 FC:103	54.00 CH
03 FC:102	234.00 CH

PTO-1556  
(5/87)

\*U.S. GPO: 1998-433-214/80404

SERIAL NUMBER 0911,528	FILING DATE 12/14/98	CLASS 395	GROUP ART UNIT 2762	ATTORNEY DOCKET NO. 5577-130
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APPLICANT

DAVID E. COX, RALEIGH, NC; KENT F. HAYES JR., CHAPEL HILL, NC; DAVID B. LINEJIST, RALEIGH, NC; JOHN R. MCGARVEY, APEX, NC; ABDI SALAHSHOUR, RALEIGH, NC.

\*\*CONTINUING DOMESTIC DATA\*\*\*\*\*  
VERIFIED

N.F.B.

\*\*371 (NAT'L STAGE) DATA\*\*\*\*\*  
VERIFIED

N.F.B.

\*\*FOREIGN APPLICATIONS\*\*\*\*\*  
VERIFIED

N.F.B.

IF REQUIRED, FOREIGN FILING LICENSE GRANTED 02/16/99

Foreign Priority claimed 35 USC 119 (a-d) conditions met	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<input type="checkbox"/> Met before Allowance <input checked="" type="checkbox"/> Met after Allowance	STATE OF COUNTRY NC	SHEETS DRAWING 9	TOTAL CLAIMS 23	INDEPENDENT CLAIMS 6
Verified and Acknowledged	<u>N.F.B.</u> Examiner's Initials	Initials				

SEE CUSTOMER NUMBER: 020792

METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON A NETWORK

FILING FEE RECEIVED \$1,178	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT NO. _____ for the following:	<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit
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JCS86 U.S. PTO  
12/14/98

A  
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ATTY DOCKET NO.: 5577-130  
DATE: December 14, 1998

JCS25 U.S. PTO  
09/21/98  
12/14/98

**UTILITY PATENT APPLICATION TRANSMITTAL LETTER  
AND FEE TRANSMITTAL FORM (37 CFR 1.53(b))**

BOX PATENT APPLICATION  
Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

Transmitted herewith for filing under 37 CFR 1.53(b) is:

- a patent application
- a Continuation  a Divisional  a Continuation-in-Part (CIP)  
of prior application no.: ; filed
- A Small Entity Statement(s) was filed in the prior application; Status still proper and desired.

Inventor(s) or Application Identifier: **David E. Cox; Kent F. Hayes, Jr.; David B. Lindquist  
John R. McGarvey; and Abdi Salahshour**

Entitled: **METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR  
CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS  
ON A NETWORK**

Enclosed are:

1.  Application Transmittal Letter and Fee Transmittal Form (*A duplicate is enclosed for fee processing*)
2.  41 pages of Specification (including 23 claims)
3.  Nine (9) sheets of Formal Drawings (35 USC 113)
4.  Oath or Declaration
  - a.  newly executed (*original or copy*)
  - b.  copy from prior application (37 CFR 1.63(d) (*for continuation/divisional*)) [Note Box 5 Below]
  - c.  **DELETION OF INVENTOR(S)** (*Signed statement deleting inventor(s) named in the prior application*)
5.  Incorporation By Reference (*useable if box 4b is checked*)  
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6.  Microfiche Computer Program (*Appendix*)
7.  Assignment papers (*cover sheet(s) and document(s)*)
8.  Small Entity Statement(s)
9.  Information Disclosure Statement, PTO-1449, and 1 references cited
10.  Preliminary Amendment (*Please enter all claim amendments prior to calculating the filing fee.*)
11.  English Translation Document
12.  Certified Copy of Application No. ; Filed

09237228-424498



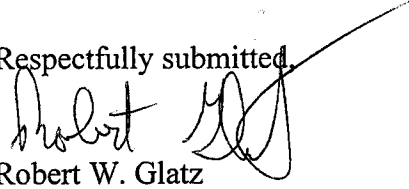
13.  Sequence Listing/ Sequence Listing Diskette  
 a.  computer readable copy  
 b.  paper copy  
 c.  statement in support  
 14.  An Associate Power of Attorney  
 15.  Return Receipt Postcard (MPEP 503) (Should be specifically itemized)  
 16.  Other:

The fee has been calculated as shown below:

	Column 1 No. Filed	Column 2 No. Extra	Small Entity Rate Fee	Large Entity Rate Fee
BASIC FEE			\$380.00	\$760.00
TOTAL CLAIMS	23- 20 =	3	x 9 = \$	x 18 = \$54.00
INDEP CLAIMS	6 - 3 =	3	x 39 = \$	x 78 = \$234.00
<input type="checkbox"/> MULTIPLE Dependent Claims Presented			+ 130 = \$	+ 260 = \$
<i>If the difference in Col. 1 is less than zero, Enter "0" in Col. 2</i>			Total \$	Total \$1048.00

- A check in the amount of \$ \_\_\_\_\_ to cover the filing fee is enclosed.
- Please charge my Deposit Account No. 09-0461 in the amount of \$1,048.00 to cover the filing fee.
- The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 09-0461.
- Any additional filing fees required under 37 CFR 1.16.
- Any patent application processing fees under 37 CFR 1.17.

Respectfully submitted,

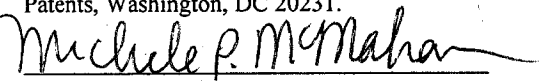
  
 Robert W. Glatz  
 Registration No. 36,811

Correspondence Address:  
 USPTO Customer Number: 20792  
 Myers Bigel Sibley & Sajovec, P.A.  
 Post Office Box 37428  
 Raleigh, NC 27627  
 Tel (919) 854-1400  
 Fax (919) 854-1401

**CERTIFICATE OF EXPRESS MAILING**

Express Mail Label No. EL085941687US  
 Date of Deposit: December 14, 1998

I hereby certify that this correspondence 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 Box Patent Application, Assistant Commissioner For Patents, Washington, DC 20231.

  
 Michele P. McMahan  
 Date of Signature: December 14, 1998

854727-3357260

ATTORNEY DOCKET NO. 5577-130

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Cox, et al.  
Filed: Concurrently Herewith  
For: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS  
FOR CENTRALIZED MANAGEMENT OF APPLICATION  
PROGRAMS ON A NETWORK

Date: December 14, 1998

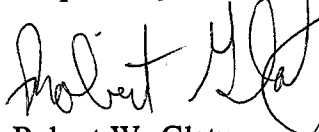
Box Patent Application  
Assistant Commissioner for Patents  
Washington, DC 20231

APPLICATION FILED UNDER 37 CFR 1.41(c)

Sir:

The above identified application is being filed on behalf of the inventor(s), **David E. Cox**, resident of Raleigh, North Carolina; **Kent F. Hayes, Jr.**, resident of Chapel Hill, North Carolina; **David B. Lindquist**, resident of Raleigh, North Carolina; **John R. McGarvey**, resident of Apex, North Carolina; and **Abdi Salahshour**, resident of Raleigh, North Carolina under the provisions of 37 CFR 1.41(c). A Declaration and Power of Attorney from the inventors will follow, 37 CFR 1.63.

Respectfully submitted,



Robert W. Glatz  
Registration No. 36,811

Myers Bigel Sibley & Sajovec  
P.O. Box 37428  
Raleigh, NC 27627  
Tel (919) 854-1400  
Fax (919) 854-1401

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"Express Mail" mailing label number EL085941687US  
Date of Deposit December 14, 1998

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Michele P. McMahan  
Date of Signature: December 14, 1998

OFFICE OF THE ASSISTANT ATTORNEY GENERAL

Attorney Docket: 5577-130

**METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR  
CENTRALIZED MANAGEMENT OF  
APPLICATION PROGRAMS ON A NETWORK**

Cross Reference to Related Applications

5 This application is related to the following application<sup>09/21, 529</sup> filed concurrently  
herewith: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS  
FOR MANAGEMENT OF CONFIGURABLE APPLICATION PROGRAMS ON  
A NETWORK, Attorney Docket Number 5577-106. This application is also  
related to United States Patent Application No. 09/072,597 filed May 5, 1998 and  
entitled: Client-Server System for Maintaining a user Desktop Consistent with  
Server Application User Access Permissions which is incorporated herein by  
reference in its entirety.

10 Field of the Invention

The present invention relates to network management in general and in  
particular to application program management on a computer network.

15 Background of the Invention

Traditional mainframe computer configurations provided for user interface  
to the computer through computer terminals which were directly connected by  
wires to ports of the mainframe computer. As computing technology has evolved,  
processing power has typically evolved from a central processing center with a

number of relatively low-processing power terminals to a distributed environment of networked processors. Examples of this shift in processing include local or wide area computer networks which interconnect individual work stations where each workstation has substantial independent processing capabilities. This shift  
5 may be further seen in the popularity of the Internet which interconnects many processors and networks of processors through devices such as, for example, routers. This type of network environment is often referred to as a client-server environment with client stations coupled to and supported by a server station.

In the modern distributed processing computer environment, control over  
10 software, such as application programs, is more difficult than where a mainframe operated by an administrator is used, particularly for large organizations with numerous client stations and servers distributed widely geographically and utilized by a large number of users. Furthermore, individual users may move from location to location and need to access the network from different client stations at different  
15 times. The networked environment increases the challenges for a network administrator in maintaining proper licenses for existing software and deploying new or updated applications programs across the network.

One approach to reducing software distribution and control problems is to use an application server in which the application programs are installed and  
20 maintained on a centralized server which supports a plurality of client stations (sometimes referred to as a client/server application as contrasted to a desktop application). In addition, the Systems Management Server (SMS) program from Microsoft Corporation provides an ability to transmit an application program from a server to a number of clients. The SMS system typically allows installation of  
25 programs and associated icons at client stations for SMS-enabled applications. A customized install generally must be created by a system administrator for each different version to be installed. Furthermore, once installed at a client, a user must typically use that specific client station. The application generally cannot be automatically deleted from the client station's desktop or automatically upgraded  
30 the next time the user starts the application. Similarly, the Tivoli Management Environment (TME) 10™ system from Tivoli Systems, Inc. provides a software

distribution feature which may be used to transmit a file package to client and server stations on a network from a central Tivoli™ server.

5 A further complication in network systems is that, typically, these systems include combinations of network applications and native applications as well as combinations of different connection types and hardware devices. As used herein "native applications" refers to applications which are installed locally on a workstation such that characteristics associated with the native application are stored on the workstation. The combinations of network connections, differing hardware, native applications and network applications makes portability of preferences or operating environment characteristics which provide consistency from workstation to workstation difficult. Furthermore, differences in hardware or connections may create inefficiencies as users move from workstation to workstation. For example, a user may, in a first session, access the network utilizing a high speed connection and a workstation with a high resolution color monitor to execute an application and then, in a later session, access the network to execute the same application from a mobile computer with a monochrome display and a low speed modem connection to the network. Thus, session content, such as color display data or preferences associated with the application, which may have been appropriate for the first session may be inappropriate or inefficient in a later session.

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30 Efforts to address mobility of users in a network have included efforts to provide preference mobility such as, for example, Novell's Z.E.N.works™, Microsoft's "Zero Administration" initiative for Windows® and International Business Machines Corporation's (IBM's) Workspace On Demand™. However, these solutions each typically require pre-installation of software at the workstation to support their services. For example, Novell's Z.E.N. and IBM's Workspace On Demand utilize a designer-supplied support layer in the operating system to enable their services. In addition to modifying the workstations operating system at startup to setup tasks to customize the user's environment, the Microsoft Zero Administration solution is typically limited to a homogeneous (Windows® only)



Such solutions may, at most, reduce network administration only after initial installation on each workstation. In addition, control over access by users is difficult to accomplish in a mobile environment.

5 Furthermore, these various approaches have, at most, only limited capabilities to provide a uniform framework for deployment of new or updated application programs from different software designers. To the extent software distribution capabilities from a central location are provided, such as with the TME 10™ system, they typically require various steps in the installation process to occur at different locations rather than allowing the entire process to be controlled from a single point for an entire managed network environment.

#### Summary of the Invention

15 Accordingly, it is an object of the present invention to provide methods, systems and computer program products for centralized management of application programs on a computer network.

It is a further object of the present invention to provide such methods, systems and computer program products that are user based across various hardware interface devices.

20 It is another object of the present invention to provide such methods, systems and computer program products that provide for software deployment from a central administrative server location across a plurality of client stations.

It is a further object of the present invention to provide such methods, systems and computer program products that can accommodate various types of hardware operating under different operating systems across client stations.

25 These and other objects are provided, according to the present invention, by providing methods, systems and computer program products for management of application programs on a network including a server supporting client stations. The server provides applications on-demand to a user logging in to a client supported by the server. Mobility is provided to the user and hardware portability is provided by establishing a user desktop interface responsive to a login request 30 which presents to the user a desktop screen through a web browser interface. The

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desktop accesses and downloads selected application programs from the server responsive to a request from the user, such as the selection of an icon associated with the application program which is displayed on the user desktop screen at the client. The application program is then provided from the server and executed at the client. The application program may further be customized to conform to the user's preferences and may also provide for license use management by determining license availability before initiating execution of the application program. Accordingly, applications are provided on-demand to users independent of the device used to access the server.

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Centralized control of software distribution is also provided for a network management server managed computer network such as a Tivoli™ environment. Application programs are distributed as file packages (packets) to on-demand servers. A profile manager import call is included in the distributed file packet along with an import text file containing the data required to properly install and register the application program on the on-demand server and make it available to authorized users. Settable on-demand server identifier fields are included to allow a plurality of on-demand servers to receive a common file packet and properly install and register the program for use locally.

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In one embodiment of the present invention, a method for management of application programs on a network including a server and a client is provided. A plurality of application programs are installed at the server. The plurality of application programs may be installed on a network drive accessible to the server. A login request initiating a session is received from a user through an application executing at the client. A user desktop interface is then established at the client associated with the user responsive to the login request from the user. The desktop interface includes a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized. The server receives a selection of one of the plurality of application programs from the user desktop interface and provides an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.

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5 In a further embodiment, application management information for the plurality of applications is maintained at the server and a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized is included responsive to the application management information. In a further embodiment of the present invention, application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized are distributed to the client and selections of programs are received from one of the application launcher programs which is associated with the selected one of the plurality of application programs. 10 The application launcher programs may be provided as JAVA™ applets and the user desktop interface may be provided as a web browser. The application management information may include configurable user preference information for the plurality of application programs and a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs may be provided to the client for use in executing the instance of the application program. The set of the configurable user preference information may include both user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator. The user preference information may be updated responsive to updates from the user and the administrator respectively. 20

25 In another embodiment of the present invention, the user desktop interface is configured at the server responsive to an identifier of the user associated with the login request so as to provide a configured user desktop interface. The configured user desktop interface is then provided to the client for display. The user desktop may be configured not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized.

30 In another aspect of the present invention, a license availability is determined for the selected one of the plurality of application programs for the user. License availability for the user desktop application itself may also be determined. An unavailability indication is provided to the client responsive to the

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selection if the license availability indicates that a license is not available for the user. The license availability may be determined by the one of the application launcher programs associated with the selected one of the plurality of application programs which may obtain the license availability from a license management server. The license management server may run on the same machine as the on demand application server.

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In a further aspect of the present invention, event logging information is received at the server from the instance of the selected one of the plurality of application programs. The server provides the received event logging information to a network management server associated with the server. In addition, event logging information may be provided to the user desktop application.

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In yet another aspect of the present invention, methods are provided for distribution of application programs to a target station on a network from a centralized network management server coupled to the network. The application program to be distributed is provided to the systems (network) management server and a source directory and a target directory for distribution of the application program are specified. A file packet associated with the application program is prepared including a segment configured to initiate registration operations for the application program at the target station. The file packet is then distributed to the target station or stations. In one embodiment, the network management server is a Tivoli™ server. The segment configured to initiate registration operations may include an import data file and a call to an import program executing on the target station.

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In one embodiment of the software distribution aspect of the present invention, the application program is provided as a JAVA™ applet and is registered based on a Universal Resource Locator (URL) address accessible to a browser application. The segment configured to initiate registration operations includes a variable field into which the target station inserts its identification during registration operations. The file packet may be distributed to a plurality of target stations each having an identification which may be inserted into the variable field at the target station.

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While the invention has been described above primarily with respect to the method aspects of the invention, both systems and computer program products are also provided.

Accordingly, the present invention provides for management of application programs in a network environment from a central location while allowing for user preferences to be maintained independent of hardware location of the user along with centralized distribution of new and/or updated application programs. This provides for reduced costs and increased uniformity in deploying software in a network environment. It further provides an essentially hardware transparent ability for an individual user to interface to an on-demand server supported client station while maintaining the user's personal preferences for each application program.

#### Brief Description of the Drawings

FIG. 1 is a schematic diagram of a computer network with application program management according to an embodiment of the present invention;

FIG. 2 is a schematic diagram of an on-demand server system according to an embodiment of the present invention;

FIG. 3 is a schematic diagram of the on-demand server system of FIG. 2 according to an embodiment of the present invention;

FIG. 4 is a flowchart illustrating operations for application program distribution and execution according to an embodiment of the present invention;

FIG. 5 is a flowchart illustrating configuration operations for application program distribution and execution according to an embodiment of the present invention;

FIG. 6 is a flowchart illustrating user login operations for application program distribution and execution according to an embodiment of the present invention;

FIG. 7 is a flowchart illustrating application access operations for application program distribution and execution according to an embodiment of the present invention;

**FIG. 8** is a flowchart illustrating operations for application program distribution and execution in a network management server environment such as a Tivoli™ environment according to an embodiment of the present invention;

**FIGS. 9A, 9B and 9C** are flowcharts further illustrating operations for application program distribution and execution according to an embodiment of the present invention; and

**FIG. 10** is an illustration of an interface screen used in centralized software deployment according to an embodiment of the present invention.

### Detailed Description of Preferred Embodiments

The present invention now will be described more fully hereinafter with reference to the accompanying drawings, in which preferred embodiments of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. As will be appreciated by one of skill in the art, the present invention may be embodied as methods, systems or computer program products. Accordingly, the present invention may take the form of a hardware embodiment, a software embodiment or an embodiment combining software and hardware aspects.

**FIG. 1** illustrates an embodiment of a computer network including configurable application program management capabilities according to an embodiment of the present invention. Computer network system **10** includes a network management server such as a Tivoli™ server **20** and on-demand servers **22, 22'**. As used herein, "on-demand" refers to a server delivering applications as needed responsive to user requests as requests are received. System **10** further includes client stations **24, 24', 26, 26'**. As illustrated, on-demand servers **22, 22'** are connected to Tivoli™ server **20** over a first network segment **10'**. Client stations **24, 24'** are served by on-demand server **22** and communicate over network **10''**. Similarly, clients **26, 26'** are served by server **22'** and communicate over network **10'''**. As schematically illustrated in **FIG. 1**, client stations **24, 24', 26,**

SECRET 2000

26' may be a variety of different hardware operating a variety of different operating systems.

System 10, as illustrated in FIG. 1, is a centrally managed computer network with Tivoli™ server 20 acting as the central administration station executing network management software such as TME 10™ from Tivoli Systems, Inc. Servers 22, 22' act as on-demand servers for their respective associated client stations 24, 24', 26, 26' and provide for client/server application support. It is further to be understood that networks 10', 10'', 10''' may be separate physical networks, separate partitions of a single physical network or may be a single network. Furthermore, Tivoli™ server 20 may be configured to allow for direct communication between server 20 and clients 24, 24', 26, 26'. In addition, a single machine may be configured to include a client, an on-demand server and/or a network (system) management server.

As will be described further herein with reference to the flowcharts, Tivoli™ server 20 provides a means for software distribution and management in computer network system 10. Furthermore, on-demand servers 22, 22' each provide an application management system for managing configurable application programs using both user and administrative preferences for various application programs. More particularly, as described in the embodiments herein, on-demand servers 22, 22' are configured to operate within the eNetwork™ environment available from International Business Machines Corporation (IBM). As will be further discussed herein, the present invention provides for an integration of an on-demand server as described herein in the IBM eNetwork™ environment with the TME 10™ system to provide for centralized control of software applications including the capability for supporting separate user and administration preference parameters. However, while the present invention may be implemented in the Tivoli™ environment, it is also suitable for use with other network management environments. Configurable preference management (and license use management) operations suitable for use with the present invention are described in United States Patent Application No. 09/211,529 (attorney docket number 5577-106) entitled Methods, Systems and Computer Program Products for Management *now U.S. Patent 6,324,578*

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12

of Configurable Application Programs on a Network, which is incorporated herein by reference in its entirety.

**FIG. 2** illustrates an embodiment of an on-demand server according to the present invention. As shown in **FIG. 2**, the server system **22** of the present invention includes client management server **204** and access to a storage device for maintaining an application management database **208**. While illustrated in **FIG. 2** as an integrated part of system **22**, database **208** may be a separate device so long as it is available to server system **22**. In the illustrated embodiment which will be described herein, client management server **204** includes web server **206** providing an interface to an administrator user such as that illustrated by administrator console **200** and to users interfacing to the system through client stations such as the illustrated user console **202**. Database **208** acts as a central repository of application management information, such as user, software, device, preference and access control information, responsive to client management server **204**.

Client management server capabilities may be further broken down within client management server **204**. For example, client management server **204**, may be implemented in a JAVA™ environment with various applets or servlets where the term servlets generally refers to server-side JAVA™ programs each of which provides a particular function. For example, an application server servlet may control user application access through client management server **204** by receiving requests from web server **206**. Various additional servlets could support controlling access to database **208**, providing centralized preference management, centralized license use management and error logging and tracing.

User console **202** provides an end user client desktop. As will be described further herein, the desktop provides a task bar (to switch between active applications) and a launch panel with icons for the applications that the user is authorized to access. Pursuant to the control of client management server **204**, the user desktop automatically provides icons for those applications that the user is authorized to use including automatically adding icons for new applications that the user is authorized to access when the new applications become available without any action required on the part of the end user.







Patent 6,257,260

5 further customized based on device configuration information provided by a client  
access services function. In a JAVA™ environment, the client access services  
function is preferably provided by a browser application presenting a user desktop  
window. The applications (and associated application launchers) are also provided  
as applets. It is further to be understood that, in the JAVA™ environment,  
currently available web browser applications are known to those of skill in the art  
which provide a user interface and allow hardware independent communication  
such as that currently specified by Internet protocols. Thus, the application  
launcher programs may be applets which display the icon which are associated  
10 with a web browser Universal Resource Locator (URL) which points to the  
location of the applet to be executed. Upon selection of the icon displayed by the  
application launcher, the selected application is "launched" by requesting the URL  
of the application from the on-demand server. Such requests may be made  
utilizing conventional Hyper-Text Transfer Protocol (HTTP) communications or  
15 other suitable protocols.

For both network computers or managed personal computers, once the  
machine environment is initialized, the user may log on to the network client  
management environment provided by server system 22 for authentication. User  
authentication allows the selection of the appropriate context (individual, group,  
20 default) for the desktop to be provided to console 202. For example, icon displays  
may be selected for inclusion in the desktop based on whether a particular user is  
an authorized user for the associated applications. In addition, any specific user  
preferences for the desktop interface (to the network management environment of  
the present invention) may be applied.

25 Referring now to FIG. 3, the network client management environment  
provided by server system 22 will now be further described. Client management  
server 204 provides for the centralized management of network client machine  
preferences, application access and application preferences. Software services,  
hosted by JAVA™ servlets operating on web servers, store and retrieve the  
30 management information requested by clients or administrators through the  
framework architecture as illustrated in FIG. 3. The framework architecture of the

16

illustrated embodiment of **FIG. 3** leverages JAVA™ servlets on the client management server **204** and JAVA™ applets and JAVA™ beans on the client interface in the administrator console **200** to maximize the ease with which new elements may be managed. Management information is maintained in database **208** through a network registry which may be based, for example, on the Lotus registry (single-server) or Lightweight Directory Access Protocol (LDAP) for a multiple-server environment, such as the IBM eNetwork™ Directory Server, to support the distributed capabilities provided by server system **22**.

As shown in **FIG. 3**, communications with client management server **204** are provided through applications including web server **206** and, either directly or indirectly, with servlets **208**. As illustrated in **FIG. 3**, there are 5 specific servlets performing different network management functions. The configuration management component **210** provides configuration tasks which are performed for users, machines and applications. For user and group support, configuration management component **210** preferably provides the ability to create, modify, and delete users and groups of users as well as the ability to configure services and preferences for users in groups. Machine support preferably includes the ability to configure preferences for client machines, groups of machines (optionally defined by profiles) and machine platforms (for example, network stations or network computers). Configuration management component **210** further provides login support for user authentication and mapping to a user profile and software support to configure the software (applets and applications) users and groups for access to and the user preferences for those software applications.

The configuration management component supports the configuration framework on the administration console **200** as well. This console provides a common, centralized user interface on which configuration management tasks for services for the particular server system **22** occur. When access to configuration management is provided through a JAVA™-enabled web browser, access to multiple servers is possible from a single administration station **200**. The configuration framework **224** preferably minimizes the costs of administering services by maximizing the simplicity and consistency of the specific configuration

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tasks. The primary user of this component is typically the system administrator or others with administrator authority.

User authorization **212** provides control over which applications may be accessed by a particular user or group. User authorization component **212** preferably provides security by authenticating users securely rather than transmitting plain text passwords. Furthermore, client software may be provided with the ability to verify the integrity of applets delivered from the server to insure that they are free of viruses and have not been modified during delivery. Access to various application applets may be controlled, consistent with the permissions granted by administrators, using the configuration framework interface **224** at the administration console **200**. Access to the server system **22** through configuration framework **224** may be limited to administrator authority users.

Hardware inventory component **214** provides for modification of applications as necessary to adapt to the type of hardware and/or operating system from which a user is requesting execution of an instance of an application (*i.e.* device specific characteristics). System management component **218** provides similar capabilities at a network management level. System management component **218** may further be provided to allow Tivoli™ ready system administration by acting as an agent to extend Tivoli™ management and control to clients supported by server system **22**. As will be described further herein, integration may provide for software distribution, event logging support, remote operation and distributed monitoring through a network management server **20**. Examples of systems utilizing operating environment information to establish preferences or modify content are described in United States Patent Application No. 09/211,529 (attorney docket number 5577-104) entitled Methods, Systems and Computer Program Products for Management of Preferences in a Heterogeneous Computing Environment, and United States Patent Application No. 09/211,527 (attorney docket number 5577-108) entitled Methods, Systems and Computer Program Products for Policy Based Network Control of Characteristics of User Sessions, which are incorporated herein by reference in their entirety.

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Finally, license management component 216 may be utilized to monitor the usage of applications executing as JAVA™ applets to insure that the usage is within specified guidelines. The license management component 216 may be provided as a JAVA™ bean which provides status information to a license management JAVA™ servlet. The servlet then sends the appropriate management information to a license management server which may be integrated within server system 22 or maintained in a separate device. The license management component 216 thereby provides a convenient tool for tracking the usage of specified applications.

As also shown in FIG. 3, administrator console 200 includes web browser 222 and configuration framework 224. Web browser 222 provides a base for administrator console 200. Configuration framework 224 is preferably provided as a JAVA™ applet. The console 200 thereby provides a common, centralized user interface on which configuration management tasks for services for the particular server system 22 occur. As described previously, by providing configuration framework 224 interfacing through JAVA™-enabled web browser 222, access to multiple server systems 22 is possible from a single administration console station 200. Client interface 202 is similarly provided as a desktop interface on the user console regardless of device type. Similarly to administrator console 200, client interface 202 includes a JAVA™-enabled web browser or desktop 226 which provides, for example, an operating environment for network-client applications. A given user may, therefore, move among various machines so long as the console has access to the server system 22 which has the user's information. The available applications on the user desktop 226 are defined by system server 22 as described previously and will be further described with reference to the flowcharts. User console 202 preferably accesses client management server 204 using JAVA™ beans and/or Application Program Interfaces (APIs). Client access component 228 is preferably provided by JAVA™ beans and APIs within the framework of the network client environment provided by server system 22 allowing access to configuration information, license management and event logging.

2007-03-26

Operations of the present invention will now be described with respect to the flowcharts of **FIGS. 4** through **9C**. It will be understood that each block of the flowchart illustrations, and combinations of blocks in the flowchart illustrations, can be implemented by computer program instructions. These program  
5 instructions may be provided to a processor to produce a machine, such that the instructions which execute on the processor create means for implementing the functions specified in the flowchart block or blocks. The computer program instructions may be executed by a processor to cause a series of operational steps to be performed by the processor to produce a computer implemented process such  
10 that the instructions which execute on the processor provide steps for implementing the functions specified in the flowchart block or blocks.

Accordingly, blocks of the flowchart illustrations support combinations of means for performing the specified functions, combinations of steps for performing the specified functions and program instruction means for performing the specified  
15 functions. It will also be understood that each block of the flowchart illustrations, and combinations of blocks in the flowchart illustrations, can be implemented by special purpose hardware-based systems which perform the specified functions or steps, or combinations of special purpose hardware and computer instructions.

Referring now to **FIG. 4**, operations for on-demand server system **22** will now be further described. At block **230**, server system **22** determines whether a  
20 new software application has been received for installation on server system **22**. If so, configuration operations including setting up the users and software to be managed are executed (block **232**). At block **234**, server system **22** determines if a received request is the start of a new user session. Preferably, operations at block  
25 **234** are based on receipt at server system **22** of a communication from a client **202** which includes the user credentials from a login exchange performed locally at the client station.

In one embodiment of the present invention, the operations at block **234** are preceded by a user opening a browser at the client station and entering a designated  
30 URL associated with establishing a user desktop interface. The appropriate URL may be saved by the browser application using various techniques known to those

SECRET-20250605

of skill in the art. An application launcher associated with the user desktop interface is then downloaded to the client station and executed by the browser. The user desktop interface application launcher then obtains the user identification and password, either from a memory location or by prompting the user. Only a portion  
5 of the user desktop interface application launcher code need be initially downloaded sufficient to obtain the user information with additional associated code downloaded subsequently during establishment of the user desktop interface at the client.

If a user identification and password information is contained in the request  
10 at block 234, user login operations are executed including bringing up a user desktop and establishing the user's credentials and application access authorization, based, for example, on stored ID and password information (block 236). Additional session information may be determined from the login operations such as configuration information related to the hardware and operating system in use  
15 for the session. Finally, if it is determined that the request has been received from an already logged in user at block 238 requesting execution of an application (as opposed to initial setup of a user desktop interface) application access management operations are executed to bring up an instance of the managed application for the user (block 240).

Referring now to FIG. 5, configuration operations from block 232 will now  
20 be further described. To implement a new or updated software application, server system 22 accepts definitions of the application that describe the location and description of the application. This information may be provided by an import file containing location information such as path directories and file name definitions.  
25 The server system 22 further accepts definitions of users and groups that will access the system and the specific application (block 252). This information similarly may be provided as an import file or entered by a user with administrator authority. In addition, in the illustrated embodiment of the present invention, server system 22 also accepts license policies describing the licensing  
30 characteristics for the new application (block 254). The server system 22 further accepts control specifications defining which users and groups are authorized to

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access the new or updated application (block 256). License policy and control specifications may be obtained from an administrator at console 200 or obtained as an import file. Finally, server system 22 updates database 208 to maintain the input definitions and specifications for the new or updated application in a format accessible to server system 22 (block 258).

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Log in operations from block 236 of FIG. 4 will now be further described with reference to the embodiment of the flowchart of FIG. 6. The server system 22 receives a request to initiate a user desktop interface from a user console 202 as described above for an embodiment of the operations of block 234 (block 260). In other words, in the JAVA™-based embodiment described above, an HTTP request may be received by server system 22 requesting that a desktop instance be executed for a user at user console 202. Note that the desktop application itself may be structured and provided as a pre-defined application which has the same managed characteristics as any other application provided in the network management environment supported by server system 22.

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On receipt of a request to initiate an instance of a desktop application, the server system 22 first confirms that identification and password information is available (i.e., that the user successfully previously logged on and provided the appropriate information previously or included the information in the request). If the appropriate identification is not available, server system 22 obtains an identification and password from the user for use in establishing the authorization credentials of the user (block 262). Alternatively, in another embodiment, the application launcher code at the client may only communicate a request if a user identification and password have been successfully obtained, thereby not requiring the operations of block 262. At block 264, the server system 22 checks the user's credentials to see if the user is authorized to bring up the user desktop interface application, preferably using the same authorization and checking procedures as used by any other managed application as described in United States Patent Application No. <sup>211529</sup> ~~09/02246~~ (attorney docket number 5577-106).

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If the user is not authorized at block 264, an error message is displayed and processing stops (block 266). If the user is authorized, server system 22 processes

a license request to determine if a license is available for the desktop application (block 268). If no license is available at block 268, an error message is displayed and processing stops (block 266). If a license is available, the server system 22 displays the desktop framework 226 (FIG. 3) suited for the particular user and hardware device being utilized by the user and further determines what other applications the user is authorized to access and puts an icon for the authorized applications on the user's desktop display (block 270). In addition, error and trace log entries associated with the desktop application may be enabled for logging and receipt by the server system 22 (block 270).

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While, as described above, operations were identified as being performed at server system 22, it is to be understood that functions may be divided differently between server and client according to the teachings of the present invention. For example, the user desktop interface application launcher at the client may, responsive to the request to initiate a session, be provided the desktop application program code and the appropriate code to obtain preferences and license availability information. The operations as described for FIG. 6 may then be executed, in part, at the client, and in part at the server where the data base containing preference information and, optionally, license information is preferably maintained. Accordingly, it is to be understood that the preference and license information are preferably obtained by the application launcher which further includes the application program itself for execution at the client. As with the initial split in downloading code, the code for obtaining preference and license information may be separately downloaded before the code for the application program itself.

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As used herein, the term "application program" generally refers to the code associated with the underlying program functions, for example, Lotus Notes or a terminal emulator program. However, it is to be understood that the application program will preferably be included as part of the application launcher which will further include the code associated with managing usage of the application program on a network according to the teachings of the present invention. Further it is to be understood that, as used herein, the term "application launcher program"

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SECRET 2025

5 may refer to the entire program provided by a software vendor or to merely a  
portion thereof distributed to a client to perform particular operations. For example,  
the application launcher program distributed to initially populate the user desktop  
preferably does not include the code associated with the underlying application  
program and obtaining preferences which may only be distributed to the client later  
when execution of the application program is requested. The application launcher  
program distributed to populate the user desktop may only include a URL and an  
associated ICON and, possibly, code to allow obtaining of user identification and  
password information. Memory usage on the client stations may thereby be  
10 limited.

It is to be understood that, while the discussion herein is generally provided  
with reference to a single application program, the present invention is directed to  
management of a plurality of application programs available on a network  
including a server and a client. Accordingly, the plurality of application programs  
15 is installed and accessible at the server system 22. A user desktop interface is then  
established at the client which is associated with the requesting user responsive to a  
login request from the user. The desktop interface includes a plurality of display  
regions, such as icons, associated with a set of the plurality of application programs  
installed at server system 22 for which the user is authorized. The determination of  
20 which of the plurality of applications a user is authorized for may be based upon  
application management information for the plurality of applications maintained at  
server system 22.

Desktop display operations may be coordinated between system server 22  
and client station 202. The user desktop interface is preferably configured at the  
25 server system 22 responsive to an identifier of the user associated with the login  
request so as to provide a configured user desktop interface. It is this configured  
user desktop interface which is directed to a requesting user and presented in a  
form appropriate for display by the client station 202 from which the user is  
accessing the server system 22. Furthermore, as the desktop application itself may  
30 be provided as an application launcher applet like any other application using the  
methods of the present invention, the desktop itself may also be configured to

24

include user preference characteristics unique to the user where it is desired to have user configurable characteristics for the desktop interface.

Preferably, access control to applications is provided by not including display regions associated with any of a plurality of application programs installed at the server system 22 for which the user is not authorized. In other words, a user logging in to system server 22 will be provided a user desktop for display which only includes icons for those applications for which the user is authorized. This same configuration grouping may be provided regardless of the client station 202 on which the user is accessing the system.

Referring now to FIG. 7, application access operations from block 240 of FIG. 4 will now be further described for a particular embodiment of the present invention. The server system 22 receives a request to initiate execution of an instance of a managed application from a user (block 280). This may be provided, for example, by a user clicking on an application icon on the user's desktop 226 (FIG. 3). The server system 22 then checks to determine if the user identification information is available (*i.e.*, if the user has successfully logged on and provided the appropriate identification information) (block 282). If not, server system 22 obtains the user's ID and password and establishes the credentials of the user for use in authorization determination (block 283). It is to be understood that, where the user brought up the desktop application, the system typically will have already requested and obtained the user's credentials.

At block 284, the server system 22 checks the credentials of the user to determine if the user is authorized to access the requested application. If the user is not authorized for the particular application an error message is displayed and an error code is returned to the application (block 286). Optionally, the application program may be configured to allow it to proceed with executing an instance of the application but the application will typically not be authorized to use system level services of the system server 22 (such as error logging, retrieval of user preferences or requesting a license) where the database 208 indicates to the server system 22 that the identified user is not authorized to use the application. In other words, client management server 204 may be configured, based upon the properties

SECRET 84768

provided by a software designer for a particular managed application, to initiate execution of an instance of an application by a non-authorized user while otherwise denying access to the application management capabilities supported by client management server 204.

5           Furthermore, it is to be understood that the application launchers for individual application programs are preferably distributed when the user desktop is initiated (populated) and may only contain code required to obtain user preferences and/or license information and the application program's executable code from the server on-demand (*i.e.*, when execution is requested by a user). This  
10           minimizes the memory required at clients 24, 24', 26, 26'. Alternatively, the application launcher may contain, at the client, all the executable code comprising the application program itself before execution is requested. As the application program supported by server system 22 may be executable via a variety of users concurrently, server system 22 provides an instance of the selected one of the  
15           plurality of application programs to populate the application launcher to client station 202 for execution responsive to a selection of the application program from the user. Alternatively, while it is not a preferred approach, the application program code itself may be included in the application launcher at the time the user desktop interface is populated allowing an instance of the application program to  
20           be executed with less communication traffic between the network and the server associated with the request to initiate an instance of the application program.

          Preferably, the application launcher program, as described above, is distributed for each authorized application program to the client station 202 at the time of establishment of the user desktop interface without including all of the  
25           executable code of each application as part of the application launchers at the time of distribution. The application launcher applet then detects selection by the user of the application program's associated icon from the user desktop interface at client station 202 and requests an instance of the selected one of the plurality of application programs associated with the icon from server system 22. The  
30           application launcher program then populates client station 202 with the instance of the selected application program for execution. Preferably, the appropriate

SECRET 881260

configurable user preference information for the selected application program is also obtained from the server system 22 for use in executing the instance of the application program at the client station 202.

5 The user preference information is provided to client station 202 from server system 22 for use in executing an instance of the application at the client station 202. The configurable user preference information maintained by server system 22 may include both user preferences configurable by the user and those not configurable by the user which are instead configurable by an administrator. The user preferences may further be updated responsive to changes from the user or administrator. Configurable preference management operations suitable for use  
10 with the present invention are disclosed in United States Patent Application No.

09/21, 529 (attorney docket number 5577-106).

*n now U.S. Patent 6,324,578*

If the requesting user is an authorized user for the requested application, the server system 22 accepts a license request from the application (block 288). If no  
15 licenses are available, the system may be configured to provide an error message display and stop processing (block 286). The error message may take the form of an unavailability indication provided to client station 202 if the license availability information obtained from a license management server, which may be system server 22 or other another server on the network, indicates no licenses are available  
20 for the requesting user. If a license is available, an instance of the requested application is executed and error and trace logging operations are enabled to receive error and trace log entries if they are sent from the application (block 290). Server system 22, as described previously, may be configured to operate in a Tivoli™ environment and forward error and trace log entries to the Tivoli™  
25 enterprise management system 20.

As will be understood from the above description, the present invention allows development and deployment of managed applications which are deployed to servers rather than to individual clients. Furthermore, the applications are defined and access is controlled centrally which provides control over various  
30 versions of software so that the latest software may always be served on-demand to the end-users. Furthermore, users and user groups may be managed centrally

27



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5 application includes the ability to import the necessary definitional information and create the appropriate files to install and register a transferred file packet containing an application program on the local server in a manner which makes it recognized and available to users at clients served by the server. For example, the PMImport applet of the eNetwork On-demand server (version 1.0) from IBM supports such a capability.

10 As illustrated in the embodiment of FIG. 8, operations begin when the application software to be distributed is placed by a system administrator on a disk or storage device accessible by Tivoli™ server 20 (FIG. 1). As will be described further with reference to FIGS 9A-10, the application program source and destination locations are specified at block 112. A pre-distribution program is executed at the Tivoli™ server 20 if such a program has been specified (block 114). The application program software is then distributed by Tivoli™ server 20 to specified on-demand servers 22, 22' at block 116. In addition, the destination servers 22, 22' may be provided user identification and password information controlling access to the application program and any supporting database and may further be notified as to which end users and/or clients 24, 24', 26, 26' should be given access to the application program.

20 The software distribution operations at block 116 may be accomplished using the software deployment capabilities, for example, of the TME 10™ package. Any specified after-distribution programs are executed as illustrated at block 118. Typically, the after-distribution program is a program located on a directory at the target on-demand server 22, 22' which is executed at the target server. At block 120, the on-demand server 22, 22' updates the appropriate file and configuration information to make the new application program available to users. For example, on-demand server 22 may be configured to maintain a profile management list identifying various application programs available for execution by users at client stations 24, 24' including a designation of which applications are authorized with respect to individual users. Optionally, hardware client device associated designation and preferences could be provided. These user and/or client associated profile management lists may then be updated by on-demand server 22

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SECRET - 327260

to include the new application program (block 120). Accordingly, when a user subsequently communicates from a client 24 to server 22 (typically through a browser application as described above) an icon will appear in the user's graphic interface which the user may then select to initiate program execution. The new application software package is therefore installed and ready for use on each designated on-demand server 22, 22'.

Accordingly, with a request from a single Tivoli™ server 20 location, an administrator both sends a new application package to all supported on-demand servers and installs the program and configures (registers) it to be available for use. This may be accomplished without requiring any administrator log-in or operations at the individual on-demand servers 22, 22' or client stations 24, 24', 26, 26'.

Operations as described with reference to FIG. 8, will now be further described for a particular embodiment with reference to FIGS. 9A-9C and 10. Operations related to creating a file package definition (corresponding to block 112 of FIG. 8) will first be described with reference to FIG. 9A. At block 130, the custom file package set up task is initiated. At block 132, the file package name and source and target directory paths are specified as well as the before and after programs and any import file definitions.

Operations at block 132 may be further understood by reference to the example input screen for entering file package information shown in FIG. 10. As shown in FIG. 10, the host name specifying the Tivoli™ server 20 having access to the file package (configurable application program) is specified as "cowboys3." The source path is designated as "d:\My\_Applets" which designates, for example, a CDROM drive connected to Tivoli™ server 20. A name is provided for the file package to be distributed which in FIG. 10 is "Slick\_Applets." The target path specified in FIG. 10 is "c:\." This refers, for example, to the hard disk storage device. It is to be understood that the target path destination refers to a directory path on a receiving device which will be used for software package delivery at each of the selected target on-demand servers 22, 22' receiving distribution of the custom file package.

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provided with client/server application environments based on other operating protocols. Finally, at block 144, the created file package definition is saved by Tivoli™ server 20.

5 Referring now to FIG. 9B, file distribution operations from blocks 114 and 116 of FIG. 8 will be further described. At block 150, the file package distribution task is commenced at Tivoli™ server 20. If there are no packages to distribute at block 152 and a request to close the task has been received at block 154, operations terminate. Otherwise, operations loop back to block 152 until a package is available for distribution. When a package is available for distribution, the administrator is prompted at block 156 to determine if any changes are desired in the file package before distribution. If so, any modifications are performed and saved at block 158. At block 160, Tivoli™ server 20 again tests to determine if the designated source directory from the file package definition exists and, if not, issues an error message at block 162 and terminates file package distribution operations.

10 At block 164, Tivoli™ server 20 determines if any before distribution program has been designated and, if so, processes the before distribution program at block 166. A before distribution program may be provided and executed at block 166 for a variety of reasons. For example, Tivoli™ server 20 may check for space availability on the storage devices on the target on-demand servers 22, 22' to insure that sufficient space is available to accept distribution of the file packet before transmission. Tivoli™ server 20 could further check to insure that the required environment for distribution exists on the target on-demand servers 22, 22'. For example, different versions of the application launcher applet and configuration manager applet for a given application program may be provided for different types of hardware or operating systems to insure that the preferences included are suitable for the target environment. The file package is then built and distributed to the specified target servers 22, 22' at block 168.

25 Referring now to FIG. 9C, operations at the recipient on-demand server 22, 22' from blocks 118 and 120 of FIG. 5 will be further described. At block 170, the recipient on-demand server 22 determines if any after distribution program has

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been designated by the file package. If so, the after distribution program is processed at block 172. Various installation, authorization, customization or clean up operations may be provided depending upon the client/server and network management software which is installed and operational at the on-demand server 22. At block 174, on-demand server 22 determines if an import file name has been designated and, if so, executes the necessary code to register the application program at block 176. For the illustrated example, this is accomplished by a call to PMImport to update the profile manager list of on-demand server 22. Appropriate information associated with the application program being distributed to support the profile management function of on-demand server 22 associated with the application program being distributed should be included in the transmitted import file for automatic operations to occur properly. For example, with the IBM On-Demand Server™, the import file should include the name to be displayed in the on-demand server configuration tree and the URL of the applet. Additional optional information may be included in the import file such as a URL identifying icons for display, common fields, access control information and class information where appropriate.

As can be seen from the example of FIG. 10, the designated Import.txt file is on a path previously designated for the transfer of the file package (the c:\My\_Applets directory). Therefore, it is to be understood that the file package downloaded from Tivoli™ server 20 should not only include the application launcher applet and the configuration management applet but the My\_Applet Import.txt file as well. Otherwise, the PMImport call may not be able to find the designated file in the appropriate directory.

At block 178, on-demand server 22 determines if any registration error was encountered and, if so, issues an error message at block 180 and terminates operations. If refreshing of the application launcher is not required for the particular file package distribution at block 182, operations for registration terminate successfully. Otherwise, at block 184 the application launcher applet is refreshed and displayed at block 184 before termination of package registration operations.

33

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Refreshing and displaying operations may include importing the software applets and registering them to be immediately available to users. The applet launcher may be refreshed, for example by pressing the Refresh button or automatically without user input, to display the newly registered application icons. Old icons may be deleted and new icons may be added to provide a user desktop display corresponding to the application access control information for the user stored at the on-demand server 22, 22'. Accordingly, all the users that are logged onto on-demand servers 22, 22' may see the new application on their desktops and start using them. The display refresh for a new application is preferably limited to user's having access to the new application.

As will be appreciated by those of skill in this art, the above-described aspects of the present invention in the figures may be provided by hardware, software, or a combination of the above. Various components of the application management system of the present invention may, in practice, be implemented by a microcontroller including input and output ports and running software code, by custom or hybrid integrated circuits, by discrete components or by a combination of the above. Similarly, various of the operations may be implemented as software programs, such as JAVA™ applets, executing on a workstation, such as servers 22, 22' or clients 24, 24', 26, 26''. More generally, as described above, operations according to the present invention may be realized in the hardware of existing on-demand servers 22, 22' which, when so configured, provide an application management system for a network according to the present invention.

In the drawings and specification, there have been disclosed typical preferred embodiments of the invention and, although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being set forth in the following claims.

34

THAT WHICH IS CLAIMED:

1. A method for management of application programs on a network including a server and a client comprising the steps of:

installing a plurality of application programs at the server;  
receiving at the server a login request from a user at the client;

5 establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized;

10 receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and

providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.

2. A method according to Claim 1 further comprising the steps of:  
maintaining application management information for the plurality of applications at the server; and

5 wherein the establishing step includes the step of including a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information.

3. A method according to Claim 2 wherein the establishing a user desktop step includes the step of:

5 distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and

wherein the receiving a selection step includes the step of receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs.

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5 4. A method according to Claim 3 wherein the maintaining step includes the step of maintaining configurable user preference information for the plurality of application programs at the server and wherein the providing an instance step includes the step of providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client.

5 5. A method according to Claim 4 wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and further comprising the step of updating the user preferences configurable by the user responsive to updates from the user and updating the user preferences not configurable by the user responsive to updates from the administrator.

6. A method according to Claim 3 wherein the application launcher programs are JAVA™ applets and the user desktop interface is a JAVA™ applet executed by a web browser.

5 7. A method according to Claim 1 wherein the establishing a user desktop step includes the steps of:  
configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface; and  
providing the user desktop interface and the associated information for the user desktop interface to the client for display.

8. A method according to Claim 7 wherein the configuring the user desktop step includes the step of configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized.

5 9. A method according to Claim 1 wherein the receiving a selection step is followed by the step of determining a license availability for the selected one of the plurality of application programs for the user and wherein the providing step includes the step of providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user.

5 10. A method according to Claim 9 wherein the establishing a user desktop step includes the step of distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and wherein the receiving a selection step includes the step of receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the step of determining a license availability includes the step carried out by the one of the application launcher programs associated with the selected one of the plurality of application programs of obtaining the license availability from a license management server.

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11. A method according to Claim 10 wherein the license management server is the server.

12. A method according to Claim 1 wherein the plurality of application programs are installed on a network drive accessible to the server.

13. A method according to Claim 1 further comprising the step of receiving at the server event logging information from the instance of the selected one of the plurality of application programs.

SECRET 823760

14. A method according to Claim 13 further comprising the step of providing the received event logging information to a network management server associated with the server.

15. A method for distribution of application programs to a target station on a network comprising the steps executed on a centralized network management server coupled to the network of:

5 providing an application program to be distributed to the network management server;

specifying a source directory and a target directory for distribution of the application program;

10 preparing a file packet associated with the application program and including a segment configured to initiate registration operations for the application program at the target station; and

distributing the file packet to the target station.

16. A method according to Claim 15 wherein the network management server is a Tivoli™ server.

17. A method according to Claim 16 wherein the segment configured to initiate registration operations includes an import data file and a call to an import program executing on the target station.

18. A method according to Claim 16 where the application program is provided as a JAVA™ applet and wherein the application program is registered based on a Universal Resource Locator (URL) address accessible to a browser application and wherein the segment configured to initiate registration operations includes a variable field into which the target station inserts its identification during registration operations.

38

19. A method according to Claim 18 wherein the step of distributing comprises the step of distributing the file packet to a plurality of target stations each having an identification which may be inserted into the variable field at the target station.

20. An application program distribution system for distributing application programs to a target station on a network executing on a centralized network management server coupled to the network, the system comprising:

5 means for providing to the network management server an application program to be distributed to remote servers;

means for specifying a source directory and a target directory for distribution of the application program;

10 means for preparing a file packet associated with the application program, the file packet including a segment configured to initiate registration operations for the application program at the target station; and

means for distributing the file packet to the target station.

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21.

An application program management system for managing application programs on a network including a server and a client comprising:

means for installing a plurality of application programs at the server;

means for receiving at the server a login request from a user at the client;

5 means for establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized;

10 means for receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and

means for providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.



SECRET 20250

22. A computer program product for distributing application programs to a target station on a network executing on a centralized network management server coupled to the network, the computer program product comprising:

a computer-readable storage medium having computer-readable program code means embodied in said medium, said computer-readable program code means comprising:

computer readable program code means for providing to the network management server an application program to be distributed to remote servers;

computer readable program code means for specifying a source directory and a target directory for distribution of the application program;

computer readable program code means for preparing a file packet associated with the application program, the file packet including a segment configured to initiate registration operations for the application program at the target station; and

computer readable program code means for distributing the file packet to the target station.

<sup>16</sup>~~23~~. A computer program product for managing application programs on a network including a server and a client, the computer program product comprising:

a computer-readable storage medium having computer-readable program code means embodied in said medium, said computer-readable program code means comprising:

computer readable program code means for installing a plurality of application programs at the server;

computer readable program code means for receiving at the server a login request from a user at the client;

computer readable program code means for establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated

15 with a set of the plurality of application programs installed at the server for which the user is authorized;

computer readable program code means for receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and

20 computer readable program code means for providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.

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**METHODS, SYSTEMS AND COMPUTER PROGRAM  
PRODUCTS FOR CENTRALIZED MANAGEMENT OF  
APPLICATION PROGRAMS ON A NETWORK**

Abstract of the Disclosure

5 Methods, systems and computer program products for management of application programs on a network including a server supporting client stations are provided. The server provides applications on-demand to a user logging in to a client supported by the server. Mobility is provided to the user and hardware portability is provided by establishing a user desktop interface responsive to a login request which presents to the user a desktop screen through a web browser interface which accesses and downloads selected application programs from the server responsive to a request from the user on the user desktop screen at the client. The application program is then provided from the server and executed at the client. The application program may further be customized to conform to the user's preferences and may also provide for license use management by determining license availability before initiating execution of the application program. Finally, software distribution and installation may be provided from a single network management server.

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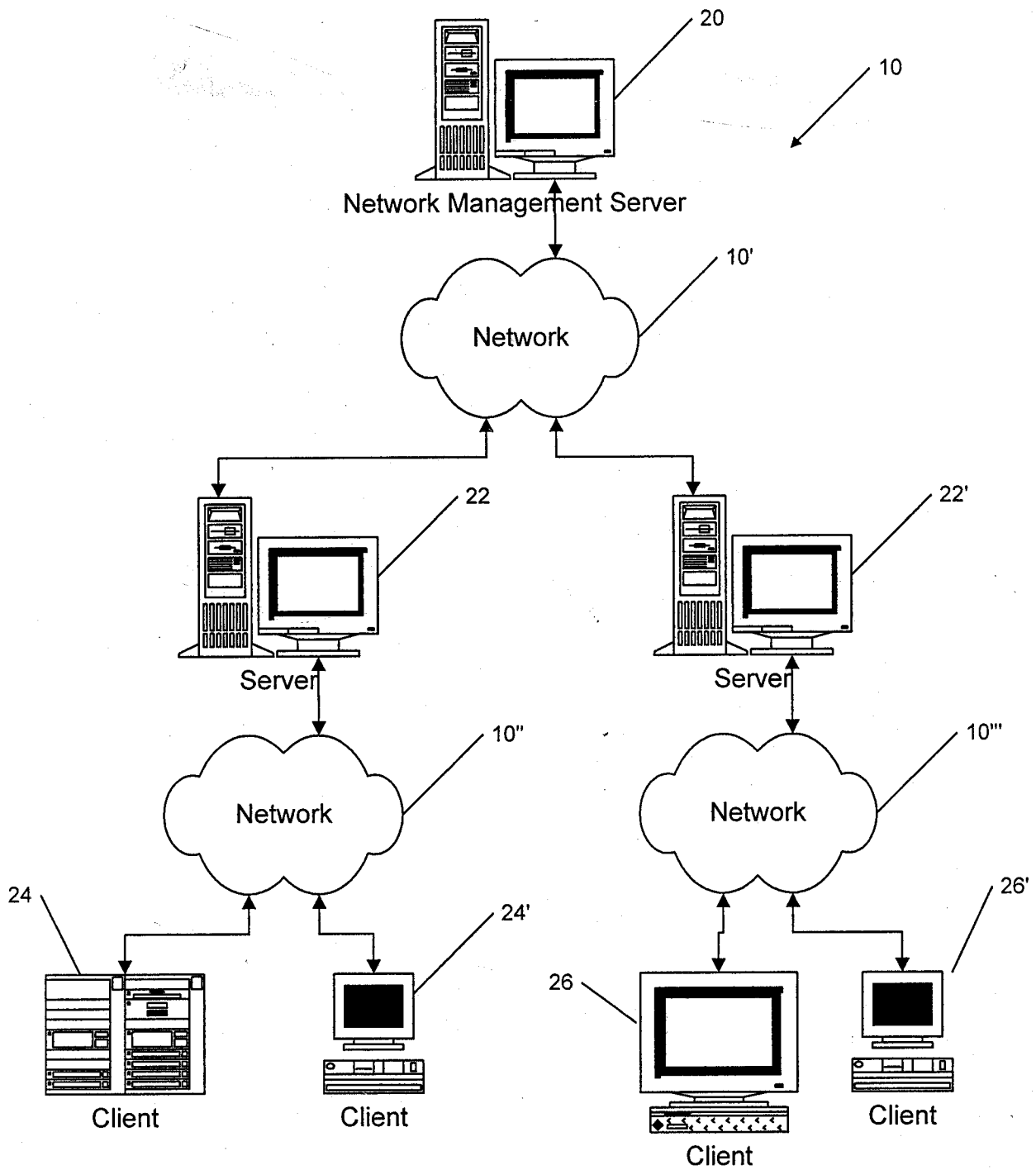


FIG. 1

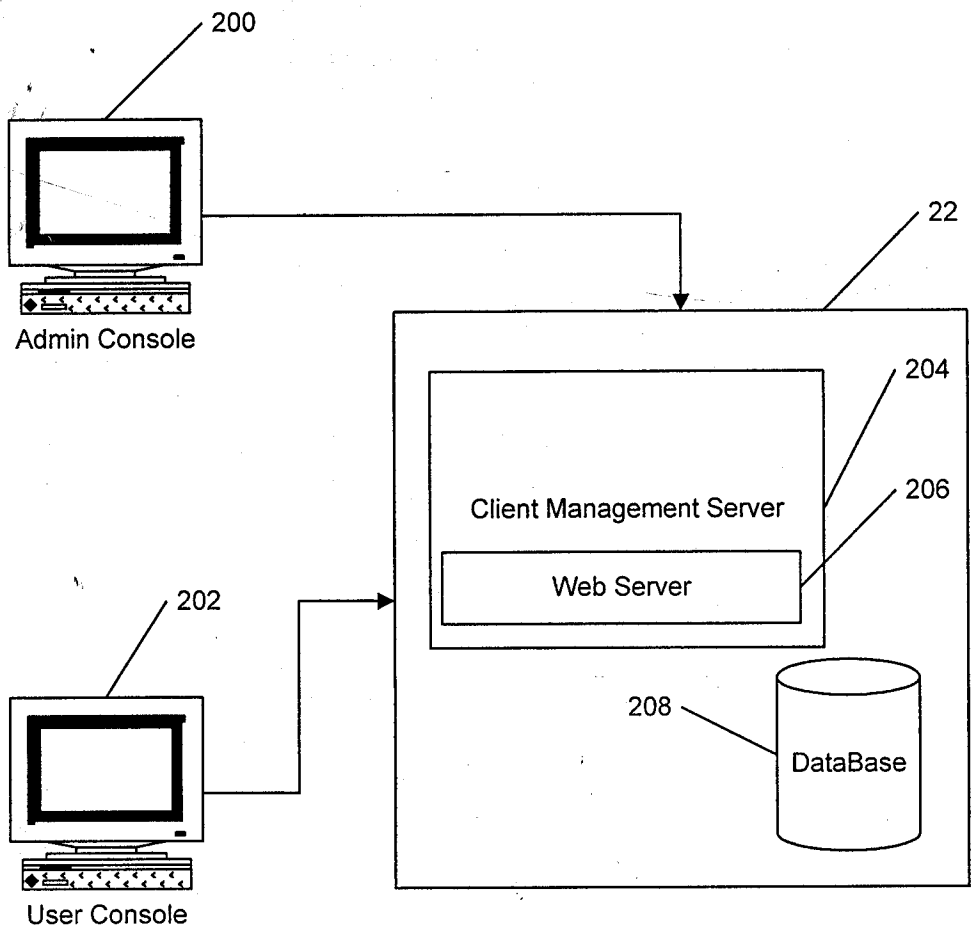


FIG. 2

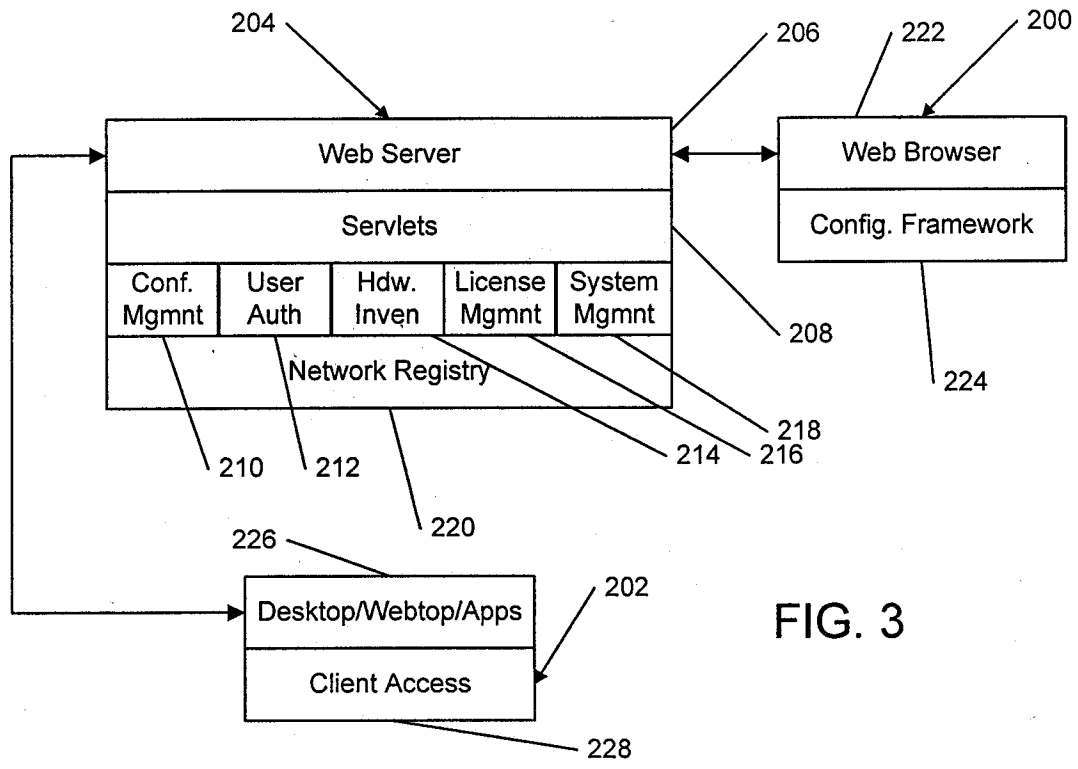


FIG. 3

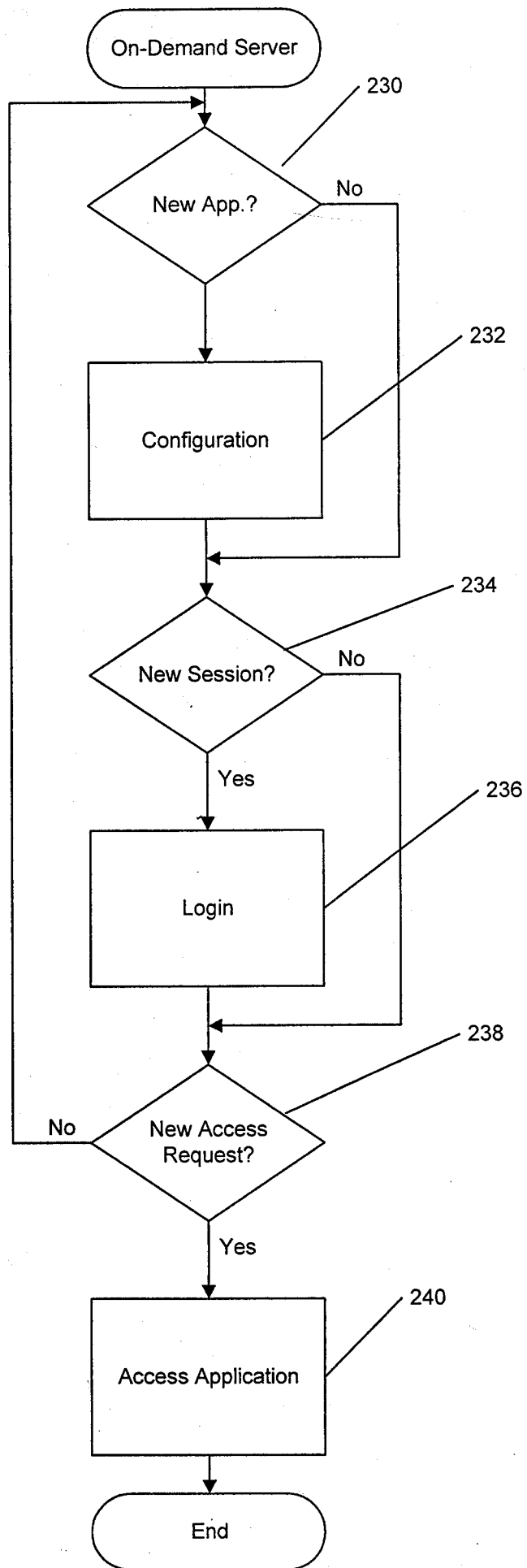


FIG. 4

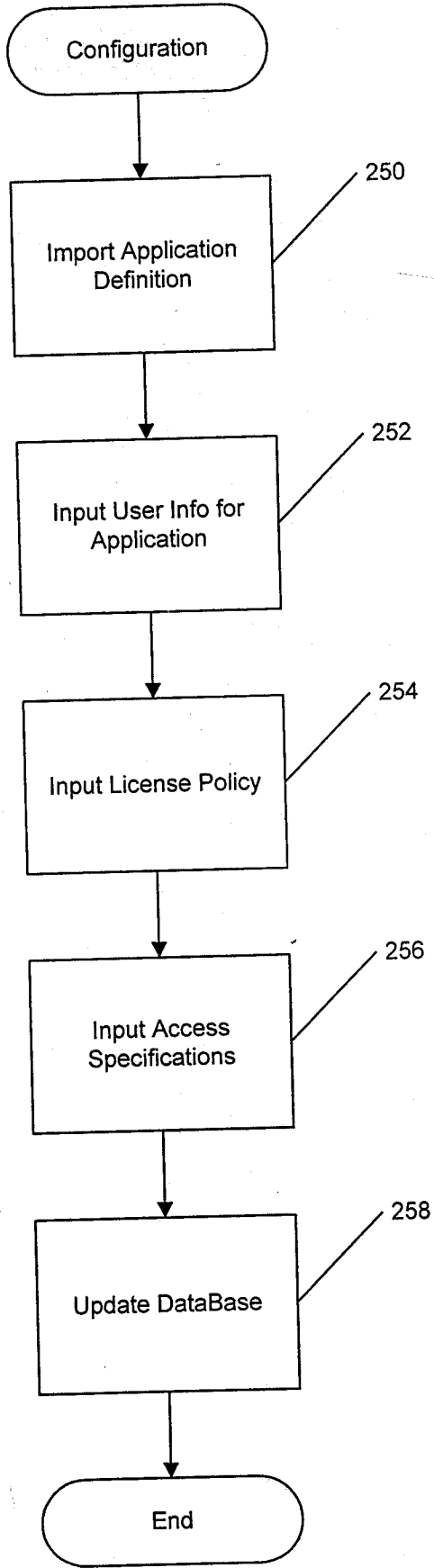


FIG. 5

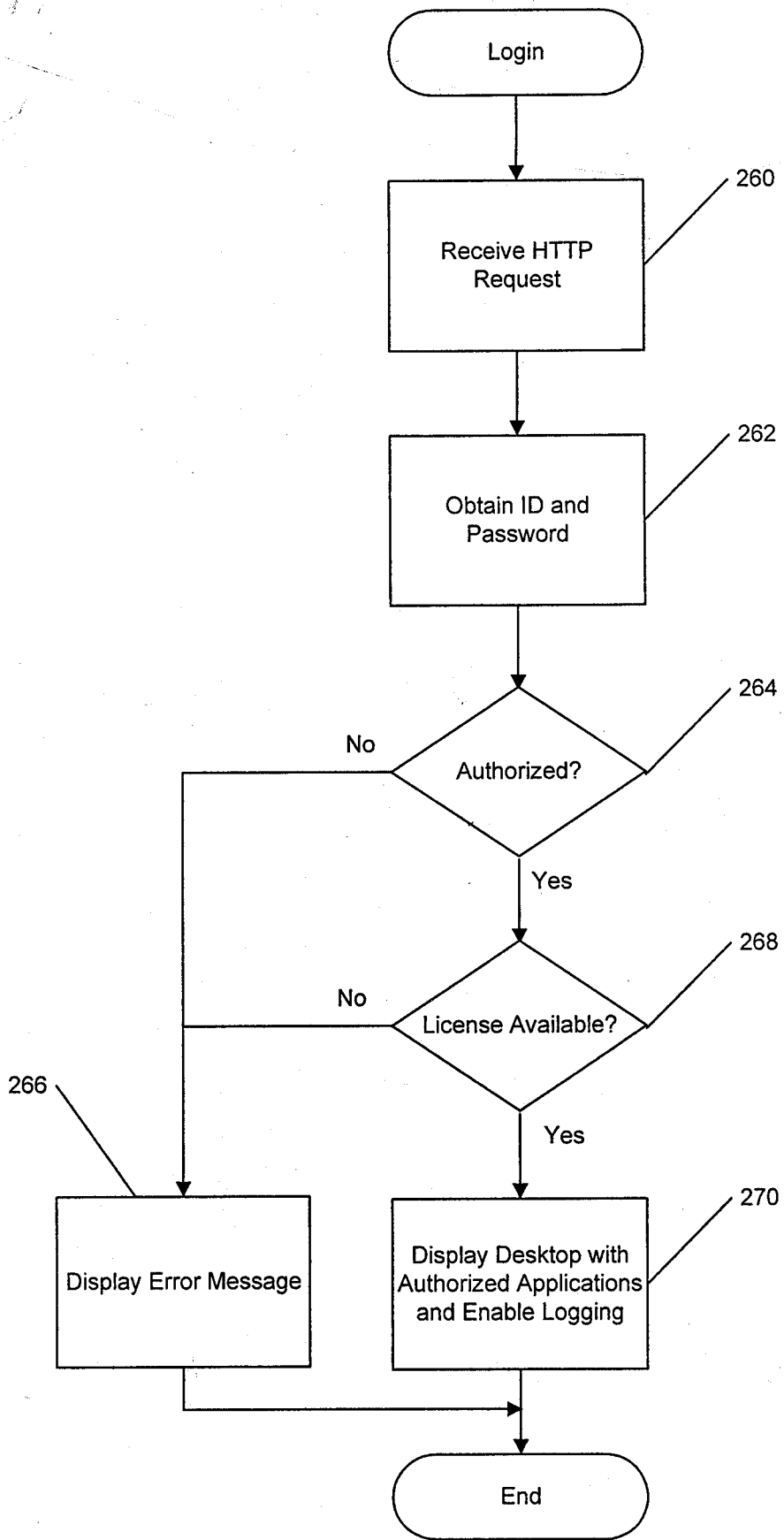


FIG. 6



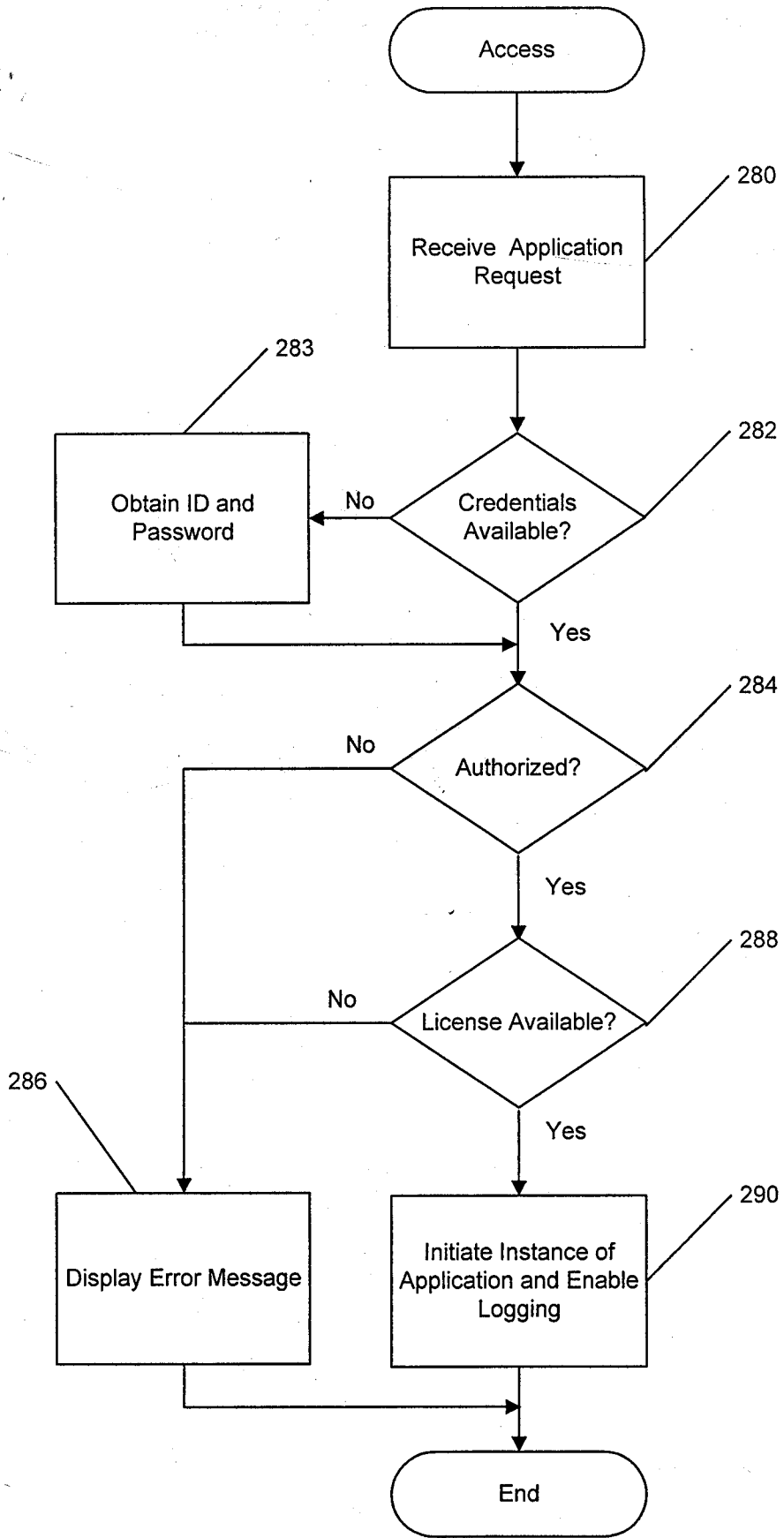


FIG. 7

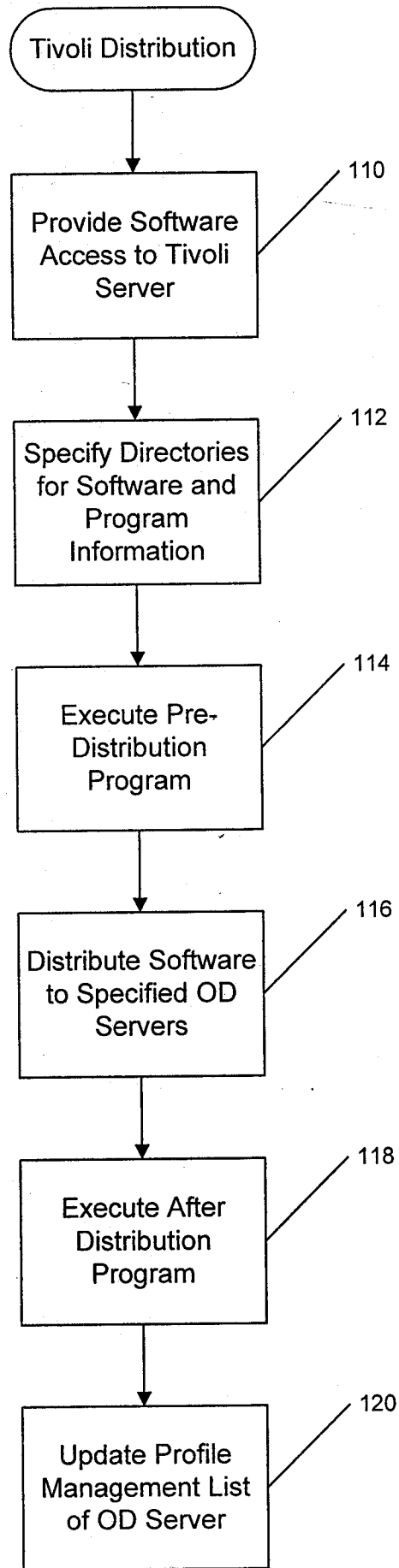


FIG. 8

Create File Package Definition

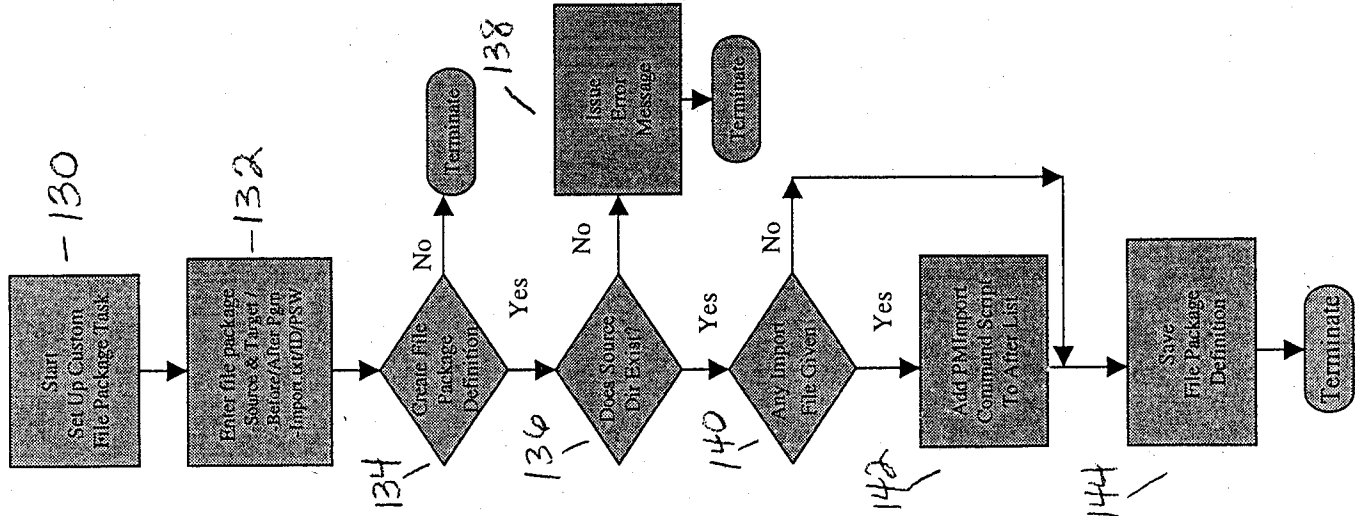


FIG. 9A

Distribute File Package

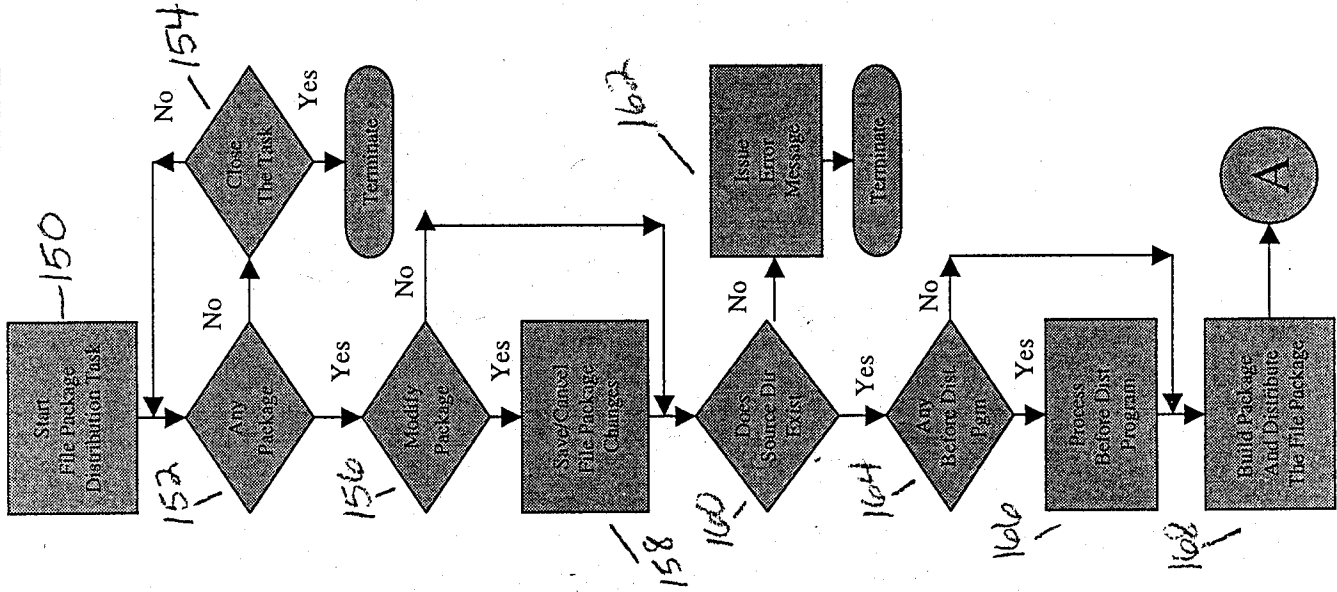


FIG. 9B

Register Package Contents

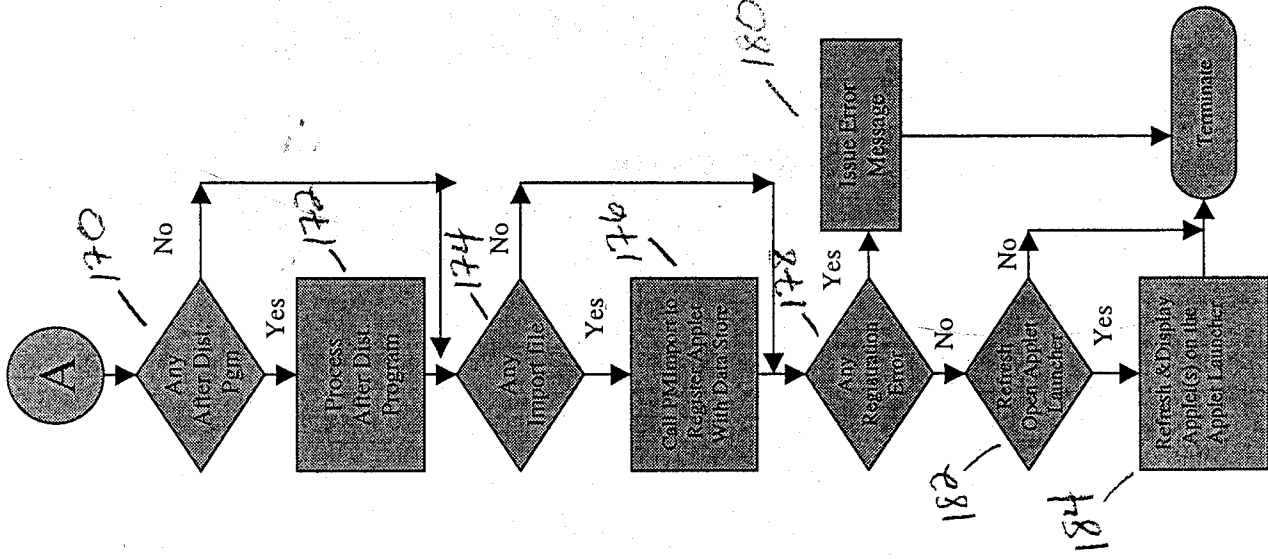
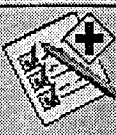


FIG. 9C

**Set Up Custom File Package (ON DEMAND SERVER)**



Custom File Package

Host Name: cowboys3

Source Path: d:\My\_Applets

Package Name: Slick\_Applets

Target Path: c:\

Program to Run before Distribution: d:\Check\_DiskSpace.sh

Program to Run after Distribution: c:\My\_Applets\My\_Setup.sh

On-Demand Server Profile Management

Import File Name: c:\My\_Applets\My\_Applet\_Import.txt

User ID: Abdi

User Password:

Log File Path: d:\My\_Logs\My\_Setup.Log

FIG. 10

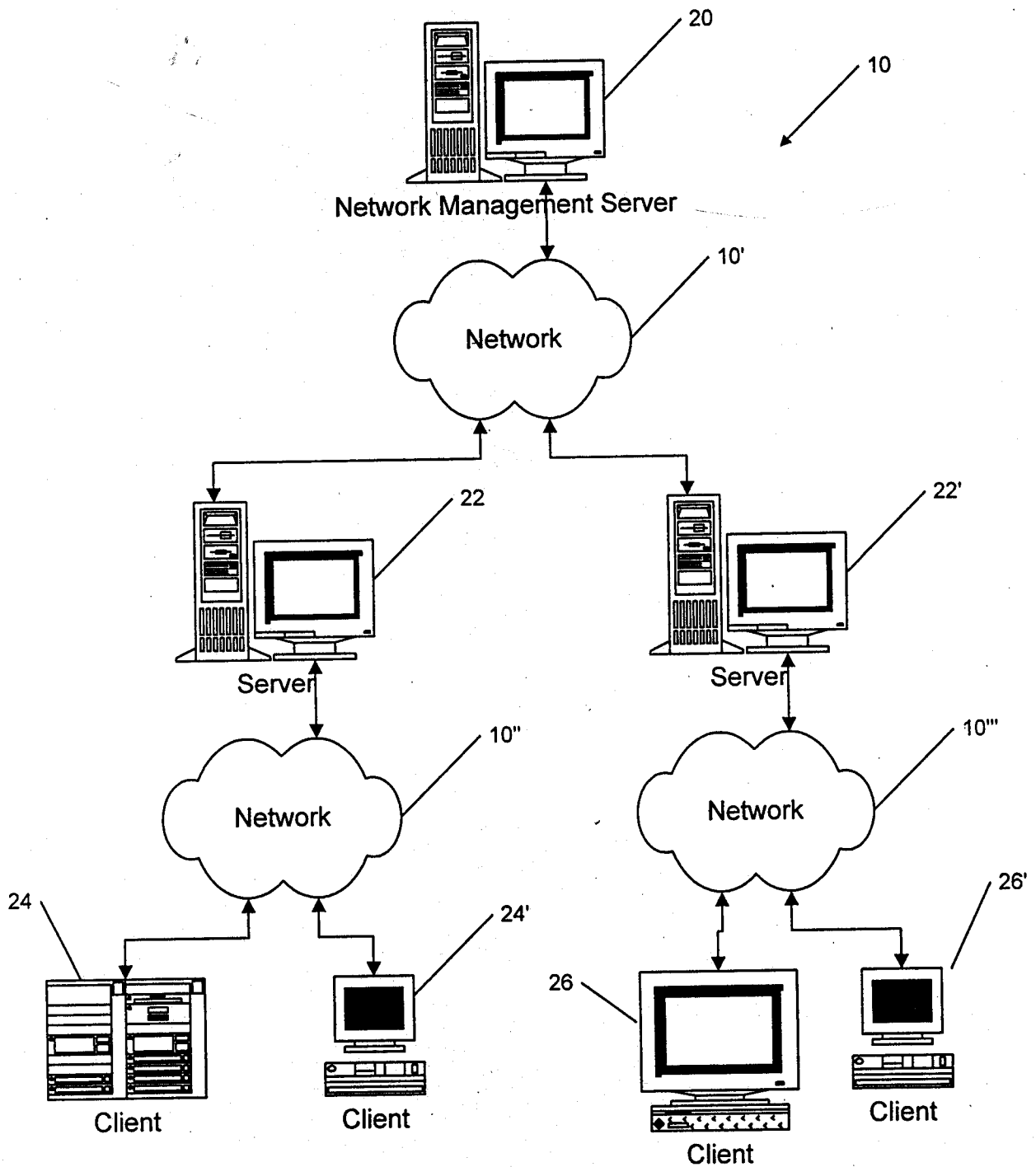


FIG. 1

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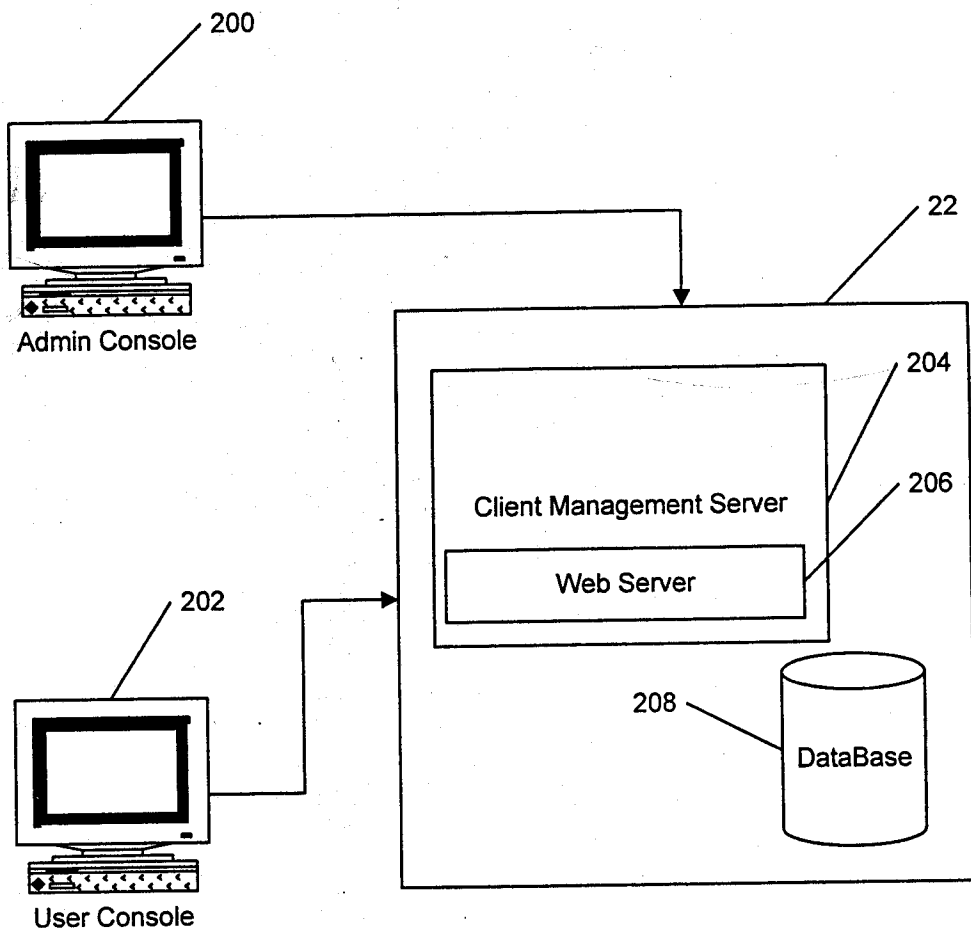


FIG. 2

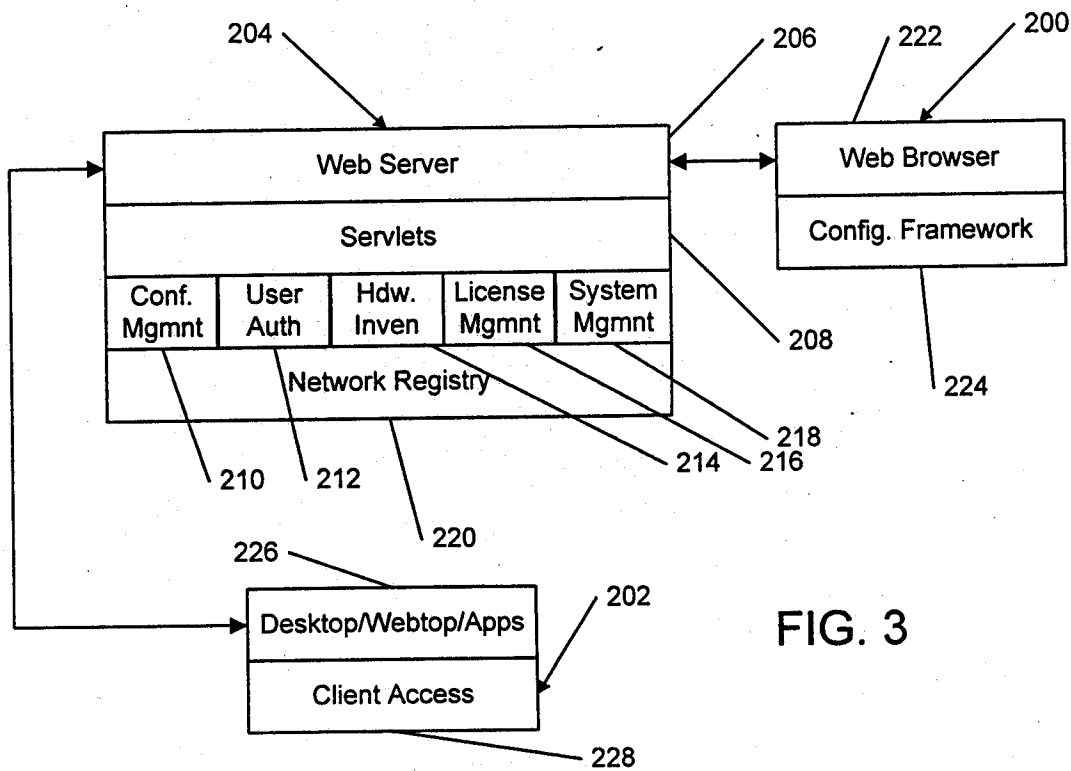


FIG. 3

Sheet 2 of 60

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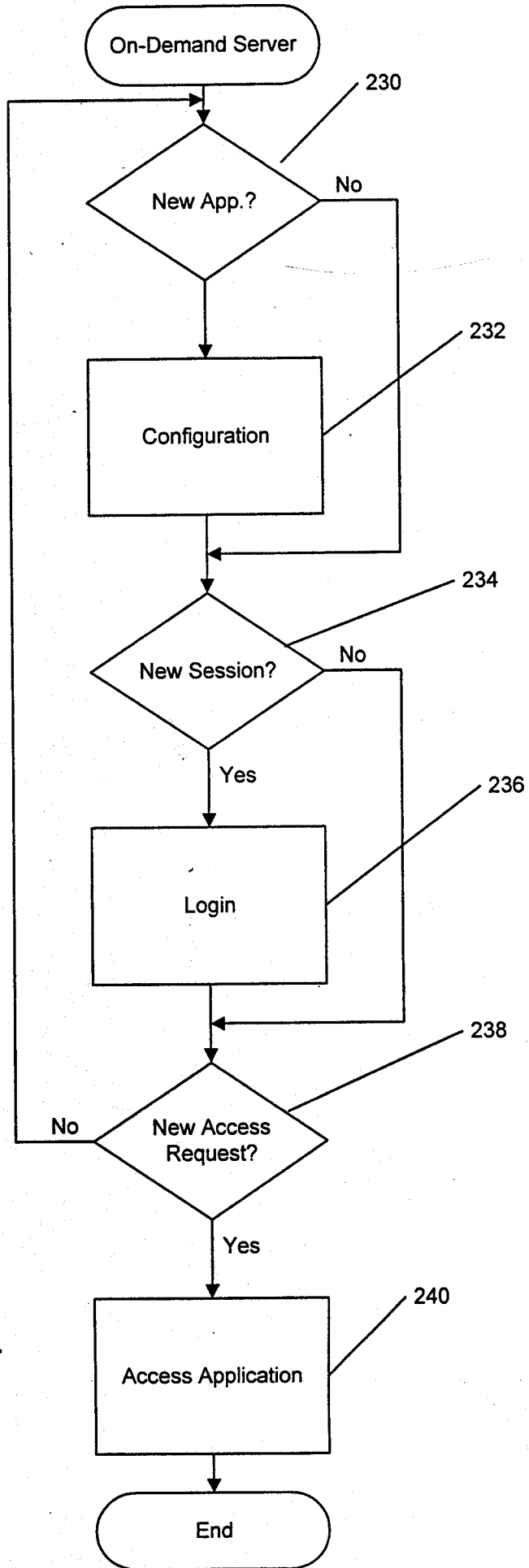


FIG. 4

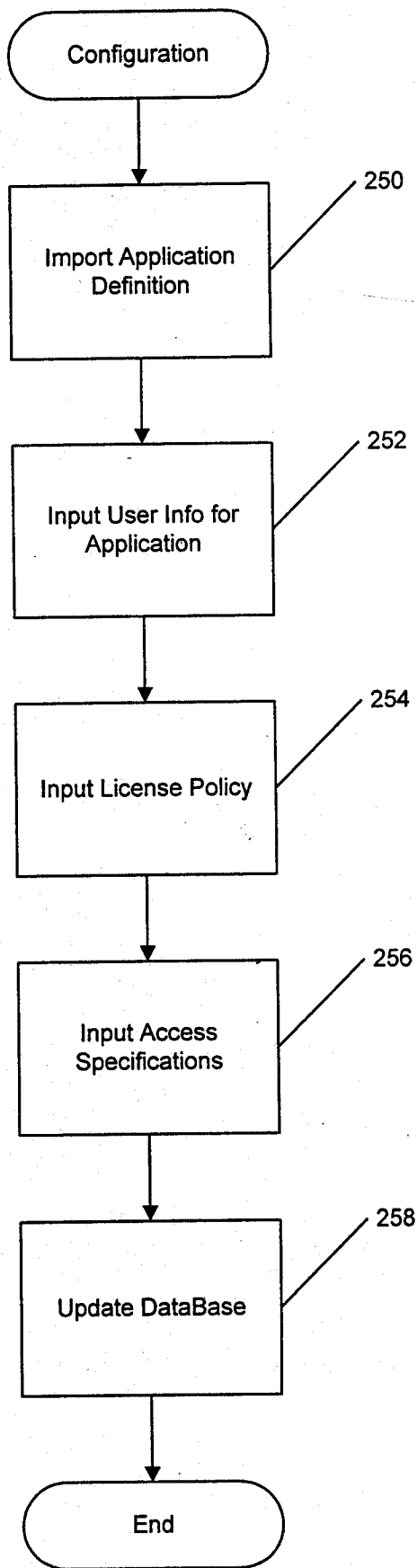


FIG. 5

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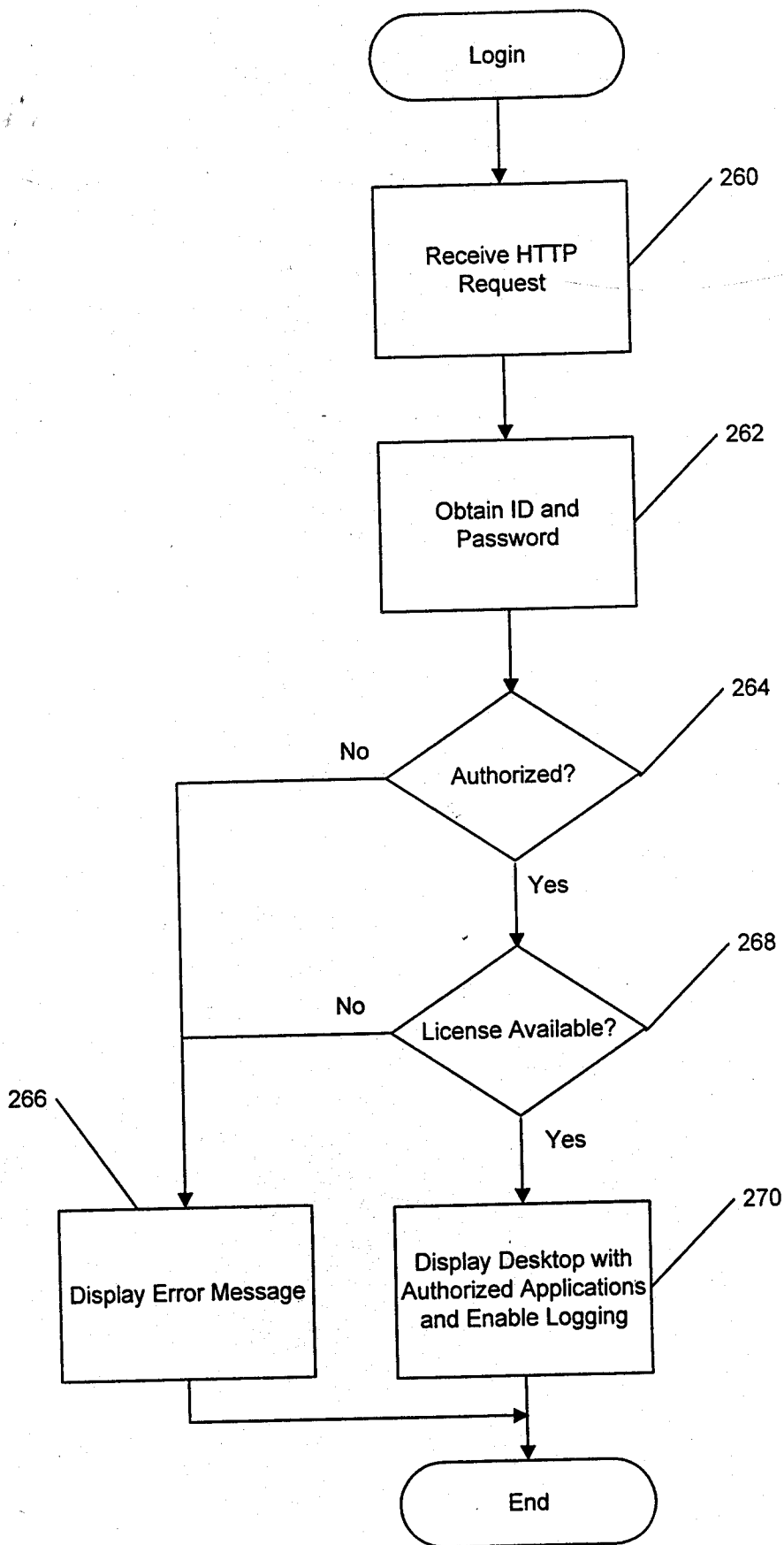


FIG. 6

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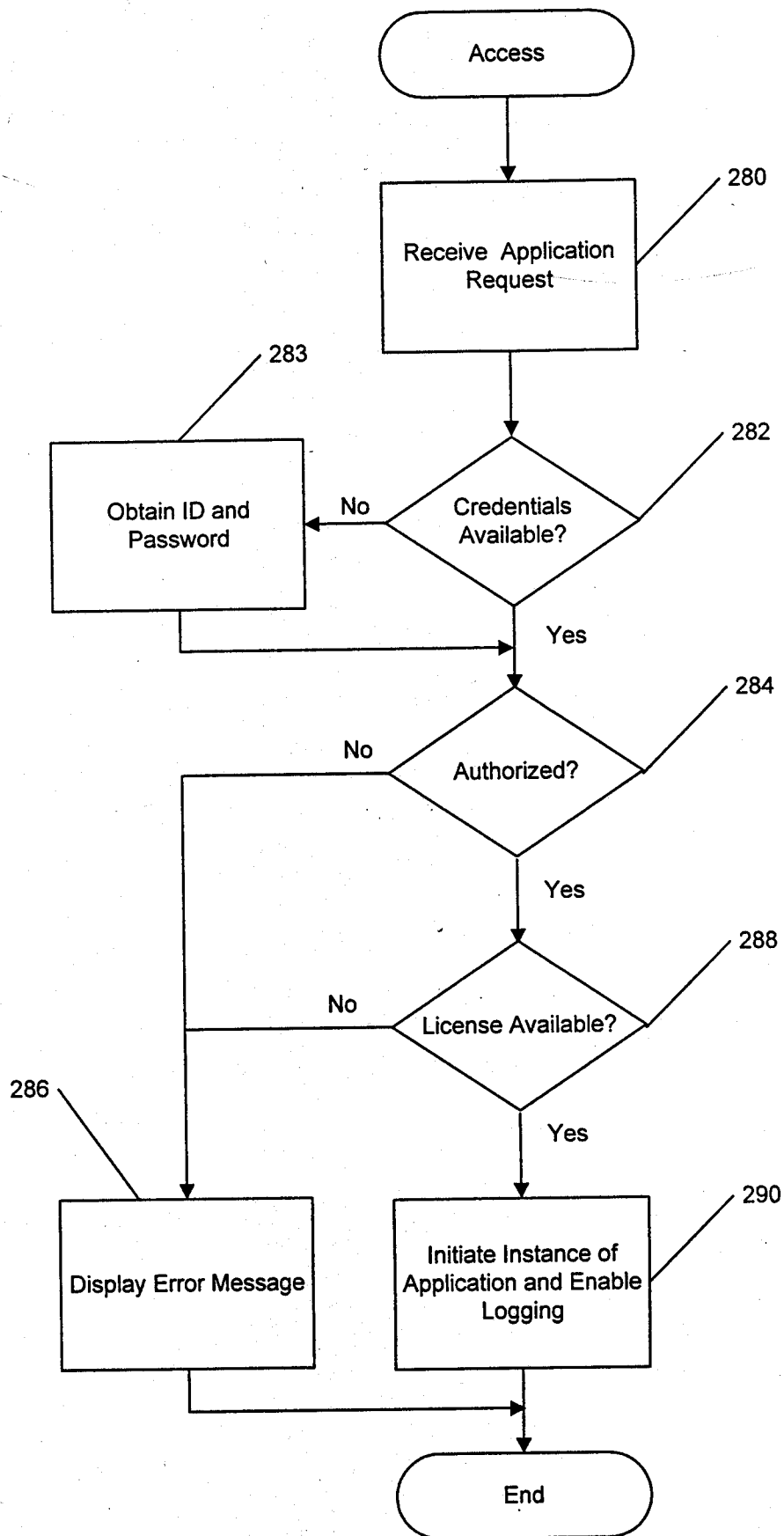


FIG. 7

Sheet 8 of 10

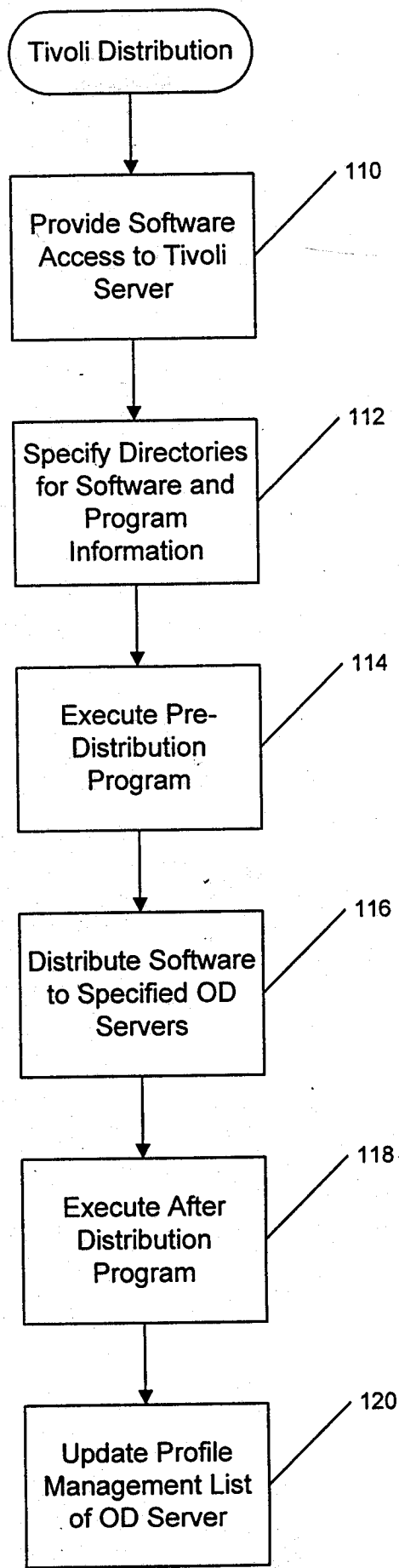


FIG. 8

Register Package Contents

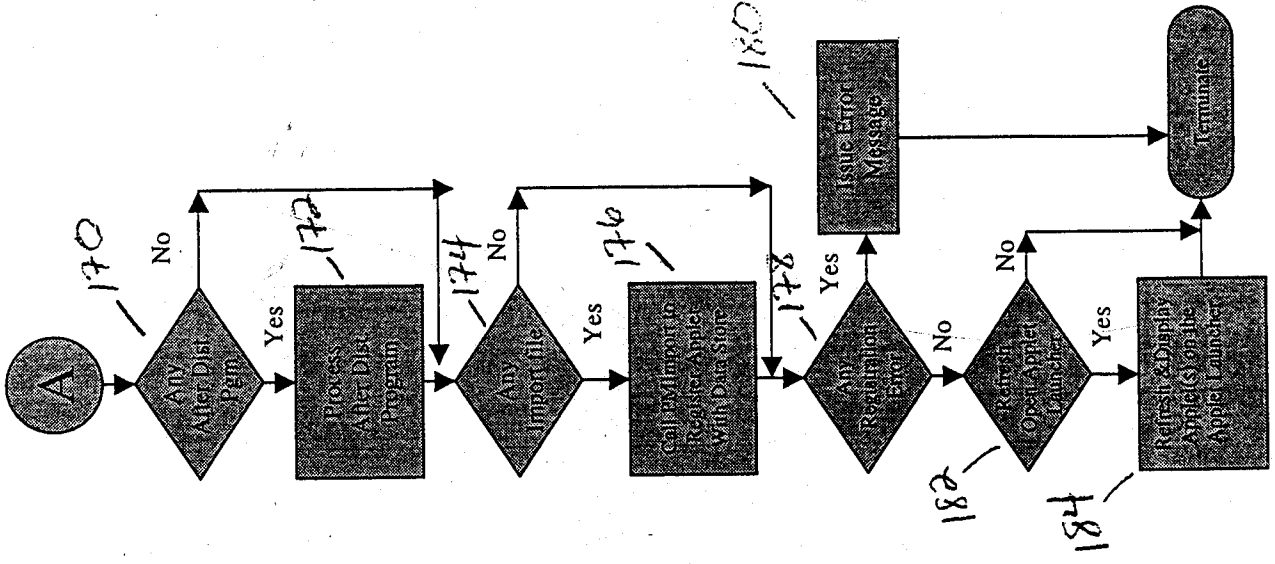


FIG. 9C

Distribute File Package

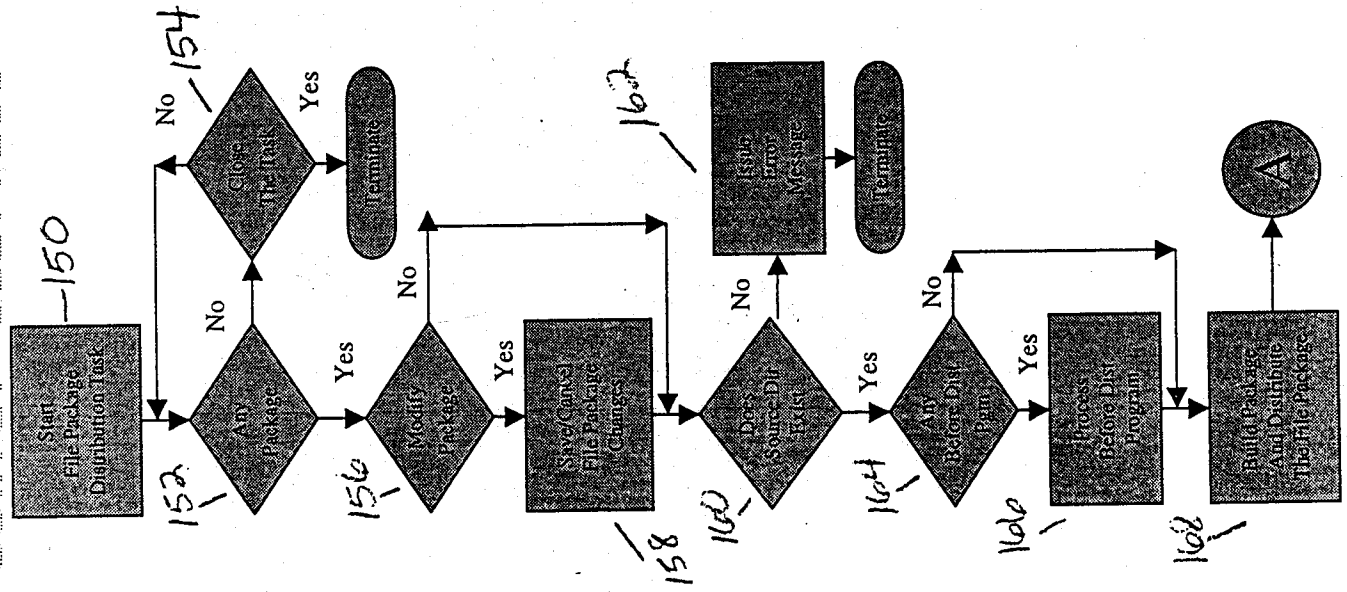


FIG. 9B

Create File Package Definition

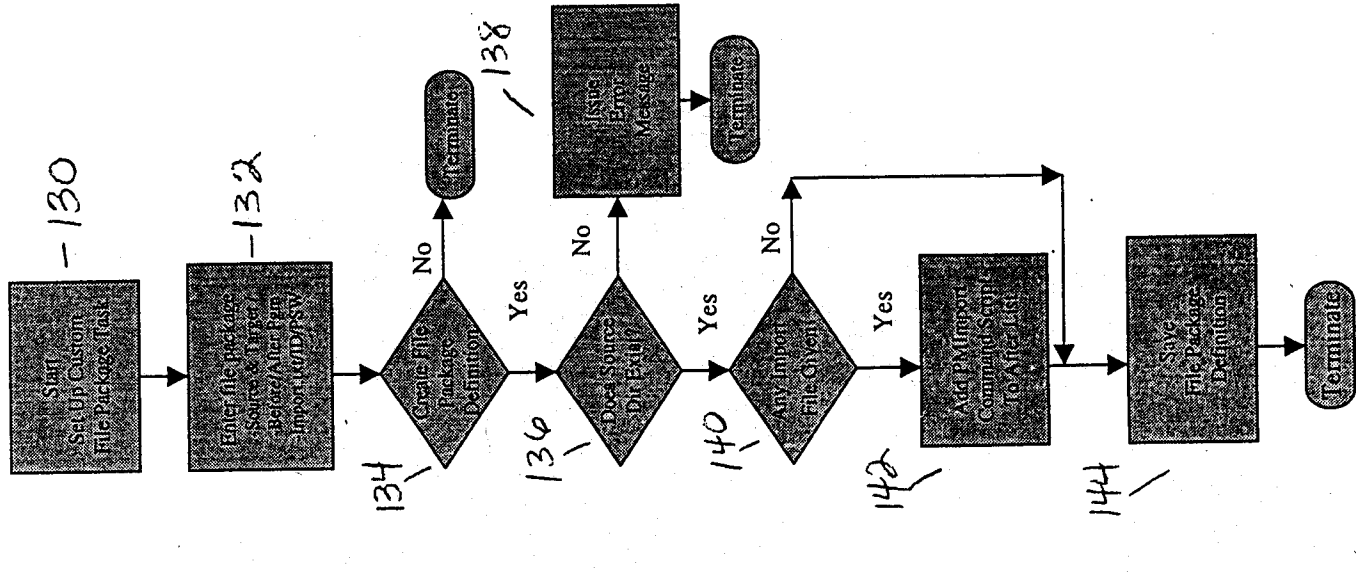


FIG. 9A

**Set Up Custom File Package (ON\_DEMAND\_SERVER)**

Custom File Package

Host Name: cowboys3

Source Path: d:\My\_Applets

Package Name: Slick\_Applets

Target Path: c:\

Program to Run before Distribution: d:\Check\_DiskSpace.sh

Program to Run after Distribution: c:\My\_Applets\My\_Setup.sh

On-Demand Server Profile Management

Import File Name: c:\My\_Applets\My\_Applet\_Import.txt

User ID: Abdi

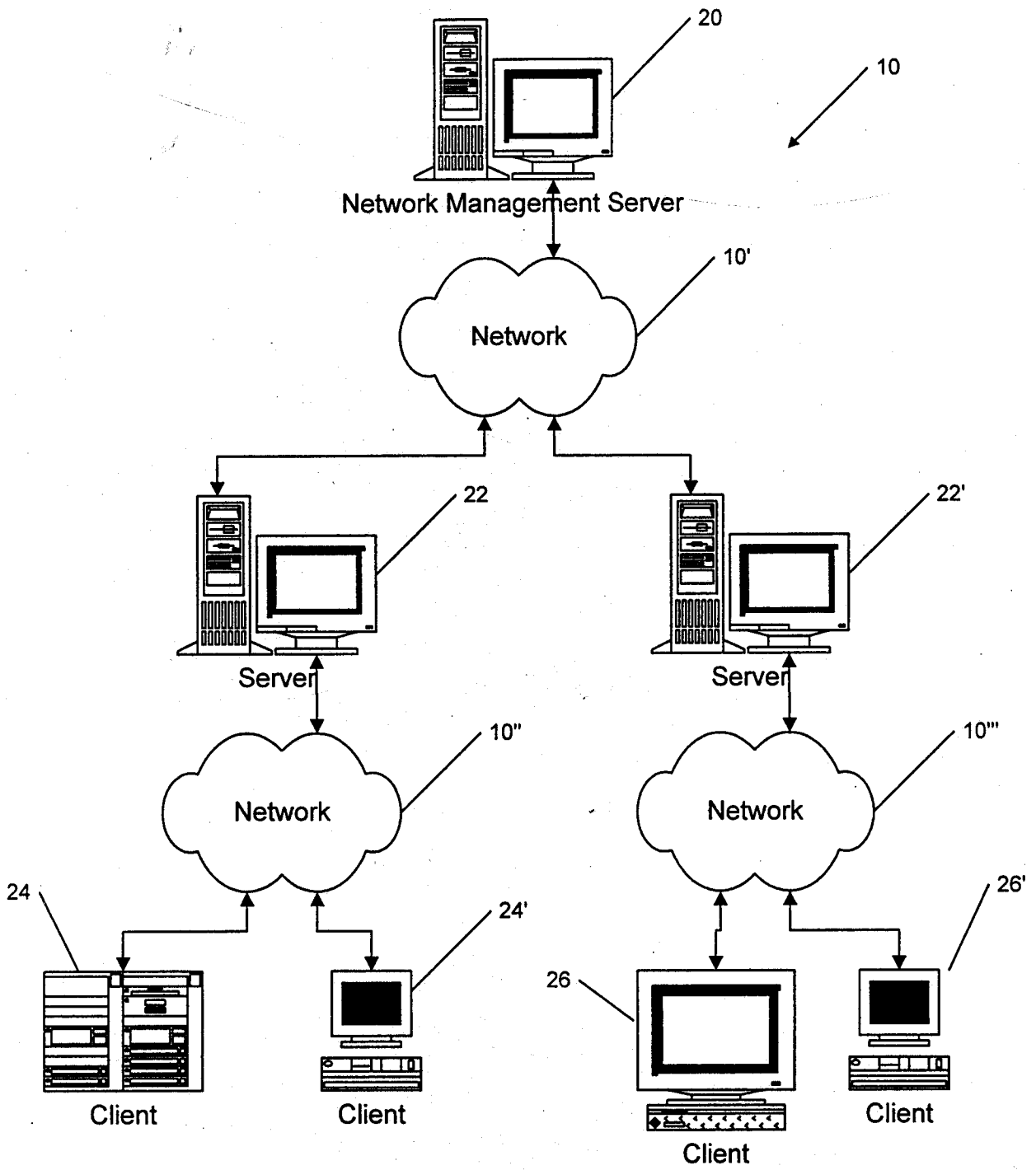
User Password:

Log File Path: d:\My\_Logs\My\_Setup.Log

Set and Close Cancel Help

COPY TO FILE

FIG. 10



00101-00000000

FIG. 1

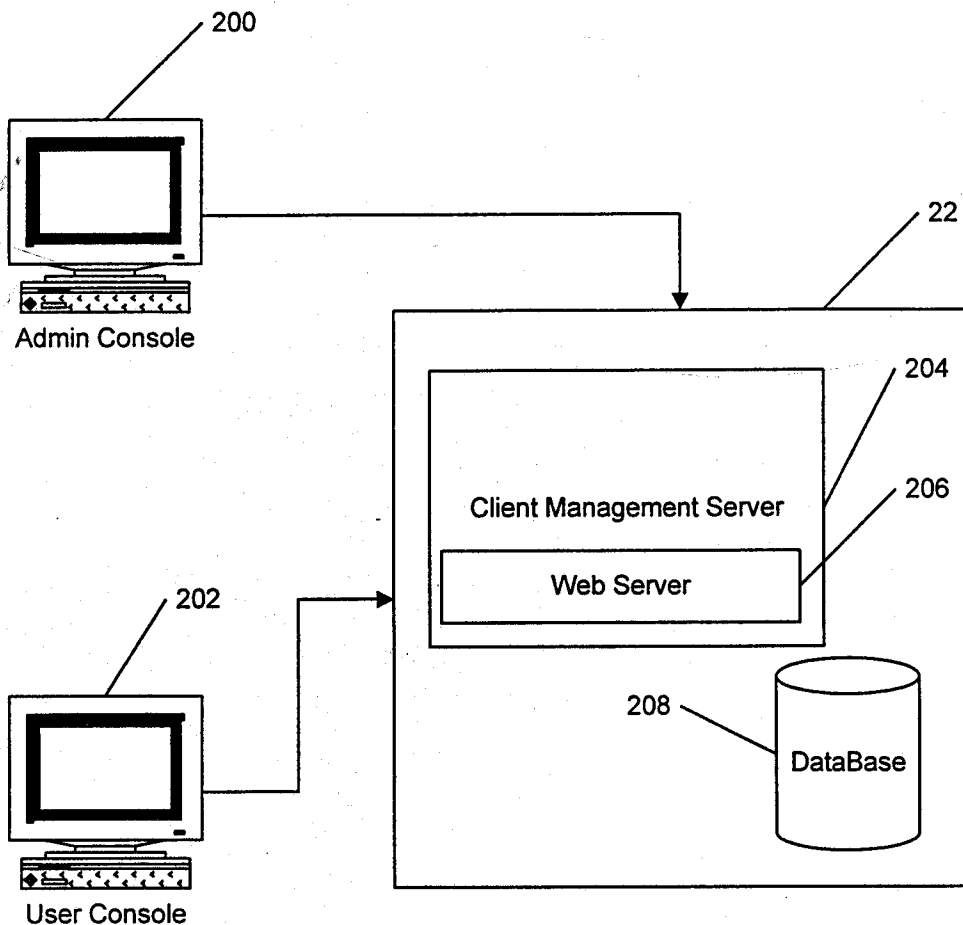


FIG. 2

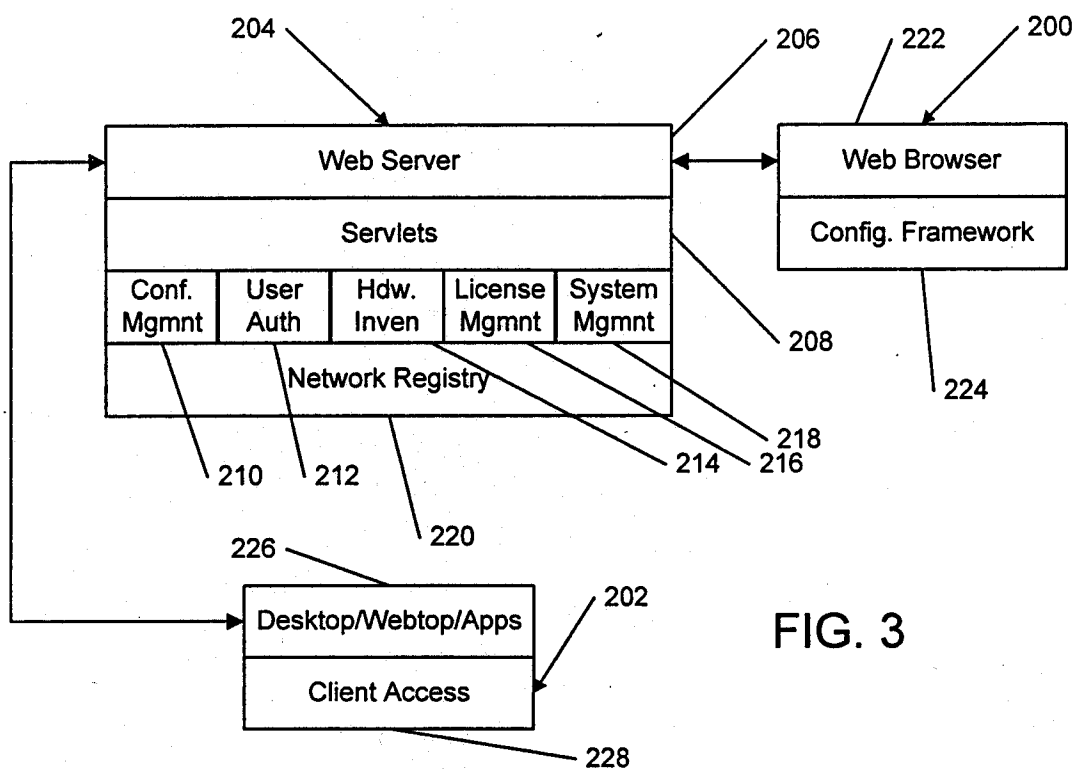


FIG. 3

"SECRET"

SECRET 2007020

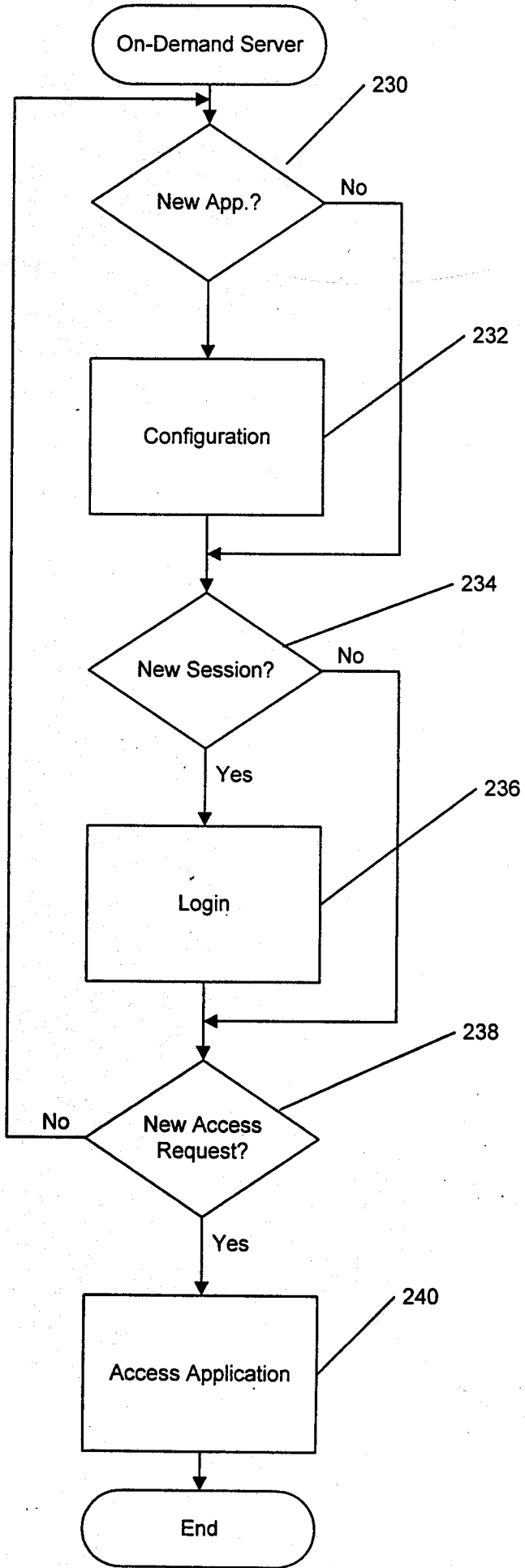


FIG. 4



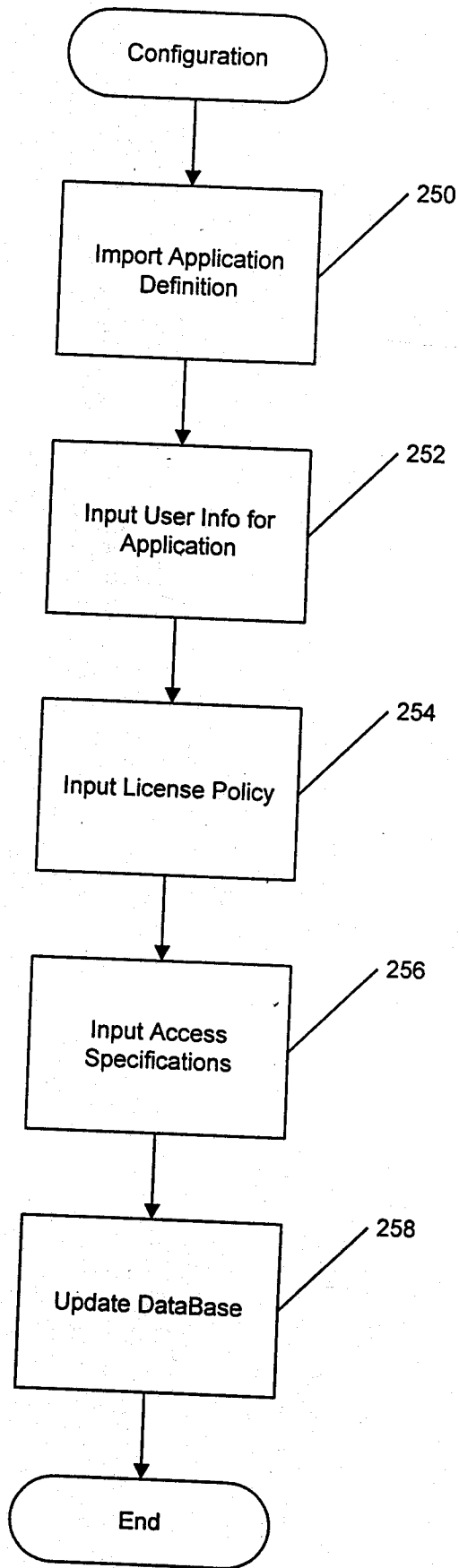


FIG. 5

SECRET



SECRET 8257260

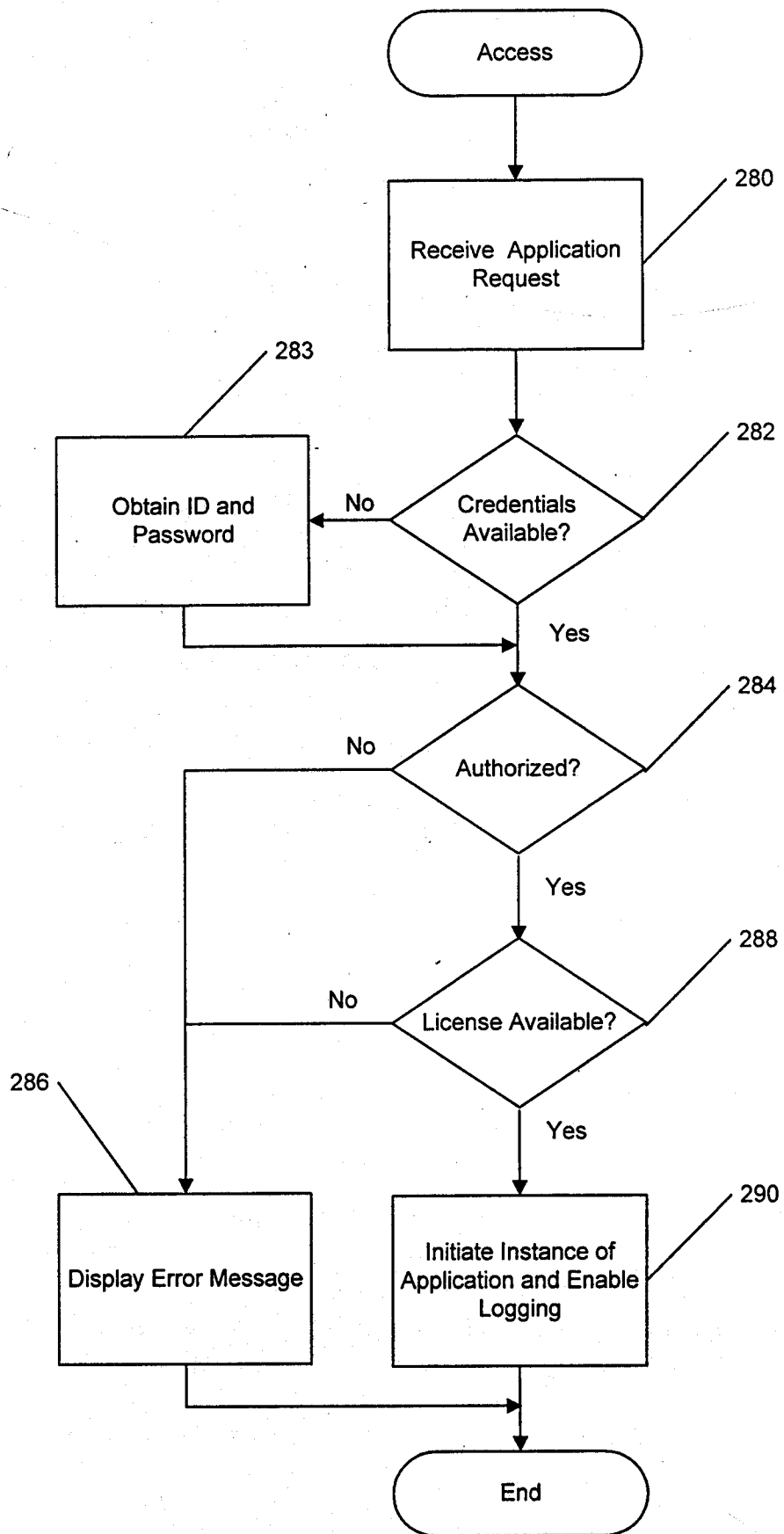


FIG. 7

DATE RECEIVED

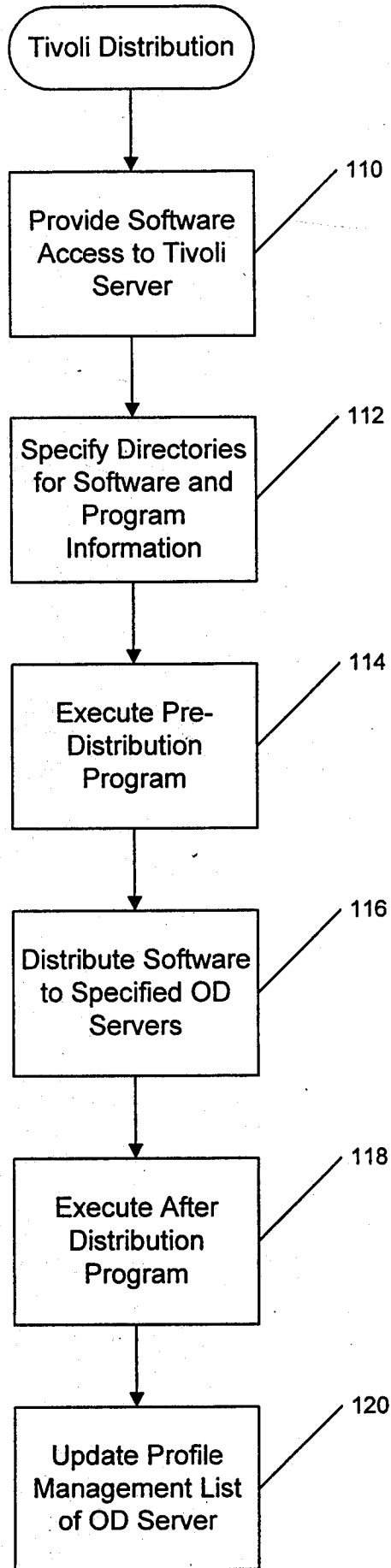
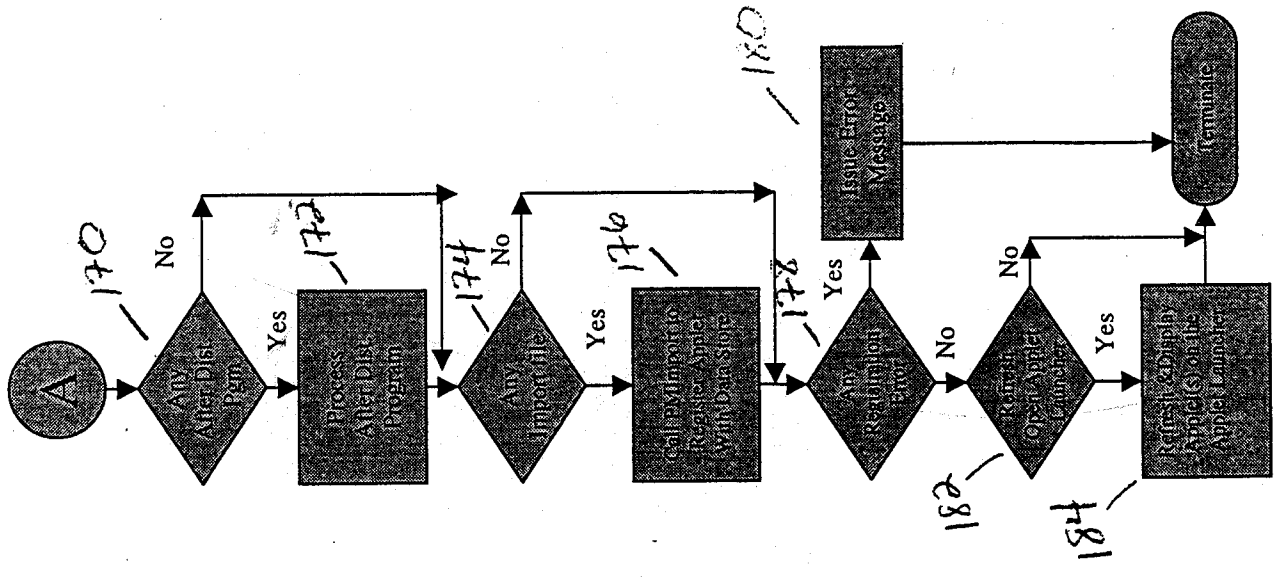
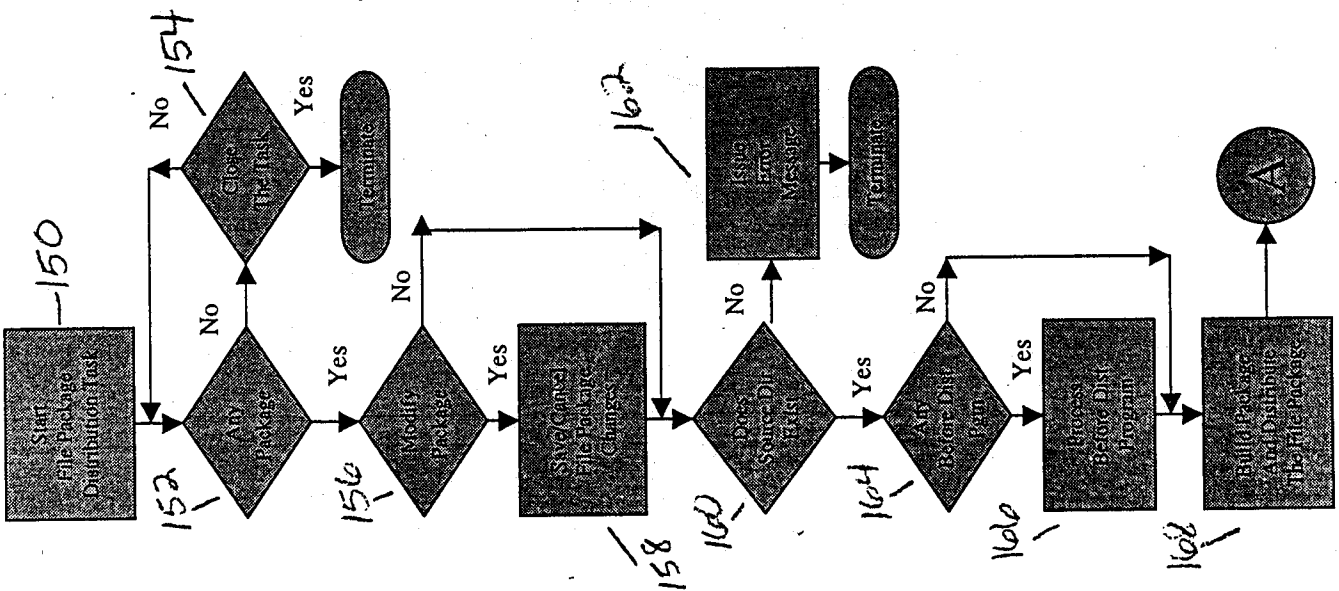


FIG. 8

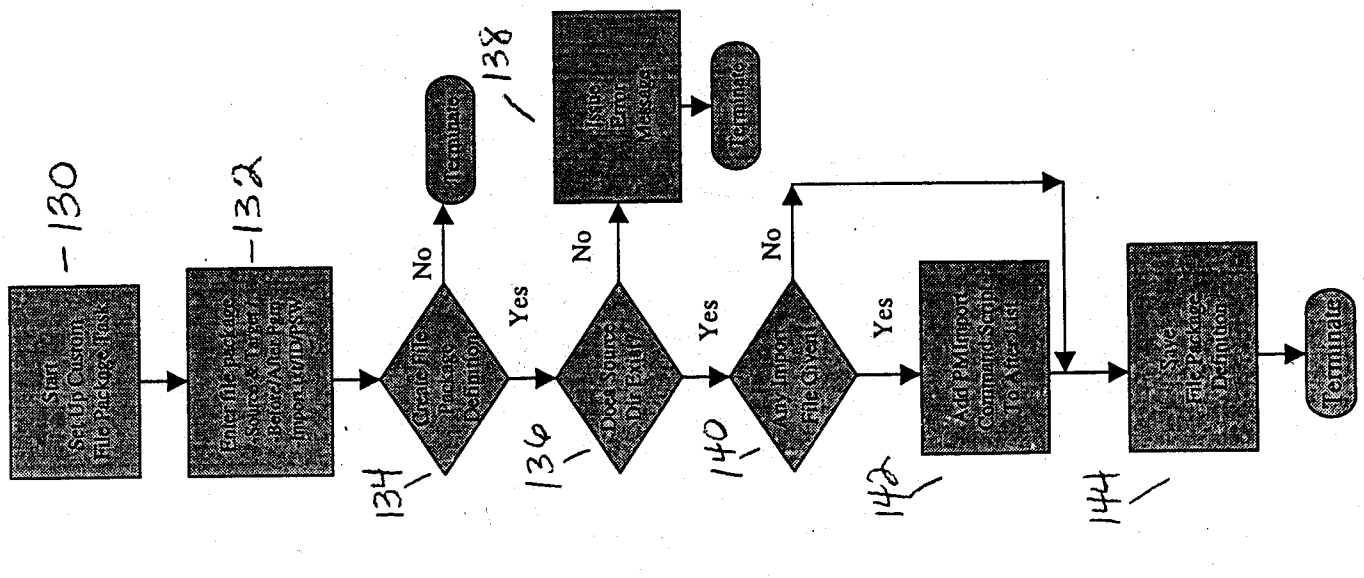
Register Package Contents



Distribute File Package



Create File Package Definition



**Set Up Custom File Package (ON\_DEMAND\_SERVER)**

**Custom File Package**

Host Name:

Source Path:

Package Name:

Target Path:

Program to Run before Distribution:

Program to Run after Distribution:

**On-Demand Server Profile Management**

Import File Name:

User ID:

User Password:

Log File Path:

FIG. 10



UNITED STATES DEPARTMENT OF COMMERCE  
 Patent and Trademark Office  
 Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
 Washington, D.C. 20231

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO./TITLE
09/211,528	12/14/98	CDX	557-130

020792  
 MYERS BIGEL SIBLEY AND SAJOVEC  
 P O BOX 37428  
 RALEIGH NC 27627

0262/0119

NOT ASSIGNED

2762

DATE MAILED:

01/19/99

**NOTICE TO FILE MISSING PARTS OF APPLICATION**  
**Filing Date Granted**

An Application Number and Filing Date have been assigned to this application. The items indicated below, however, are missing. Applicant is given TWO MONTHS FROM THE DATE OF THIS NOTICE within which to file all required items and pay fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). If any of items 1 or 3 through 5 are indicated as missing, the SURCHARGE set forth in 37 CFR 1.16(e) of  \$65.00 for a small entity in compliance with 37 CFR 1.27, or  \$130.00 for a non-small entity, must also be timely submitted in reply to this NOTICE to avoid abandonment.

If all required items on this form are filed within the period set above, the total amount owed by applicant as a  small entity (statement filed)  non-small entity is \$ 130-.

- 1. The statutory basic filing fee is:
  - missing.
  - insufficient.
 Applicant must submit \$ \_\_\_\_\_ to complete the basic filing fee and/or file a small entity statement claiming such status (37 CFR 1.27).
- 2. Additional claim fees of \$ \_\_\_\_\_, including any multiple dependent claim fees, are required.
  - \$ \_\_\_\_\_ for \_\_\_\_\_ independent claims over 3.
  - \$ \_\_\_\_\_ for \_\_\_\_\_ dependent claims over 20.
  - \$ \_\_\_\_\_ for multiple dependent claim surcharge.
 Applicant must either submit the additional claim fees or cancel additional claims for which fees are due.
- 3. The oath or declaration:
  - is missing or unexecuted.
  - does not cover the newly submitted items.
  - does not identify the application to which it applies.
  - does not include the city and state or foreign country of applicant's residence.
 An oath or declaration in compliance with 37 CFR 1.63, including residence information and identifying the application by the above Application Number and Filing Date is required.
- 4. The signature(s) to the oath or declaration is/are by a person other than inventor or person qualified under 37 CFR 1.42, 1.43 or 1.47.
 

A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- 5. The signature of the following joint inventor(s) is missing from the oath or declaration:

An oath or declaration in compliance with 37 CFR 1.63 listing the names of all inventors and signed by the omitted inventor(s), identifying this application by the above Application Number and Filing Date, is required.

A \$50.00 processing fee is required since your check was returned without payment (37 CFR 1.21(m)).  
 Your filing receipt was mailed in error because your check was returned without payment.

- 8. The application does not comply with the Sequence Rules.  
 See attached "Notice to Comply with Sequence Rules 37 CFR 1.821-1.825."
- 9. OTHER:

Direct the reply and any questions about this notice to "Attention: Box Missing Parts."

**A copy of this notice MUST be returned with the reply.**

D. Durham  
 Customer Service Center  
 Initial Patent Examination Division (703) 308-1202

PART 3 - OFFICE COPY

Sector #

Attorney's Docket No. 5577-130

PATENT

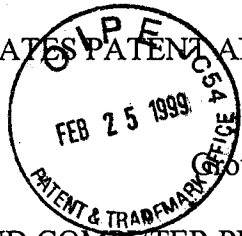
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Cox, et al.

Serial No.: 09/211,528

Filed: December 14, 1998

For: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR  
CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS  
ON A NETWORK



Group Art Unit: 2762

February 22, 1999

BOX MISSING PARTS

Assistant Commissioner for Patents

Washington, DC 20231

SUBMITTAL OF DECLARATION  
UNDER 37 C.F.R. § 1.63

Sir:

Enclosed is a Declaration and Power of Attorney for the above identified application which has been executed by the named inventors.

You are authorized to charge Deposit Account No. 09-0461 for the surcharge of \$130.00 under 37 C.F.R. § 1.16(e).

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Robert W. Glatz".

Robert W. Glatz

Registration No. 36,811

Myers Bigel Sibley & Sajovec  
Post Office Box 37428  
Raleigh, North Carolina 27627  
Telephone (919) 854-1400  
Facsimile (919) 854-1401

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: BOX MISSING PARTS, Assistant Commissioner For Patents, Washington, DC 20231, on February 22, 1999

A handwritten signature in black ink, appearing to read "Michele P. McMahan".

Michele P. McMahan

Date of Signature: February 22, 1999



#3

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

Attorney Docket No. 5577-130

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON A NETWORK

the specification of which

[ ] is attached hereto

OR

[ X ] was filed on December 14, 1998 as United States Application No. 09/211,528 or PCT International Application Number \_\_\_\_\_ and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37 Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application for patent or inventor's certificate, or of any PCT International application having a filing date before that of the application on which priority is claimed.

Table with 4 columns: None, Number, Country, MM/DD/YYYY Filed, and [ ] Yes [ ] No. It contains three rows for foreign priority claims.

**ENGLISH LANGUAGE DECLARATION CONTINUED**

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

None	
Application Number(s)	Filing Date (MM/DD/YYYY)
Application Number(s)	Filing Date (MM/DD/YYYY)

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) or § 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application (37 C.F.R. § 1.63(d)).

None		
Appln. Serial No.	Filing Date	Status Patented/Pending/Abandoned
Appln. Serial No.	Filing Date	Status Patented/Pending/Abandoned
Appln. Serial No.	Filing Date	Status Patented/Pending/Abandoned

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**ENGLISH LANGUAGE DECLARATION CONTINUED**

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following registered attorney(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

A. Bruce Clay  
Registration No. 32,121

Edward H. Duffield  
Registration No. 25,970

Gregory M. Doudnikoff  
Registration No. 32,847

Jerry W. Herndon  
Registration No. 27,901

Jeanine S. Ray-Yarletts  
Registration No. 39,808

Mitchell S. Bigel  
Registration No. 29,614

Timothy J. O'Sullivan  
Registration No. 35,632

Robert M. Meeks  
Registration No. 40,723

Robert W. Glatz  
Registration No. 36,811

Send correspondence to:

Timothy J. O'Sullivan  
Myers Bigel Sibley & Sajovec, P.A.  
Post Office Box 37428  
Raleigh, North Carolina 27627

Direct telephone calls to:

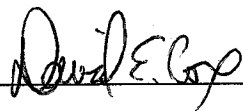
Robert W. Glatz  
(919) 854-1400

Facsimile:

(919) 854-1401

Full name of first (sole) inventor: **David E. Cox**

Inventor's  
Signature: \_\_\_\_\_



Date: 1/29/99

Residence:

Raleigh, North Carolina

Citizenship:

United States of America

Post Office Address:

2004 Lacebark Lane  
Raleigh, North Carolina 27613

ENGLISH LANGUAGE DECLARATION CONTINUED

Full name of second inventor: **Kent F. Hayes, Jr.**

Inventor's  
Signature:  Date: 2/16/99

Residence: Chapel Hill, North Carolina

Citizenship: United States of America

Post Office Address: 9309 Bracken Lane.  
Chapel Hill, North Carolina 27516

Full name of third inventor: **David B. Lindquist**

Inventor's  
Signature:  Date: 1/29/99

Residence: Raleigh, North Carolina

Citizenship: United States of America

Post Office Address: 4001 Lake Spring Court  
Raleigh, North Carolina 27613

Full name of fourth inventor: **John R. McGarvey**

Inventor's  
Signature:  Date: Feb 1, 1999

Residence: Apex, North Carolina

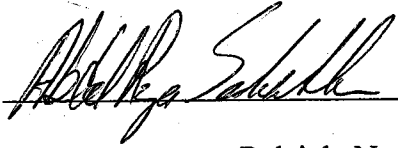
Citizenship: United States of America

Post Office Address: 7113 Eastridge Drive  
Apex, North Carolina 27502

**ENGLISH LANGUAGE DECLARATION CONTINUED**

Full name of fifth inventor: **Abdi Salahshour**

Inventor's  
Signature:



Date:

2/4/99

Residence:

Raleigh, North Carolina

Citizenship:

United States of America

Post Office Address:

2609 Jasper Lane  
Raleigh, North Carolina 27613



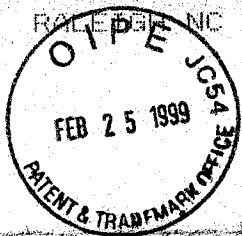
UNITED STATES DEPARTMENT OF COMMERCE  
 Patent and Trademark Office  
 Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
 Washington, D.C. 20231

#3

1/25/99

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO./TITLE
09/211,528	12/14/98	COX	D 5577-130

020792 0262/0119  
 MYERS BIGEL SIBLEY AND SAJDOVIC NOT ASSIGNED  
 P O BOX 37428  
 RALEIGH NC 27627 2762



DATE MAILED: 01/19/99

**NOTICE TO FILE MISSING PARTS OF APPLICATION**  
*Filing Date Granted*

An Application Number and Filing Date have been assigned to this application. The items indicated below, however, are missing. Applicant is given TWO MONTHS FROM THE DATE OF THIS NOTICE within which to file all required items and pay fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). If any of items 1 or 3 through 5 are indicated as missing, the SURCHARGE set forth in 37 CFR 1.16(e) of  \$65.00 for a small entity in compliance with 37 CFR 1.27, or  \$130.00 for a non-small entity, must also be timely submitted in reply to this NOTICE to avoid abandonment.

If all required items on this form are filed within the period set above, the total amount owed by applicant as a  small entity (statement filed)  non-small entity is \$ 130-

- 1. The statutory basic filing fee is:
  - missing.
  - insufficient.
 Applicant must submit \$ \_\_\_\_\_ to complete the basic filing fee and/or file a small entity statement claiming such status (37 CFR 1.27).
- 2. Additional claim fees of \$ \_\_\_\_\_, including any multiple dependent claim fees, are required.
  - \$ \_\_\_\_\_ for \_\_\_\_\_ independent claims over 3.
  - \$ \_\_\_\_\_ for \_\_\_\_\_ dependent claims over 20.
  - \$ \_\_\_\_\_ for multiple dependent claim surcharge.
 Applicant must either submit the additional claim fees or cancel additional claims for which fees are due.
- 3. The oath or declaration:
  - is missing or unexecuted.
  - does not cover the newly submitted items.
  - does not identify the application to which it applies.
  - does not include the city and state or foreign country of applicant's residence.
 An oath or declaration in compliance with 37 CFR 1.63, including residence information and identifying the application by the above Application Number and Filing Date is required.
- 4. The signature(s) to the oath or declaration is/are by a person other than inventor or person qualified under 37 CFR 1.42, 1.43 or 1.47. A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- 5. The signature of the following joint inventor(s) is missing from the oath or declaration:
 

\_\_\_\_\_

 An oath or declaration in compliance with 37 CFR 1.63 listing the names of all inventors and signed by the omitted inventor(s), identifying this application by the above Application Number and Filing Date, is required.
- 6. A \$50.00 processing fee is required since your check was returned without payment (37 CFR 1.21(m)).
- 7. Your filing receipt was mailed in error because your check was returned without payment.
- 8. The application does not comply with the Sequence Rules. See attached "Notice to Comply with Sequence Rules 37 CFR 1.821-1.825."
- 9. OTHER: \_\_\_\_\_

Direct the reply and any questions about this notice to "Attention: Box Missing Parts."

**A copy of this notice MUST be returned with the reply.**

D. Durham  
 Customer Service Center  
 Initial Patent Examination Division (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE

03/03/1999 CURRENCY 0000030 090461 09211520  
 130.00 CH  
 01 FC105

Attorney's Docket No. 5577-130

PATENT

018 2162  
#4

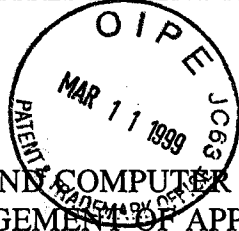
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Cox et al.

Serial No.: 09/211,528

Filed: December 14, 1998

For: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR  
CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON  
A NETWORK



March 8, 1999


Assistant Commissioner for Patents  
Washington, DC 20231

INFORMATION DISCLOSURE STATEMENT  
CITATION UNDER 37 C.F.R. § 1.97

Sir:

Attached is a list of documents on form PTO-1449 together with a copy of each identified document. It is requested that these documents be considered by the Examiner and officially made of record in accordance with the provisions of 37 C.F.R. § 1.97 and Section 609 of the MPEP.

Respectfully submitted,

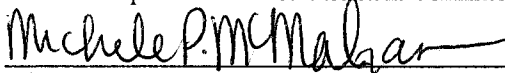
  
Robert W. Glatz  
Registration No. 36,811

RECEIVED  
MAR 16 1999  
Group 2700

Myers Bigel Sibley & Sajovec, P.A.  
Post Office Box 37428  
Raleigh, North Carolina 27627  
Tel (919) 854-1400  
Fax (919) 854-1401

CERTIFICATE OF MAILING

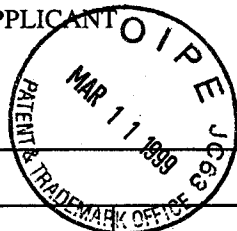
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, DC 20231, on March 8, 1999.



Michele P. McMahan

Date of Signature: March 8, 1999

<b>FORM PTO-1449</b> U.S. Department of Commerce Patent and Trademark Office				Attorney Docket Number 5577-130		Serial No. 09/211,528	
LIST OF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary)				Applicant Cox, et al.			
				Filing Date 12/14/98		Group <del>2762</del>	
U. S. PATENT DOCUMENTS							2158
Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate	
FOREIGN PATENT DOCUMENTS							
Document Number	Date	Country	Class	Subclass	Translation Yes   No		
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
FB	1	<a href="http://nf/pdc97/profiles_and_policies.htm">http://nf/pdc97/profiles_and_policies.htm</a> "Guide to Microsoft Windows NT 4.0 Profiles and Policies" Pages 1-76					
	2	<a href="http://www.ietf.org/html.charters/acap-charter.html">http://www.ietf.org/html.charters/acap-charter.html</a> "Application Configuration Access Protocol (acap)," 68 pages					
	3	IBM Network Station Manager for Windows NT Server 4.0, Chapter 5. Using the IBM Network Station Manager, Pages 5-1 to 5-15					
	4	<a href="http://www.software.ibm.com/os/warp/library/sq202822.htm">http://www.software.ibm.com/os/warp/library/sq202822.htm</a> , "WorkSpace on-Demand Handbook," Chapters 2.3.1; 6.2; 6.3; 6.3.1; 6.3.3; 6.5					
	5	<a href="http://www.triteal.com/SoftNC">http://www.triteal.com/SoftNC</a> , Java Desktop Environment from Tritéal," pages 1-2					
	6	<a href="http://java.sun.com/products/hot-javaviews/admin.html">http://java.sun.com/products/hot-javaviews/admin.html</a> , "HotJava Views," pages 1-24					
FB	7	<a href="http://esuite.lotus.com/eSuite/eSuite">http://esuite.lotus.com/eSuite/eSuite</a> , "The Right Work Environment for Network Centric Computing," 24 pages					



**RECEIVED**  
 MAR 16 1999  
 Group 2700

EXAMINER  
 \*EXAMINER

*[Signature]*

DATE CONSIDERED 3/20/01

Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.





**UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

RE

APPLICATION NO.	FILING DATE	FIRST-NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/211,528	12/14/98	COX	D 5577-130
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020792 TM02/0328  
 MYERS BIGEL SIBLEY & SAJOVEC  
 PO BOX 37428  
 RALEIGH NC 27627

EXAMINER

BACKER, F

ART UNIT	PAPER NUMBER
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2155

5

DATE MAILED:

03/28/01

2158

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

RE

le



**UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

RE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/211,528	12/14/98	COX	D 5577-130
------------	----------	-----	------------

020792 TM02/0328  
 MYERS BIGEL SIBLEY & SAJOVEC  
 PO BOX 37428  
 RALEIGH NC 27627

EXAMINER

ART UNIT	PAPER NUMBER
2155	5

DATE MAILED: 03/28/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

RE

<b>Office Action Summary</b>	Application No. 09/211,528	Applicant(s) COX ET AL.	
	Examiner Firmin Backer	Art Unit 2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 14 December 1998.
- 2a)  This action is **FINAL**.                      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 15-20 and 22 is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-14, 21 and 23 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved.
- 12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a)  All b)  Some \* c)  None of:
1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

**Attachment(s)**

- 15)  Notice of References Cited (PTO-892)
- 16)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 18)  Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 19)  Notice of Informal Patent Application (PTO-152)
- 20)  Other:

### DETAILED ACTION

This is in response to a letter for patent filed on December 14<sup>th</sup>, 1998 in which claims 1-23 are presented for examination. Claims 1-23 are pending in the letter.

#### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-14, 21, 23, drawn to application management, classified in class 710, subclass 33.
  - II. Claims 15-20, 22, drawn to distribution of application, classified in class 709, subclass 223.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because they are patentably distinct. The subcombination has separate utility such as management of application program and application distribution. Management of application could be application distribution. However, in this particular case, the inventive concept is management of application program which is patentably distinct from application distribution

Art Unit: 2155

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Robert W. Glatz on December 6th a provisional election was made with traverse to prosecute the invention of group 1, claims 1-14, 21, and 23. Affirmation of this election must be made by applicant in replying to this Office action. Claims 15-20, 22 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

*Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oh et al. (U.S. Patent 6,189,051) in view of Bladow et al. (U.S. Patent No. 6,115,040)

5. As per claim 1, Oh et al. teach a method for management of application programs on a network including a server (server, 500) and a client (client (550) comprising the steps of: installing a plurality of application programs at the server, receiving at the server a login request from a user at the client (see abstract, fig. 1, 5, 8, 9, column 3 line 46-4 line 51, 5 lines 24-40),

Art Unit: 2155

receiving at the server a selection of one of the plurality of application programs from the user desktop interface, and providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection (see abstract, fig 7, column 4 line 29-5 line 40). Oh et al fail to teach the inventive concept of establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorize. However, Bladow et al teach an inventive concept of establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorize (see fig. 3, 4, column 6 line 40-7 line 31, 16 lines 1-50). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Oh et al.'s inventive concept to include establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorize because this would have provide a flexible and modular approach to implementing each of the client applications as need arises and yet at the same time provide tightly controlled routine environment for the disparate client applications.

6. As per claim 2, Oh et al. teach a method further comprising maintaining application management information for the plurality of applications at the server, and a plurality of display

regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information (see abstract, fig. 1, 5, 8, 9, column 3 line 46-4 line 51, 5 lines 24-40).

7. As per claim 3, Oh et al. teach a method wherein the establishing a user desktop includes distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs (see abstract, fig. 1, 5, 8, 9, column 3 line 46-4 line 51, 5 lines 24-40).

8. As per claim 4, Oh et al. teach a method wherein the maintaining step includes the step of maintaining configurable user preference information for the plurality of application programs at the server and providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client (see abstract, fig. 1, 5, 8, 9, column 3 line 46-4 line 51, 5 lines 24-40).

9. As per claim 5, Oh et al. teach a method wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and updating the user preferences configurable by the user responsive to updates from the user and updating the user

preferences not configurable by the user responsive to updates from the administrator (see abstract, fig. 1, 5, 8, 9, column 3 line 46-4 line 51, 5 lines 24-40).

10. As per claim 6, Oh et al. teach a method wherein the application launcher programs are JAVATM applets and the user desktop interface is a JAVATM applet executed by a web browser (see abstract, fig. 1, 5, 8, 9, column 3 line 46-4 line 51, 5 lines 24-40).

11. As per claim 7, Oh et al. teach a method wherein establishing includes the steps of: configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface, and providing the user desktop interface and the associated information for the user desktop interface to the client for display (see abstract, fig 7, column 4 line 29-5 line 40).

12. As per claim 8, Oh et al. teach a method wherein configuring includes configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized (see abstract, fig 7, column 4 line 29-5 line 40).

13. As per claim 9, Oh et al. teach a method wherein receiving a selection is followed determining a license availability for the selected one of the plurality of application programs for the user and providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user (see abstract, fig. 1, 5, 8, 9, column 3 line 46-4 line 51, 5 lines 24-40)..



14. As per claim 10, Oh et al. teach a method wherein establishing a user desktop includes distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the step of determining a license availability includes the step carried out by the one of the application launcher programs associated with the selected one of the plurality of application programs of obtaining the license availability from a license management server (see abstract, fig 7, column 4 line 29-5 line 40)..

15. As per claim 11, Oh et al. teach a method wherein the license management server is the server (see abstract, fig 7, column 4 line 29-5 line 40)..

16. As per claim 12, Oh et al. teach a method wherein the plurality of application programs are installed on a network drive accessible to the server (see abstract, fig. 1, 5, 8, 9, column 3 line 46-4 line 51, 5 lines 24-40).

17. As per claim 13, Oh et al. teach a method further comprising receiving at the server event logging information from the instance of the selected one of the plurality of application programs (see abstract, fig. 1, 5, 8, 9, column 3 line 46-4 line 51, 5 lines 24-40)..

18. As per claim 14, Oh et al. teach a method further comprising providing the received event logging information to a network management server associated with the server (see abstract, fig. 1, 5, 8, 9, column 3 line 46-4 line 51, 5 lines 24-40).

19. As per claim 21, Oh et al. teach an application program management system for managing application programs on a network including a server (server, 500) and a client (client (550) comprising means for: installing a plurality of application programs at the server, receiving at the server a login request from a user at the client (see abstract, fig. 1, 5, 8, 9, column 3 line 46-4 line 51, 5 lines 24-40) receiving at the server a selection of one of the plurality of application programs from the user desktop interface, and providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection (see abstract, fig 7, column 4 line 29-5 line 40). Oh et al fail to teach the inventive concept of establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorize. However, Bladow et al teach an inventive concept of establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorize (see fig. 3, 4, column 6 line 40-7 line 31, 16 lines 1-50). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Oh et al.'s inventive concept to include establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorize because this would have provide a flexible and modular approach to implementing

Art Unit: 2155

each of the client applications as need arises and yet at the same time provide tightly controlled routine environment for the disparate client applications.

20. As per claim 23, Oh et al. teach a computer product for managing application programs on a network including a server (server, 500) and a client (client (550) comprising computer readable program code for: installing a plurality of application programs at the server, receiving at the server a login request from a user at the client (see abstract, fig. 1, 5, 8, 9, column 3 line 46-4 line 51, 5 lines 24-40) receiving at the server a selection of one of the plurality of application programs from the user desktop interface, and providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection (see abstract, fig 7, column 4 line 29-5 line 40). Oh et al fail to teach the inventive concept of establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorize. However, Bladow et al teach an inventive concept of establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorize (see fig. 3, 4, column 6 line 40-7 line 31, 16 lines 1-50). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Oh et al.'s inventive concept to include establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated

Application/Control Number: 09/211,528  
Art Unit: 2155

Page 10

with a set of the plurality of application programs installed at the server for which the user is authorize because this would have provide a flexible and modular approach to implementing each of the client applications as need arises and yet at the same time provide tightly controlled routine environment for the disparate client applications.

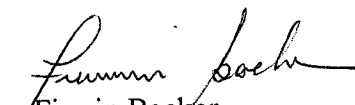
### *Conclusion*


21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (6,105,063, 6,195,432, 5,634,010, 5,933,601, 6,202,206, 5,809,251, 5,655,081, 6,098,067, 6,158,010).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Firmin Backer whose telephone number is 703-305-0624. The examiner can normally be reached on Mon-Thu 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sheikh Ayaz can be reached on 703-305-9648. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3718 for regular communications and 703-305-5352 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

  
Firmin Backer  
March 23, 2001

  
DAVID WILEY  
PRIMARY EXAMINER

FORM PTO-892		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		SERIAL NO. 09/211528	GROUP ART UNIT 2158 <del>2781</del>	ATTACHMENT TO PAPER NO.	5
NOTICE OF REFERENCES CITED				APPLICANT(S) COX ET AL.			
<b>U.S. PATENT DOCUMENTS</b>							
*		DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	A	6,189,051	2/2001	Oh et al.	710	33	
	B	6,105,063	8/2000	Hayes, Jr.	709	223	
	C	6,195,432	2/2001	Takahashi et al	380	9	
	D	5,634,010	5/1997	Ciscon et al.	709	223	
	E	5,933,601	8/1999	Fangshipt et al	709	223	
	F	6,202,206	3/2001	Dean et al	717	11	
	G	5,809,251	9/1998	May et al	709	223	
	H	5,655,081	8/1997	Bonnell et al.	709	202	
	I	6,098,067	8/2000	Erickson	707	10	
	J	6,158,010	12/2000	Moriconi et al.	713	201	
	K	6,115,040	9/2000	Bladow et al.	345	335	
<b>FOREIGN PATENT DOCUMENTS</b>							
*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS
	L						
	M						
	N						
	O						
	P						
	Q						
<b>OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)</b>							
	R						
	S						
	T						
	U						
EXAMINER Firmin Backer			DATE March 23, 2001				
* A copy of this reference is not being furnished with this office action. (See Manual of Patent Examining Procedure, section 707.05(a).)							

This file wrapper was thoroughly reviewed by our technical staff. Form PTO-948 is missing in the file.

This has been brought to your attention so that you will know it has not been overlooked.







FORM PTO-1449 U.S. Department of Commerce Patent and Trademark Office				Attorney Docket Number 5577-130		Serial No. 09/211,528	
LIST OF DOCUMENTS CITED BY APPLICANT  (Use several sheets if necessary)				Applicant Cox, et al.		#6	
				Filing Date 12/14/98		Group <del>2155</del> 2158	
		Number	Date	Country	Class	Subclass	Yes   No
DW	25	9850853	11/12/98	PCT	G06F	9/44	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
DW	26	"A Common Desktop Environment for Platforms Based on the UNIX Operating System," By B.E. Cripe, J.A. Brewster, and D.E. Laursen, Hewlett-Packard Journal, Vol. 47, No. 2, April 1, 1996, pp. 6-14					
DW	27	"Administration of Graphic User Interface and Multimedia Objects Using Cooperating Processing," IBM Technical Disclosure Bulletin, Vol. 37, No. 9, September 1, 1994, pp. 675-678					



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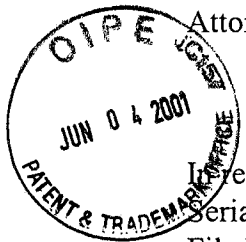
JUN 7 2001

Technology Center 2100

EXAMINER  
\*EXAMINER

DATE CONSIDERED

Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Attorney Docket No. 5577-130

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Cox et al.  
 Serial No.: 09/211,528  
 Filed: December 14, 1998

Group Art Unit: 2155  
 Examiner: Backer, F.

For: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR  
 CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON A  
 NETWORK

Date: May 31, 2001

**RECEIVED**  
 JUN 7 2001

Commissioner for Patents  
 Washington, DC 20231

Technology Center 2100

Sir:

Transmitted herewith is an Amendment in the above-identified patent application.

- Small entity status of this application under 37 C.F.R. §§ 1.9 and 1.27 has been established by a verified statement previously submitted.
- A verified statement to establish small entity status under 37 C.F.R. §§ 1.9 and 1.27 is enclosed.
- No additional fee is required.
- Other:

The fee has been calculated as shown below:

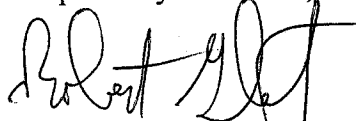
(COL. 1)		(COL. 2)	(COL. 3)	SMALL ENTITY		OTHER THAN A SMALL ENTITY	
	Claims Remaining After Amendment	Highest Number Previously Paid For	Present Extra	RATE	ADDIT. FEE	OR RATE	ADDIT. FEE
Total	42 -	23	= 19	x 09=	\$	x 18=	\$342.00
Indep	3-	3	= 0	x 40=	\$	x 80=	\$0
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEP. CLAIM				+135=	\$	+270=	\$
				Total Add. Fee \$		OR Total	\$342.00

\* If the entry in Col. 1 is less than the entry in Col. 2, write "0" in Col. 3.  
 \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, write "20" in this space.  
 \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, write "3" in this space. The "Highest Number Previously Paid For" (Total or Independent) is the highest number found from the equivalent box in Col. 1 of a prior Amendment or the number of claims originally filed.

In re: Cox et al.  
Serial No.: 09/211,528  
Filed: December 14, 1998  
Page 2 of 2

- Please charge Deposit Account No. 09-0461 in the amount of \$342.00.
- A check in the amount of \$\_\_\_\_\_ to cover the additional fee is enclosed.
- The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 50-0220.
- Any additional filing fees required under 37 C.F.R. § 1.16 for the presentation of extra claims.
- Any patent application processing fees under 37 C.F.R. § 1.17.

Respectfully submitted,

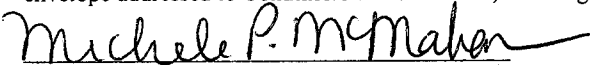


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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner for Patents, Washington, DC 20231, on May 31, 2001.



Michele P. McMahan  
Date of Signature: May 31, 2001

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JUN 7 2001



Attorney Docket No. 5577-130

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Technology Center 2100

Inventor: Cox et al.

Group Art Unit: 2155

Serial No.: 09/211,528

Examiner: Backer, F.

Filed: December 14, 1998

For: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON A NETWORK

#7/A  
LDS  
6-7-01  
entered

May 31, 2001

Commissioner for Patents  
Washington, DC 20231

**AMENDMENT**

Sir:

This Amendment is responsive to the Official Action ("Action") mailed March 28, 2001. As the amendments to the claims below are limited to the addition of new claims, Applicants respectfully submit that a version of the amendments with the changes marked is not required. Applicants affirm the election of the Group 1 claims as patentability of the claims in the respective groups does not depend on the patentability of claims in the other group.

**In The Claims:**

Please cancel Claims 15-20 and 22 without prejudice for purposes of filing the Group II claims in a divisional application.

Please add the following new claims:

~~14~~ <sup>15</sup> ~~21~~ (New) A system according to Claim ~~21~~ further comprising:  
means for maintaining application management information for the plurality of applications at the server; and  
wherein the means for establishing a user desktop includes means for including a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information.

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<sup>18</sup>/~~25~~. (New) A system according to Claim <sup>17</sup>/~~24~~ wherein the means for establishing a user desktop includes:

means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and  
wherein the means for receiving a selection includes means for receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs.

<sup>19</sup>/~~26~~. (New) A system according to Claim <sup>18</sup>/~~25~~ wherein the means for maintaining includes means for maintaining configurable user preference information for the plurality of application programs at the server and wherein the means for providing an instance includes means for providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client.

<sup>20</sup>/~~27~~. (New) A system according to Claim <sup>19</sup>/~~26~~ wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and further comprising means for updating the user preferences configurable by the user responsive to updates from the user and updating the user preferences not configurable by the user responsive to updates from the administrator.

<sup>21</sup>/~~28~~. (New) A system according to Claim <sup>18</sup>/~~25~~ wherein the application launcher programs are JAVA™ applets and the user desktop interface is a JAVA™ applet executed by a web browser.

<sup>22</sup>/~~29~~. (New) A system according to Claim <sup>15</sup>/~~21~~ wherein the means for establishing a user desktop includes;

means for configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface; and

43

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means for providing the user desktop interface and the associated information for the user desktop interface to the client for display.

<sup>23</sup>  
~~30~~. (New) A system according to Claim <sup>22</sup>~~29~~ wherein the means for configuring the user desktop includes means for configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized.

<sup>24</sup>  
~~31~~. (New) A system according to Claim <sup>15</sup>~~21~~ further comprising means for determining a license availability for the selected one of the plurality of application programs for the user and wherein the means for providing includes means for providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user.

<sup>25</sup>  
~~32~~. (New) A system according to Claim <sup>24</sup>~~31~~ wherein the means for establishing a user desktop includes means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and wherein the means for receiving a selection includes means for receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the means for determining a license availability includes means, associated with one of the application launcher programs associated with the selected one of the plurality of application programs, for obtaining the license availability from a license management server.

<sup>26</sup>  
~~33~~. (New) A system according to Claim <sup>25</sup>~~32~~ wherein the license management server is the server.

<sup>27</sup>  
~~34~~. (New) A system according to Claim <sup>15</sup>~~21~~ wherein the plurality of application programs are installed on a network drive accessible to the server.

44

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<sup>28</sup>/~~25~~. (New) A system according to Claim <sup>15</sup>/~~21~~ further comprising means for receiving at the server event logging information from the instance of the selected one of the plurality of application programs.

<sup>29</sup>/~~26~~. (New) A system according to Claim <sup>28</sup>/~~35~~ further comprising means for providing the received event logging information to a network management server associated with the server.

<sup>30</sup>/~~27~~. (New) A computer program product according to Claim <sup>16</sup>/~~23~~ further comprising:

computer readable program code means for maintaining application management information for the plurality of applications at the server; and

wherein the computer readable program code means for establishing a user desktop includes computer readable program code means for including a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information.

<sup>31</sup>/~~28~~. (New) A computer program product according to Claim <sup>30</sup>/~~37~~ wherein the computer readable program code means for establishing a user desktop includes:

computer readable program code means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and

wherein the computer readable program code means for receiving a selection includes computer readable program code means for receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs.

<sup>32</sup>/~~29~~. (New) A computer program product according to Claim <sup>31</sup>/~~38~~ wherein the computer readable program code means for maintaining includes computer readable program code means for maintaining configurable user preference information for the plurality of

45

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application programs at the server and wherein the computer readable program code means for providing an instance includes computer readable program code means for providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client.

<sup>33</sup>  
~~40~~. (New) A computer program product according to Claim ~~39~~<sup>32</sup> wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and further comprising computer readable program code means for updating the user preferences configurable by the user responsive to updates from the user and updating the user preferences not configurable by the user responsive to updates from the administrator.

A1 <sup>34</sup>  
~~41~~. (New) A computer program product according to Claim ~~38~~<sup>31</sup> wherein the application launcher programs are JAVA™ applets and the user desktop interface is a JAVA™ applet executed by a web browser.

<sup>35</sup>  
~~42~~. (New) A computer program product according to Claim ~~23~~<sup>16</sup> wherein the computer readable program code means for establishing a user desktop includes;  
computer readable program code means for configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface; and

computer readable program code means for providing the user desktop interface and the associated information for the user desktop interface to the client for display.

<sup>36</sup>  
~~43~~. (New) A computer program product according to Claim ~~42~~<sup>35</sup> wherein the computer readable program code means for configuring the user desktop includes computer readable program code means for configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized.



<sup>37</sup>  
~~44.~~ (New) A computer program product according to Claim <sup>16</sup>~~23~~ further comprising computer readable program code means for determining a license availability for the selected one of the plurality of application programs for the user and wherein the computer readable program code means for providing includes computer readable program code means for providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user.

<sup>38</sup>  
~~45.~~ (New) A computer program product according to Claim <sup>37</sup>~~44~~ wherein the computer readable program code means for establishing a user desktop includes computer readable program code means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and wherein the computer readable program code means for receiving a selection includes computer readable program code means for receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the computer readable program code means for determining a license availability includes computer readable program code means, associated with one of the application launcher programs associated with the selected one of the plurality of application programs, for obtaining the license availability from a license management server.

<sup>39</sup>  
~~46.~~ (New) A computer program product according to Claim <sup>38</sup>~~45~~ wherein the license management server is the server.

<sup>40</sup>  
~~47.~~ (New) A computer program product according to Claim <sup>16</sup>~~23~~ wherein the plurality of application programs are installed on a network drive accessible to the server.

<sup>41</sup>  
~~48.~~ (New) A computer program product according to Claim <sup>16</sup>~~23~~ further comprising computer readable program code means for receiving at the server event logging information from the instance of the selected one of the plurality of application programs.

47

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In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 7

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49.

(New) A computer program product according to Claim ~~48~~ further comprising  
computer readable program code means for providing the received event logging information  
to a network management server associated with the server. ↪

41

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### REMARKS

Applicants appreciate the thorough examination of the present application as is evidenced by the Action. All the pending claims stand rejected under 35 U.S.C. § 103 as being unpatentable over United States Patent No. 6,189,051 to Oh et al. ("Oh") in view of United States Patent No. 6,115,040 to Bladow et al. ("Bladow"). Applicants respectfully submit, however, that the claims are in condition for allowance, which is respectfully requested. The present invention and the references relied on in the Action will first be briefly discussed.

#### The Invention:

The present invention provides methods, systems and computer program products for management of application programs on a network including a server supporting client stations. The server provides applications on-demand to a user logging in to a client supported by the server. Mobility is provided to the user and hardware portability is provided by establishing a user desktop interface responsive to a login request which presents to the user a desktop screen through a web browser interface. The desktop accesses and downloads selected application programs from the server responsive to a request from the user, such as the selection of an icon associated with the application program which is displayed on the user desktop screen at the client. The application program is then provided from the server and executed at the client. The application program may further be customized to conform to the user's preferences and may also provide for license use management by determining license availability before initiating execution of the application program. Accordingly, applications are provided on-demand to users independent of the device used to access the server.

In other words, a variety of application programs can be maintained at the server, and an instance of a selected one of the application programs may be provided as needed to a user

48

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In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 8

logged onto a client device. The provided instance of the application may then be executed at the client device to process the request of the user. Thus, individual application programs are provided to the user as needed where they are executed at a client device rather than having the application program execute at the server responsive to a request from a user. Furthermore, a customized user interface desktop is provided at the client device which displays the applications the user is authorized to access.

**The Oh Reference:**

The Oh reference relates to systems and methods for manufacturing hard disk masters. The systems and methods described in Oh are directed to computer system manufacturing where programs need to be stored on different models of computers for sale to customers. More particularly, when "a computer system is sold to a consumer, the hard disk in which the programs are stored is installed therein. Therefore, it is necessary for a computer manufacturer to copy programs into the hard disk of the computer." (Oh, Col. 1, lines 29-32). As described by Oh, the known methods, which relied on CDs and diskettes for installation, were difficult to manage and included a high risk of errors due to the manual nature of the process. (Oh, Col. 1, lines 36-43). Thus, Oh proposed downloading the programs from a server computer to a client computer where a hard disk master is generated which is used "for copying a hard disk loaded in a computer system." (Oh, Col. 2, lines 10-18). Oh further recognized that the contents of the "hard disk master [may] differ according to the model" of the computer being manufactured. (Oh, Col. 2, lines 6-8). Thus, the system of Oh downloads selected programs and drivers from the server to the hard disk master manufacturing computer and executes an associated setup file provided by the server to generate the hard disk master. (Oh, Col. 4, line 62- Col. 5, line 6; Col. 5, lines 34-40).

**The Bladow Reference:**

The Bladow reference relates to a graphical user interface for web enabled applications. In particular, a system is provided for interfacing applications executing on a client to web server based applications resources. Log-in based security procedures are provided to control access to various server based resources by individual users. More particularly, users are provided a "home page 250 which is download after the authentication via the logon page. The home page 250 comprises icons 252a-h for each application services

In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 9

as well as an application tool bar 254 for invoking services." (Bladow, Col. 14, lines 46-49). However, the server based resources are merely accessed by transmission of an "HTTPS request" which is passed on to the server resource provider if the user is authorized to use the resource. (Bladow, Col. 7, line 46 to Col. 8, line 27). The server then provides the "service requested by the client." (Bladow, Col. 8, lines 30-38; Col. 9, lines 15-22). The data generated by the service at the server is then translated to a client format and returned to the requesting client. (Bladow, Col. 9, lines 22-33).

**The Claims Are Patentable Over the Cited References:**

Among other things, the Action asserts that Oh teaches "receiving at the server a selection of one of the plurality of application programs from the user desktop interface, and providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection." (Action, p. 4). Applicants submit that Oh provides no such disclosure or suggestion. Furthermore, Applicants submit that Oh cannot properly be combined with Bladow in the manner relied on by the Action.

With respect to the recitation in Claim 1 of "receiving at the server a selection of **one of the plurality of application programs** from the user desktop," there is no such disclosure or suggestion in Oh. In fact, the system of Oh, which is intended to allow creation of a hard disk master, requests all of the programs which are to be provided in the hard disk master. There would be no reason to request an individual program in the system of Oh as the object is to generate the entirety of the hard disk image which is to be placed on the hard disk of each of the computers being manufactured. Furthermore, no user desktop is needed to provide the selection as there is no need to designate only individual application programs to the server. Instead, all of the application programs associated with a particular hard disk master (which in turn may be used in the manufacture of a particular model of computer), are requested by the client computer, thus, requiring no such on demand request interface providing for selection of a single application program.

Furthermore, the present invention recites in Claim 1 that "an instance of the selected one of the plurality of application programs [is provided] to the client **for execution** responsive to the selection." In contrast, the programs provided from the server of Oh are


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In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 10

used to build a hard disk master, they are not executed. The hard disk master is, presumably, then used to write the hard disk of computers sold to customers who may ultimately execute the programs provided on the hard disk of their computers. In other words, Oh relates to an application programming environment in which applications are installed in advance and later run on individual computers, not to a client-server environment, such as recited in Claim 1, where instances of an application are provided to requesting users on demand only after users have logged in and had their authority to use a program verified.

Bladow fails to overcome these deficiencies of Oh as it describes an environment in which server resources accessed by an authorized user are executed at the server with the results returned to the client. (Bladow, Col. 9, lines 18-33). Bladow does not disclose or suggest providing an instance of such server resources to the client for execution by the client. Therefore, as various of the recitations of Claim 1 are not taught by any of the cited references, the pending rejection should be withdrawn. Claims 2-14 should also be allowed at least based on their dependency from Claim 1. Furthermore, Claims 21 and 23 are system and computer program product claims corresponding to method Claim 1 and are allowable for the same reasons discussed with reference to Claim 1.

The rejections should also be withdrawn as the Oh and Bladow references cannot properly be combined in the manner relied on by the Action. To establish a prima facie case of obviousness, the prior art reference or references when combined must teach or suggest *all* the recitations of the claim, **and** there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. § 2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. § 2143.01, citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). As recently emphasized by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be **clear and particular**, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). In an even more recent decision, the Court of Appeals for the Federal



In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 11

Circuit has stated that, to support combining or modifying references, there must be **particular** evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, **would have selected these components for combination in the manner claimed.** *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

Respectfully, the Action fails to meet the requirements for a showing of obviousness under § 103. First, as discussed above, the cited combination of references fails to teach all of the recitations of the claims. Furthermore, there is no basis for combining the hard disk master manufacturing system of Oh with the graphical user interface of Bladow. There is no motivation or incentive to provide a substantially "real time" selection of individual application programs as described in Bladow in the environment of Oh where a group of programs are selected to generate a hard disk master for a particular model of computer. As such, there is clearly no **particular** evidence in the cited art supporting the motivation alleged by the Action of providing "a flexible and modular approach to implementing each of the client applications as need arises." (Action, p. 4). Accordingly, the rejections should be withdrawn for at least these additional reasons.

#### **Various of the Dependent Claims Are Separately Patentable**

As discussed above, each of the dependent claims is patentable based on its dependence on Claim 1. In addition, various of the dependent claims are separately patentable based on the recitations therein. For example, contrary to the assertion of the Action, Oh does not teach distributing "application launcher programs associated with each of the set of the plurality of application programs" as recited in Claim 3. To the extent this rejection is maintained, Applicants respectfully request a citation by the Examiner of the portions of Oh relied on for this rejection as Applicants can find nothing in the portions of Oh cited in paragraph 7 of the Action on which the Examiner could be relying as support for the rejection of Claim 3. Claims 4-6 depend from Claim 3 and are likewise allowable for the reasons Claim 3 is allowable. Furthermore, as with the rejection of Claim 3, Applicants are unable to identify what discussion the Examiner is relying on for the recitations related to the "configurable user preference information" recited in Claim 4 and, thus, Applicants request clarification from the Examiner of the basis for such rejections if they are not withdrawn.

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In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 12

With respect to Claims 9-11, Applicants again can find no discussion of the "license availability" recitations of these Claims in the cited portions of Oh or in Bladow. While Bladow does discuss determining whether a user is authorized to access a resource, this is distinct from the recitations of these claims related to verifying license availability. For example, a user could be authorized to use an application but five instances of the application may already be executing and the server may only have a five concurrent user license. Thus, an authorized user could be denied an instance of a requested application because no license is available. (*See, e.g.*, Specification, p. 18, lines 1-9; p. 21, line 31 to p. 22, line 9). Accordingly, these claims are also patentable for at least these additional reasons.

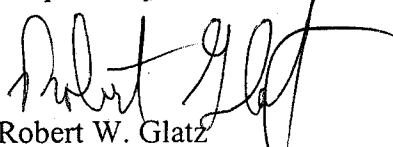
**The Newly Added Claims Are Patentable**

Newly added dependent Claims 24-36 are system claims depending on Claim 21 which correspond generally to Claims 2-14. Newly added dependent Claims 37-49 are computer program product claims depending on Claim 23 which correspond generally to Claims 2-14. Accordingly, these claims are patentable for the reasons discussed above with reference to Claims 2-14.

**Conclusion**

The outstanding rejections have all been addressed by the remarks above and the recitations of the pending claims are neither disclosed nor suggested by the cited combination of references. Accordingly, Applicants respectfully request allowance of the of the present application and passing the application to issue.

Respectfully submitted,



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In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 13



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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231, on May 31, 2001.

Michele P. McMahan

Michele P. McMahan  
Date of Signature: May 31, 2001

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**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

*MF*

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/211,528 12/14/98 COX

D 5577-130

020792 TM02/0813  
MYERS BIGEL SIBLEY & SAJOVEC  
PO BOX 37428  
RALEIGH NC 27627

EXAMINER

BACKER, E	
ART UNIT	PAPER NUMBER

2155  
DATE MAILED:

08/13/01

*8*

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

*SM*

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/211,528	COX ET AL.	
	Examiner	Art Unit	
	Firmin Backer	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 07 June 2001.
- 2a)  This action is FINAL.                      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-14,21 and 23-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-14,21 and 23-49 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved.
- 12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a)  All    b)  Some \*    c)  None of:
1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

**Attachment(s)**

- 15)  Notice of References Cited (PTO-892)
- 16)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 18)  Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 19)  Notice of Informal Patent Application (PTO-152)
- 20)  Other:

***Response to Amendment***

This is in response to an amendment file on June 4<sup>th</sup>, 2001 for letter for patent filed on December 14<sup>th</sup>, 1998, in which claims 1-23 were presented for examination. In the amendment, no claim has been amended, claims 15-20 and 22 have been canceled and claims 24-49 have been added to the letter. Claims 1-14, 21, 23-49 are pending in the letter.

***Response to Arguments***

1. Applicant's arguments with respect to claims 1-14, 21, 23-49 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-14, 21, 23-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rose (U.S. Patent 5,708,709) in view of Win et al. (U.S. Patent No. 6,182,142)
4. As per claim 1, 21 and 23, Rose teaches a method for management of application programs on a network including a server (*information server, 104*) and a client (*client, 102*) (*see fig 1*) comprising installing (*storing*) a plurality of application programs (*one or more*

*application programs, 138, 140, 142*) at the server (*see abstract, fig. 1, column 3 line 11-46*), establishing a user desktop interface (*user interface, 108*) at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions (*menu 192 on a display screen*) associated with a set of the plurality of application programs (*list of available application programs, 193*) installed at the server for which the user is authorized (*see fig 7 column 6 line 40-7 line 45*) receiving at the server a selection of one of the plurality of application programs from the user desktop interface (*see column line 61-7 line 26*), and providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection (*see column line 61-7 line 26*). Rose fails to teach the inventive concept of receiving at the server a login request from the user at the client. However, Win et al teach an inventive concept of receiving at the server a login request from the user at the client (*see abstract, column 3 lines 7-14*). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rose's inventive concept to include Winn et al's concept of receiving at the server a login request from the user at the client because this would have ensure that only authorized users are able to access the system thereby enhance the security of the system.

5. As per claim 2, 24, 37, Rose teaches a method comprising maintaining application management information for the plurality of applications at the server, and a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information (*see fig 7 column 6 line 40-7 line 45*).

6. As per claim 3, 25, 38, Rose teaches a method wherein the establishing a user desktop includes distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs (*see fig 7 column 6 line 40-7 line 45*).

7. As per claim 4, 26, 39, Rose teaches a method wherein the maintaining step includes the step of maintaining configurable user preference information for the plurality of application programs at the server and providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client (*see fig 7 column 6 line 40-7 line 45*).

8. As per claim 5, 27, 40, Rose teaches a method wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and updating the user preferences configurable by the user responsive to updates from the user and updating the user preferences not configurable by the user responsive to updates from the administrator (*see fig 7 column 6 line 40-7 line 45*).

9. As per claim 6, 28, 41, Rose teaches a method wherein the application launcher programs are JAVATM applets and the user desktop interface is a JAVATM applet executed by a web browser (*see fig 1, column 3 lines 29-4 line 17*).

10. As per claim 7, 29, 42, Rose teaches a method includes configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface, and providing the user desktop interface and the associated information for the user desktop interface to the client for display (*see fig 7 column 6 line 40-7 line 45*).

11. As per claim 8, 30, 43, Rose teaches a method wherein configuring includes configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized (*see fig 7 column 6 line 40-7 line 45*).

12. As per claim 9, 31, 44, Rose teaches a method wherein receiving a selection is followed determining a license availability for the selected one of the plurality of application programs for the user and providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user (*see fig 7 column 6 line 40-7 line 45*).

13. As per claim 10, 32, 45, Rose teaches a method wherein establishing a user desktop includes distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and receiving the

selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the step of determining a license availability includes the step carried out by the one of the application launcher programs associated with the selected one of the plurality of application programs of obtaining the license availability from a license management server (*see fig 7 column 6 line 40-7 line 45*).

14. As per claim 11, 33, 46, Rose teaches a method wherein the license management server is the server (*see fig 7 column 6 line 40-7 line 67*).

15. As per claim 12, 34, 47, Rose teaches a method wherein the plurality of application programs are installed on a network drive accessible to the server (*see fig 7 column 6 line 40-7 line 67*).

16. As per claim 13, 35, 48, Rose teaches a method further comprising receiving at the server event logging information from the instance of the selected one of the plurality of application programs (*see fig 7 column 6 line 40-7 line 45*).

17. As per claim 14, 36, 49, Rose teaches a method further comprising providing the received event logging information to a network management server associated with the server (*see column 5 lines 31-6 lines 18*).

Application/Control Number: 09/211,528  
Art Unit: 2155


Page 7

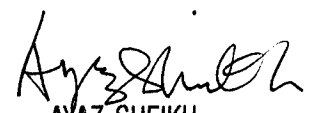
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Firmin Backer whose telephone number is 703-305-0624. The examiner can normally be reached on Mon-Thu 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sheikh Ayaz can be reached on 703-305-9648. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3718 for regular communications and 703-305-5352 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

  
Firmin Backer  
August 1, 2001

  
AYAZ SHEIKH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100



FORM PTO-892	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	SERIAL NO. 09/211528	GROUP ART UNIT 2158 2781	ATTACHMENT TO PAPER NO.
NOTICE OF REFERENCES CITED		APPLICANT(S) COX ET AL.		

U.S. PATENT DOCUMENTS

*	DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
A	5,708,709	1/1998	Rose	380	4	
B	6,182,142	1/2001	Win et al	709	229	
C						
D						
E						
F						
G						
H						
I						
J						
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FOREIGN PATENT DOCUMENTS

*	DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS
L						
M						
N						
O						
P						
Q						

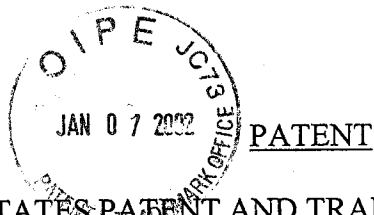
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

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EXAMINER Firmin Backer	DATE August 1, 2001	Form892ccs2106b
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\* A copy of this reference is not being furnished with this office action.  
(See Manual of Patent Examining Procedure, section 707.05(a).)

Attorney Docket No. 5577-130



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Cox et al.

Serial No.: 09/211,528

Filed: December 14, 1998

For: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR  
CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON A  
NETWORK

Group Art Unit: 2155

Examiner: Backer, F.

GAU 2155  
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#9  
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2-8-02

October 23, 2001

BOX NON-FEE AMENDMENT

Commissioner for Patents

Washington, DC 20231

### AMENDMENT

Sir:

This Response is submitted to respond to the Official Action ("Action") mailed August 13, 2001.

### REMARKS

Applicants appreciate the thorough examination of the present application as evidenced by the Action. All the pending claims stand rejected under 35 U.S.C. § 103 as being unpatentable over United States Patent No. 5,708,709 to Rose ("Rose") in view of United States Patent No. 6,182,142 to Win et al. ("Win"). Applicants respectfully submit, however, that the claims are in condition for allowance, which is respectfully requested. In particular, the cited references fail to teach or suggest, alone or in combination, establishing a "user desktop interface at the client associated with the user" where the user associated desktop displays regions associated with "a plurality of application programs at the server for which the user is authorized" as recited, for example, in Claim 1.

### The Present Invention:

The present invention provides methods, systems and computer program products for management of application programs on a network including a server supporting client stations. The server provides applications on-demand to a user logging in to a client supported by the server. Mobility is provided to the user and hardware portability is provided by establishing a user desktop interface responsive to a login request that presents to the user a desktop screen through a web browser interface. The desktop accesses and downloads

In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 2

selected application programs from the server responsive to a request from the user, such as the selection of an icon associated with the application program which is displayed on the user desktop screen at the client. An "instance of the selected" application program is then provided from the server for execution at the client. Thus, the application programs may be maintained at the server and provided to client's when needed for execution.

As defined in the specification of the present application:

the term **"application program" generally refers to the code associated with the underlying program functions, for example, Lotus Notes or a terminal emulator program.** However, it is to be understood that the application program will preferably be included as part of the application launcher which will further include the code associated with managing usage of the application program on a network according to the teachings of the present invention. Further it is to be understood that, as used herein, the term "application launcher program" may refer to the entire program provided by a software vendor or to merely a portion thereof distributed to a client to perform particular operations. **For example, the application launcher program distributed to initially populate the user desktop preferably does not include the code associated with the underlying application program** and obtaining preferences which may only be distributed to the client later when execution of the application program is requested. The application launcher program distributed to populate the user desktop may only include a URL and an associated ICON and, possibly, code to allow obtaining of user identification and password information. Memory usage on the client stations may thereby be limited.

(Specification, pp. 22-23)(emphasis added). Thus, the "application program" is an application level software program, such as Lotus Notes, while the "application launcher program" is provided to "initially populate the user desktop" and need not include the application program code. In other words, the application launcher program interacts with the desktop, such as a user browser interface, while an instance of the application program is requested through the desktop but executes locally at the client as a separate application from the browser interface. For example, Lotus Notes would not execute within the browser window.

The present invention may, therefore, be used so that a variety of application programs can be maintained at the server, and an instance of a selected one of the application programs may be provided as needed to a user logged onto a client device. The provided instance of the application may then be executed at the client device to process the request of

In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 3

the user. Thus, individual application programs are provided to the user as needed (on-demand) where they are executed at a client device rather than having the application program execute at the server responsive to a request from a user. Furthermore, a customized user interface desktop is provided at the client device, which displays the applications the user is authorized to access.

**Claims 1, 21 and 23 Are Patentable Over the Cited References:**

The rejections of independent Claims 1, 21 and 23 assert that Rose teaches all of the recitations of the claims except "the inventive concept of receiving at the server a login request from the user at the client." (Action, p. 3). However, the rejections rely on Win as teaching "receiving at the server a login request from the user at the client." (Action, p. 3). Applicants submit that Rose does not teach or suggest a "user desktop **associated with the user.**" Applicants further submit that Win does not teach or suggest such a user desktop include "a plurality of display regions associated with a set of the plurality of **application programs** installed at the server for which the user is authorized." Furthermore, the Rose and Win references cannot properly be combined to arrive at the present invention in light of the different problems addressed by these references and the lack of motivation for the combination.

Rose is directed to managed distribution of licensed application programs stored on a server where the server "maintains control over the program even after the program has been distributed to a client computer." (Rose, Abstract). As described in Rose, for example, with reference to Figure 2, trial versions of application programs may be selected for downloading from the server to a client through a browser interface. (Rose, Col. 4, lines 10-17). In other words, Figure 2 illustrates a display screen at the client showing application programs available for downloading from the server. A selected trial version is then prepared, for downloading to the client, which includes encryption and header information used for license and usage control after delivery to the client. (Rose, Col. 5, lines 19-52).

The rejections of Claim 1 primarily rely on Figure 7 and the associated description in Rose as teaching the present invention. However, as is clearly stated in Rose, Figure 7 displays application programs "downloaded to and stored on client computer 102." (Rose,

In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 4

Col. 6, lines 41-42). A selection of a program from the display of Figure 7 of Rose is a selection of a locally stored program for execution as contrasted with the selection of an application program for downloading from a server as illustrated in Figure 2 of Rose. Thus, a selection of an application program through Figure 7 of Rose does not result in the server "providing an instance of the selected one of the plurality of application programs to the client for execution" as recited in Claim 1. Furthermore, neither of the displays of Figures 2 or 7 of Rose are "associated with the user responsive to the login request from the user." While the display of Figure 2 of Rose is established at the client by the server responsive to a browser request from the client, it is simply a download options window not specific to a particular user. The download options window is also not established responsive to a login request as acknowledged by the Written Opinion. The display of Figure 7 of Rose is directed to local (client) resident application programs and a selection from the display of Figure 7 does not initiate "providing an instance of the selected one of the plurality of application programs to the client for execution" as the application programs are client resident at the time of the request. Thus, Claims 1, 21 and 23, and the claims that depend therefrom, should be allowed for at least these reasons.

The deficiencies of Rose are not overcome by Win. Win relates to "controlling access to information resources," not client-server environment on-demand application program management. (*See Win, Abstract*). The managed resources are defined in Win as follows:

A Resource is a source of information, identified by a Uniform Resource Locator (URL) and published by a Web server either in a static file formatted using Hypertext Markup Language (HML) or in a dynamically generated page created by a CGI-based program. Examples of resources include a Web page, a complete Web site, a Web-enabled database, and an applet.

(Win, Col. 5, lines 21-27). Thus, the "resources" managed by Win are not "application programs" as that term is defined in the present application in the excerpt reproduced above. Similarly, no user desktop interface that includes "a plurality of display regions associated with a set of the plurality of application programs" is taught or suggested by Win. It follows that no selection received at the server of such an application program and no "providing an instance of the selected" application program "to the client for execution" is taught or suggested by Win. Instead, the only resource selected and provided in Win is a display for

In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 5

the user, such as a static HTML file or a "dynamically generated page created by a CGI-based program" of the server. (Win, Col. 5, lines 21-27). Therefore Claims 1, 21, 23 and the claims that depend from them are patentable for at least these reasons.

The rejections should also be withdrawn as the Rose and Win references cannot properly be combined in the manner relied on by the Action. To establish a prima facie case of obviousness, the prior art reference or references when combined must teach or suggest *all* the recitations of the claim, **and** there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. § 2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. § 2143.01, citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). As recently emphasized by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be **clear and particular**, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). In an even more recent decision, the Court of Appeals for the Federal Circuit has stated that, to support combining or modifying references, there must be **particular** evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, **would have selected these components for combination in the manner claimed**. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

Respectfully, the Action fails to meet the requirements for a showing of obviousness under § 103. First, as discussed above, the cited combination of references fails to teach all of the recitations of the claims. Furthermore, there is no basis for combining the methods and system for controlled downloading of trial versions of programs described in Rose with the resource access management teachings of Win. This is particularly true as they are both directed to distinct problems from the client-server application management environment of the present invention. Thus, while Rose does relate to application program distribution from a server, such operations are for providing trial versions to be repeatedly executed at a client.

In fact, the encryption and application builder aspects advanced as the invention in

In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 6

Rose are not even relevant to the environment of the present invention where instances of the application programs are provided from a server "on-demand" each time execution is requested by a user. Rose is, instead, merely a distribution approach for client resident programs and one of skill in the art would not look to a reference directed to the problems of such an environment for direction in the distinct art of server based "on-demand" application programs. Win does not even relate to distribution of application programs but merely to control of access to server based resources. Thus, there is no basis to combine Win and Rose to arrive at the present invention. Accordingly, the rejections should be withdrawn for at least these additional reasons.

#### **Various of the Dependent Claims Are Separately Patentable**

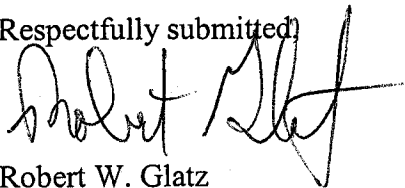
As discussed above, each of the dependent claims is patentable based on its dependence on Claim 1, 21 or 23. In addition, various of the dependent claims are separately patentable based on the recitations therein. For example, contrary to the assertion of the Action, Rose does not teach distributing "application launcher programs associated with each of the set of the plurality of application programs" as recited in Claims 3, 25 and 38. (*See also*, claims 10-11 and the corresponding system and computer program product claims). To the extent this rejection is maintained, Applicants respectfully request an explanation from the Examiner of how the portions of Rose relied on for this rejection teach the recited aspects of Claim 3 as Applicants can find nothing in the portions of Rose cited in paragraph 7 of the Action on which the Examiner could be relying as support for the rejection of Claims 3, 25 and 38. Claims 4-6 depend from Claim 3 and are likewise allowable for the reasons Claim 3 is allowable as are the corresponding system and computer program product claims. Furthermore, as with the rejection of Claims 3, 25 and 38, Applicants are unable to identify what discussion the Examiner is relying on for the recitations related to the "configurable user preference information" recited in Claims 4, 26 and 39 and, thus, Applicants request clarification from the Examiner of how Rose teaches these aspects of the claimed invention if the rejections are not withdrawn. Accordingly, these claims are also patentable for at least these additional reasons.

In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 7

**Conclusion**

The outstanding rejections have all been addressed by the remarks above and the recitations of the pending claims are neither disclosed nor suggested by the cited combination of references. Accordingly, Applicants respectfully request allowance of the the present application and passing the application to issue.

Respectfully submitted,



Robert W. Glatz  
Registration No. 36,811  
Attorney for Applicant

Correspondence Address:

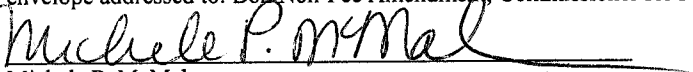


20792

PATENT TRADEMARK OFFICE

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Bon Non-Fee Amendment, Commissioner for Patents, Washington, DC 20231, on October 23, 2001.



Michele P. McMahan

Date of Signature: October 23, 2001  
218342





UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
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Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/211,528	12/14/1998	DAVID E. COX	5577-130	9791

20792 7590 02/22/2002

MYERS BIGEL SIBLEY & SAJOVEC  
PO BOX 37428  
RALEIGH, NC 27627

EXAMINER

BACKER, FIRMIN

ART UNIT PAPER NUMBER

2155

10

DATE MAILED: 02/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/211,528

Applicant(s)

COX ET AL.

Examiner

Firmin Backer

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 08 February 2002.
- 2a)  This action is **FINAL**.                      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-14,21 and 23-49 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-14,21 and 23-49 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved.
- 12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
  - a)  All    b)  Some \*    c)  None of:
    - 1.  Certified copies of the priority documents have been received.
    - 2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

**Attachment(s)**

- 15)  Notice of References Cited (PTO-892)
- 16)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 18)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19)  Notice of Informal Patent Application (PTO-152)
- 20)  Other:

***Response to Request for Reconsideration***

This is in response to a request for reconsideration file February 8<sup>th</sup>, 2002. Claims 1-14, 21, 23-49 are being reconsidered in this action.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14, 21, 23-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rose (U.S. Patent 5,708,709) in view of Win et al. (U.S. Patent No. 6,182,142)

3. As per claim 1, 21 and 23, Rose teaches a method for management of application programs on a network including a server (*information server, 104*) and a client (*client, 102*) (*see fig 1*) comprising installing (*storing*) a plurality of application programs (*one or more application programs, 138, 140, 142*) at the server (*see abstract, fig. 1, column 3 line 11-46*), establishing a user desktop interface (*user interface, 108*) at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions (*menu 192 on a display screen*) associated with a set of the plurality of application programs (*list of available application programs, 193*) installed at the server for which the user is authorized (*see fig 7 column 6 line 40-7 line 45*) receiving at the server a

selection of one of the plurality of application programs from the user desktop interface (*see column line 61-7 line 26*), and providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection (*see column line 61-7 line 26*). Rose fails to teach the inventive concept of receiving at the server a login request from the user at the client. However, Win et al teach an inventive concept of receiving at the server a login request from the user at the client (*see abstract, column 3 lines 7-14*). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rose's inventive concept to include Winn et al's concept of receiving at the server a login request from the user at the client because this would have ensure that only authorized users are able to access the system thereby enhance the security of the system.

4. As per claim 2, 24, 37, Rose teaches a method comprising maintaining application management information for the plurality of applications at the server, and a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information (*see fig 7 column 6 line 40-7 line 45*).

5. As per claim 3, 25, 38, Rose teaches a method wherein the establishing a user desktop includes distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs (*see fig 7 column 6 line 40-7 line 45*).

6. As per claim 4, 26, 39, Rose teaches a method wherein the maintaining step includes the step of maintaining configurable user preference information for the plurality of application programs at the server and providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client (*see fig 7 column 6 line 40-7 line 45*).

7. As per claim 5, 27, 40, Rose teaches a method wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and updating the user preferences configurable by the user responsive to updates from the user and updating the user preferences not configurable by the user responsive to updates from the administrator (*see fig 7 column 6 line 40-7 line 45*).

8. As per claim 6, 28, 41, Rose teaches a method wherein the application launcher programs are JAVATM applets and the user desktop interface is a JAVATM applet executed by a web browser (*see fig 1, column 3 lines 29-4 line 17*).

9. As per claim 7, 29, 42, Rose teaches a method includes configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface, and providing the user desktop interface and the associated information for the user desktop interface to the client for display (*see fig 7 column 6 line 40-7 line 45*).

10. As per claim 8, 30, 43, Rose teaches a method wherein configuring includes configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized (*see fig 7 column 6 line 40-7 line 45*).

11. As per claim 9, 31, 44, Rose teaches a method wherein receiving a selection is followed determining a license availability for the selected one of the plurality of application programs for the user and providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user (*see fig 7 column 6 line 40-7 line 45*).

12. As per claim 10, 32, 45, Rose teaches a method wherein establishing a user desktop includes distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the step of determining a license availability includes the step carried out by the one of the application launcher programs associated with the selected one of the plurality of application programs of obtaining the license availability from a license management server (*see fig 7 column 6 line 40-7 line 45*).

13. As per claim 11, 33, 46, Rose teaches a method wherein the license management server is the server (*see fig 7 column 6 line 40-7 line 67*).

Art Unit: 2155

14. As per claim 12, 34, 47, Rose teaches a method wherein the plurality of application programs are installed on a network drive accessible to the server (*see fig 7 column 6 line 40-7 line 67*).

15. As per claim 13, 35, 48, Rose teaches a method further comprising receiving at the server event logging information from the instance of the selected one of the plurality of application programs (*see fig 7 column 6 line 40-7 line 45*).

16. As per claim 14, 36, 49, Rose teaches a method further comprising providing the received event logging information to a network management server associated with the server (*see column 5 lines 31-6 lines 18*).

#### ***Response to Arguments***

17. Applicant's arguments filed on February 8<sup>th</sup>, 2002 have been fully considered but they are not persuasive.

- a. Applicant argues that the prior arts (Rose and Winn) taken alone or in combination fail to teach establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a plurality of application programs at the server for which the user is authorized. Examiner respectfully disagrees with applicant characterization of the prior arts' inventive concept. Examiner asserts that the prior art taken alone or in combination teach the above inventive concept. In fact Winn clearly disclosed in the abstract an inventive concept of using a method for

Art Unit: 2155

controlling access to information resources, a single secure sign-on gives the user access to authorized resources, based on the user's role in the organization. The information resources are stored on a protected server. A user of a client or browser logs in to the system. A runtime module on the protected server receives the login request and intercepts all other request by the client to use a resource. The runtime module connects to an access server that can determine whether a particular user is authentic and which resources the user is authorized to access. User information is associated with roles and functional groups of an organization to which the user belongs; the roles are associated with access privileges. The access server connects to a registry server that stores information about users, roles, functional groups, resources, and associations among them. The access server and registry server exchange encrypted information that authorized the user to use the resource. The access server passes encrypted tokens that define the user's roles and authorization rights to the browser or client, which stores the tokens in memory. *The user is presented with a customized display showing only those resources (application program) that the user may access.* Applicants also argue that the resources teach in Winn inventive concept is not application program as disclose in their inventive concept. Examiner respectfully disagrees with applicant. Resources in the art of computer can be broadly defined to include application program.

#### *Conclusion*

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



Application/Control Number: 09/211,528  
Art Unit: 2155


Page 8

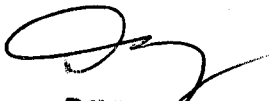
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Firmin Backer whose telephone number is 703-305-0624. The examiner can normally be reached on Mon-Thu 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sheikh Ayaz can be reached on 703-305-9648. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3718 for regular communications and 703-305-5352 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

  
Firmin Backer  
February 19, 2002

  
DAVID WILEY  
PRIMARY EXAMINER

#16/IDS

Attorney's Docket No. 5577-130

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Official

In re: Cox et al.  
Serial No.: 09/211,528  
Filed: December 14, 1998

Group Art Unit: 2155  
Examiner: Backer, F.

RECEIVED  
5/31/02

For: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR  
CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON  
A NETWORK

May 31, 2001

Commissioner for Patents  
Washington, DC 20231

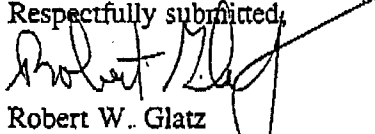
INFORMATION DISCLOSURE STATEMENT  
CITATION UNDER 37 C.F.R. § 1.97

Sir:

Attached is a list of documents on form PTO-1449 together with a copy of each identified document. It is requested that these documents be considered by the Examiner and officially made of record in accordance with the provisions of 37 C.F.R. § 1.97 and Section 609 of the MPEP.

Please charge Deposit Account No. 09-0461 the fee of \$240.00 as specified in 37 C.F.R. § 1.17(p). The Commissioner is authorized to charge any additional fee, or credit any refund, to our Deposit Account No. 09-0461.


Respectfully submitted,

  
Robert W. Glatz  
Registration No. 36,811

Myers Bigel Sibley & Sajovec, P.A.  
Post Office Box 37428  
Raleigh, North Carolina 27627  
Tel (919) 854-1400  
Fax (919) 854-1401

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231, on May 31, 2001.



Michele P. McMahan  
Date of Signature: May 31, 2001

FORM PTO-1449 U.S. Department of Commerce Patent and Trademark Office				Attorney Docket Number 5577-130		Serial No. 09/211,528	
LIST OF DOCUMENTS CITED BY APPLICANT  (Use several sheets if necessary)				Applicant Cox, et al.			
				Filing Date 12/14/98		Group <del>2155</del> 2158	
U. S. PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
<i>Qu</i>	1	6,105,066	8/2000	Hayes, Jr.	709	226	
	2	6,108,712	8/2000	Hayes, Jr.	709	246	
	3	6,105,069	8/2000	Franklin et al.	709	229	
	4	5,745,879	4/98	Wyman	705	1	
	5	6,175,363	1/01	Williams et al.	345	334	
	6	5,848,243	12/98	Kulkarni et al	709	224	
	7	5,911,066	6/99	Williams et al.	709	300	
	8	6,175,832	1/01	Luzzi et al.	707	10	
	9	5,680,615	10/97	Marlin et al.	707	103	
	10	5,875,327	2/99	Brandt et al.	713	1	
	11	6,070,190	5/00	Reps et al.	709	224	
	12	6,105,063	8/00	Hayes, Jr.	709	223	
	13	5,440,739	8/95	Beck et al.	70-	221	
	14	5,748,896	5/5/98	Daly et al.	709	223	
	15	5,881,236	3/9/99	Dickey	709	221	
	16	5,845,077	12/1/98	Fawcett	709	221	
	17	5,778,368	7/7/98	Hogan et al.	707	10	
	18	5,263,165	11/93	Janis	395	725	
	19	5,689,709	11/97	Regnier et al.	709	302	
	20	5,764,887	6/98	Kells et al.	713	200	
	21	5,771,354	11/93	Crawford	709	229	
	22	5,813,009	7/95	Johnson et al.	707	100	
	23	5,554,979	9/10/96	Kohar et al.	340	825.72	
	24	6,192,414	2/20/01	Horn	709	239	
FOREIGN PATENT DOCUMENTS							
		Document					Translation

EXAMINER

DATE CONSIDERED

\*EXAMINER Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if Received from <919 854 1401> at 3/25/02 1:49:30 PM Eastern Standard Time include copy of this form with next communication to applicant.

<b>FORM PTO-1449 U.S. Department of Commerce Patent and Trademark Office</b>				<b>Attorney Docket Number</b> 5577-130		<b>Serial No.</b> 09/211,528	
<b>LIST OF DOCUMENTS CITED BY APPLICANT</b> (Use several sheets if necessary).				<b>Applicant</b> Cox, et al.			
				<b>Filing Date</b> 12/14/98		<b>Group</b> 2155	
		<b>Number</b>	<b>Date</b>	<b>Country</b>	<b>Class</b>	<b>Subclass</b>	<b>Yes   No</b>
<i>Q</i>	25	9850853	11/12/98	PCT	G06F	9/44	
<b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)</b>							
<i>Q</i>	26	"A Common Desktop Environment for Platforms Based on the UNIX Operating System," By B.E. Cripe, J.A. Brewster, and D.E. Laursen, Hewlett-Packard Journal, Vol. 47, No. 2, April 1, 1996, pp. 6-14					
<i>Q</i>	27	"Administration of Graphic User Interface and Multimedia Objects Using Cooperating Processing," IBM Technical Disclosure Bulletin, Vol. 37, No. 9, September 1, 1994, pp. 675-678					

EXAMINER

*[Signature]*

DATE CONSIDERED

*[Signature]*

\*EXAMINER Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if Received from <919 854 1401> at 3/25/02 1:49:30 PM [Eastern Standard Time] include copy of this form with next communication to applicant.

Official  
 RECEIVED  
 3/25/02  
 #14/ky  
 (NE)  
 3-28-02

**RESPONSE UNDER 37 C.F.R. 1.116 - EXPEDITED  
 PROCEDURE - EXAMINING GROUP 2155**

Attorney Docket No. 5577-130

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Cox et al.

Group Art Unit: 2155

Serial No.: 09/211,528

Examiner: Backer, F.

Filed: December 14, 1998

Confirmation No.: 9791

For: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR  
 CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON A  
 NETWORK

March 25, 2002

BOX AF  
 Commissioner for Patents  
 Washington, DC 20231

**RESPONSE AFTER FINAL**

Sir:

This Response is submitted to respond to the Final Official Action ("Action") mailed February 22, 2002.

**REMARKS**

Applicants appreciate the thorough examination of the present application as evidenced by the Action. All the pending claims stand rejected under 35 U.S.C. § 103 as being unpatentable over United States Patent No. 5,708,709 to Rose ("Rose") in view of United States Patent No. 6,182,142 to Win et al. ("Win"). The rejections appear to be identical to those presented in the Official Action mailed August 13, 2001.

In the interest of brevity, Applicants will not repeat each of the arguments presented in Applicants' October 23, 2001 response, however, so as to assure that a complete response is provided, Applicants' October 23, 2001 response is incorporated by reference herein in its entirety. Thus, Applicants will focus the present response on the Final Official Action's "Response to Arguments" section.

**The IDS Submitted May 31, 2001**

In reviewing this file in preparation for responding to the Action, Applicants note that they do not have a copy of the PTO-1449 submitted on May 31, 2001 showing consideration of the references therein by the Examiner. A copy of the PTO-1449 and the stamped

In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 2

postcard showing receipt of the PTO-1449 and 27 references submitted therewith by the Patent Office on June 4, 2001 is attached to this response for the Examiner's convenience. Applicants request that the Examiner provide Applicants a copy of the PTO-1449 showing consideration by the Examiner of all the listed references at the Examiner's earliest convenience to insure listing of such references on any patent that may issue from the present application.

**Win Does Not Disclose Control of Access to Application Programs:**

The present invention provides methods, systems and computer program products for management of application programs on a network including a server supporting client stations. The server provides applications on-demand to a user logging in to a client supported by the server. Mobility is provided to the user and hardware portability is provided by establishing a user desktop interface responsive to a login request that presents to the user a desktop screen through a web browser interface. The desktop accesses and downloads selected application programs from the server responsive to a request from the user, such as the selection of an icon associated with the application program which is displayed on the user desktop screen at the client. An "instance of the selected" application program is then provided from the server for execution at the client. Thus, the application programs may be maintained at the server and provided to clients when needed for execution.

Based on the Response to Arguments section of the Action, which only discusses Win, it appears that the Examiner agrees with Applicants that an "application program," as that term is used in the claims, is an application level software program, such as Lotus Notes, while the "application launcher program" is provided to "initially populate the user desktop" and need not include the application program code. In other words, the application launcher program interacts with the desktop, such as a user browser interface, while an instance of the application program is requested through the desktop but executes locally at the client as a separate application from the browser interface.

In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 3

Despite this apparent agreement, the Examiner continues to assert that Win discloses that the "user is presented with a customized display showing only those resources (application program) that the user may access." (Action, p. 7)(emphasis in original). The Action further states that the Examiner disagrees with Applicants that the "Winn inventive concept is not application program as disclose [sic] in their inventive concept." (Action, p. 7).

Applicants again submit that Win does not teach or suggest, among other things, such a user desktop including "a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized." Win relates to "controlling access to information resources," not client-server environment on-demand application program management. (See Win, Abstract). The managed resources are defined in Win as follows:

**A Resource is a source of information, identified by a Uniform Resource Locator (URL) and published by a Web server** either in a static file formatted using Hypertext Markup Language (HML) or in a dynamically generated page created by a CGI-based program. Examples of resources include a Web page, a complete Web site, a Web-enabled database, and an applet.

(Win, Col. 5, lines 21-27)(emphasis added). Thus, the "resources" discussed in Win, as defined in Win, are not "application programs" as that term is defined in the present application. Instead, the only resource selected and provided in Win is "a source of information, identified by a Uniform Resource Locator (URL) and published by a Web server." (Win, Col. 5, lines 21-27).

The Examiner does not dispute that a "Resource," as defined in the excerpt from Win reproduced above, does not include an "application program." Instead, the Examiner asserts that resources "in the art of computer can be broadly defined to include application program." (Action, p. 7). Regardless of whether this statement by the Examiner is accurate, that is simply not how resources are defined in Win. One of skill in the art, regardless of whether they considered application programs a "resource" in the art of computers, would not understand Win as disclosing or suggesting methods for managing application programs in a client-server environment. Thus, the Examiner's interpretation of Win is unsupportable as it is directly contrary to statements made in Win itself. Accordingly, the rejections should be

In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 4

withdrawn for at least these reasons.

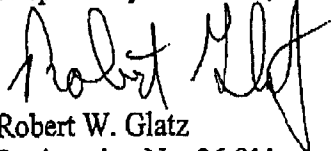
As discussed previously, the rejections should also be withdrawn as the Rose and Win references cannot properly be combined in the manner relied on by the Action. Rose relates to downloading of trial versions of programs. Win, as noted above, does not. Instead, Win relates to management of resources that are "a source of information, identified by a Uniform Resource Locator (URL) and published by a Web server." Both Rose and Win are also directed to distinct problems from the client-server application management environment of the present invention. The rejections are based on applying a definition to the "resources" of Win that is directly contrary to statements contained in Win to justify an unsupportable combination.

The Examiner's reliance on a conclusory statement that resources "can be broadly defined to include application programs" serves to point out, rather than overcome, the deficiencies of the present rejections. Such a conclusory statement of a possible interpretation of resources clearly does not provide clear and particular evidence to support the combination of Rose and Win relied on for the rejections. This is particularly true as the Examiner's interpretation of resources is contrary to the definition of the same contained in Win. Thus, there is no basis to combine Win and Rose to arrive at the present invention. Accordingly, the rejections should be withdrawn for at least these additional reasons.

#### Conclusion

The outstanding rejections have all been addressed by the remarks above and the remarks in Applicants' response of October 23, 2001, which has been incorporated herein by reference. As noted in these remarks, the recitations of the pending claims are neither disclosed nor suggested by the cited combination of references. Accordingly, Applicants respectfully request allowance of the present application and passing the application to issue.

Respectfully submitted,



Robert W. Glatz  
Registration No. 36,811  
Attorney for Applicant



In re: Cox, et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 5

Correspondence Address:



20792

PATENT TRADEMARK OFFICE

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being sent by facsimile transmission to the United States Patent and Trademark Office, Group Art Unit 2664 at (703) ~~305-2718~~ <sup>746-7238</sup> on March 25, 2002.

  
\_\_\_\_\_

Carey Gregory

Date of Signature: March 25, 2002

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/211,528	12/14/1998	DAVID E. COX	5577-130	9791

20792 7590 04/04/2002  
MYERS BIGEL SIBLEY & SAJOVEC  
PO BOX 37428  
RALEIGH, NC 27627

EXAMINER

WILEY, DAVID ARMAND

ART UNIT	PAPER NUMBER
2158	13

DATE MAILED: 04/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Advisory Action</b>	<b>Application No.</b> 09/211,528	<b>Applicant(s)</b> COX ET AL.	
	<b>Examiner</b> David A Wiley	<b>Art Unit</b> 2158	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 25 March 2002 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY** [check either a) or b)]

- a)  The period for reply expires \_\_\_\_\_ months from the mailing date of the final rejection.
- b)  The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1.  A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2.  The proposed amendment(s) will not be entered because:
- (a)  they raise new issues that would require further consideration and/or search (see NOTE below);
  - (b)  they raise the issue of new matter (see Note below);
  - (c)  they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
  - (d)  they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_.

3.  Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.
4.  Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5.  The a)  affidavit, b)  exhibit, or c)  request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
6.  The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7.  For purposes of Appeal, the proposed amendment(s) a)  will not be entered or b)  will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:


Claim(s) allowed: \_\_\_\_\_.

Claim(s) objected to: \_\_\_\_\_.

Claim(s) rejected: 1-14, 21 and 23-49.

Claim(s) withdrawn from consideration: \_\_\_\_\_.

8.  The proposed drawing correction filed on \_\_\_\_\_ is a)  approved or b)  disapproved by the Examiner.
9.  Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_.
10.  Other: \_\_\_\_\_

  
**DAVID WILEY**  
**PRIMARY EXAMINER**

Continuation of 5. does NOT place the application in condition for allowance because: The examiner disagrees with the applicants arguments, the applicant fails to argue the primary reference Rose, and attacks the secondary reference Win. Win is only used to teach the server login portion of the invention, while Rose is used to reject the majority of the claim.



In re: Cox et al.  
Serial No.: 09/211,528  
Filed: December 14, 1998  
Page 2 of 2



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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: BOX AF, Commissioner for Patents, Washington, DC 20231, on April 10, 2002.

A handwritten signature in cursive script that reads "Carey Gregory".

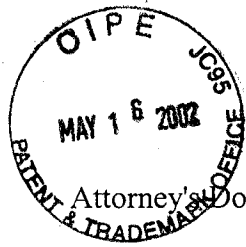
Carey Gregory Date of Signature: April 10, 2002

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05-20-02

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Attorney's Docket No. 5577-130

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re: Cox et al.  
Serial No.: 09/211,528  
Filed: December 14, 1998  
For: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS  
FOR CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON A  
NETWORK

Group Art Unit: 2158  
Examiner: Wiley, D.

May 16, 2002

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**TRANSMITTAL OF APPEAL BRIEF  
(PATENT APPLICATION--37 C.F.R. § 1.192)**

Technology Center 2100

- Transmitted herewith, in triplicate, is the APPEAL BRIEF in this application, with respect to the Notice of Appeal filed on April 10, 2002.
- This application is filed on behalf of  
 a small entity  
 A verified statement  is attached;  was already filed.
- Pursuant to 37 C.F.R. § 1.17(c), the fee for filing the Appeal Brief is:  
 small entity \$155.00  
 other than small entity \$310.00  
 The Commissioner is hereby authorized to charge payment of the Appeal Brief fee associated with this communication to IBM Deposit Account No. 09-0461.

Respectfully submitted,  
  
Robert W. Glatz  
Registration No. 36,811

Customer Number:



20792

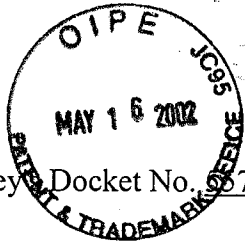
PATENT TRADEMARK OFFICE

CERTIFICATE OF EXPRESS MAILING

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Carey Gregory



Attorney Docket No. 077-130

PATENT #15  
1073  
BT  
5/22/02

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re: Cox et al.  
Serial No.: 09/211,528  
Filed: December 14, 1998  
For: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS  
FOR CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON A  
NETWORK

Group Art Unit: 2158  
Examiner: Wiley, D.

Date: May 16, 2002

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Commissioner for Patents  
Washington, DC 20231

Technology Center 2100

**APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. §1.192**

Sir:

This Appeal Brief is filed pursuant to the "Notice of Appeal to the Board of Patent Appeals and Interferences" mailed 10 April 2002.

**Real Party In Interest**

The real party in interest is assignee International Business Machines Corporation, Armonk, New York.

**Related Appeals**

Appellants are aware of no appeals or interferences which would be affected by the present appeal.

**Status of Claims**

Appellants appeal the final rejection of Claims 1-14, 21 and 23-49, which, as of the filing date of this brief, remain under consideration. These claims were finally rejected in the Final Official Action of February 22, 2002 ("Final Action") and the Advisory Action of April 4, 2002 ("Advisory Action"). A copy of the claims as they stand on appeal is attached hereto as Appendix A.



In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 2

### Status of Amendments

The attached Appendix A presents Claims 1-14, 21 and 23-49 as they currently stand. No amendments were submitted which were not entered.

### Summary of the Invention

The claimed invention, as recited in Claims 1-14, 21 and 23-49, provides methods, systems and computer program products for management of **application programs** on a network including a server supporting client stations. The server provides applications on-demand to a user logging in to a client supported by the server. Mobility and hardware portability are provided by establishing a user desktop interface responsive to a login request that presents to the user a desktop screen through a web browser interface. The desktop accesses and downloads selected application programs from the server responsive to a request from the user. For example, an icon associated with the application program, which is displayed on the user desktop screen at the client, may be selected. An "instance of the selected" application program is then provided from the server for execution at the client. Thus, the application programs may be maintained at the server and provided to clients when needed for execution.

As defined in the specification of the present application:

the term "**application program**" generally refers to the code associated with the underlying program functions, for example, Lotus Notes or a terminal emulator program. However, it is to be understood that the application program will preferably be included as part of the application launcher which will further include the code associated with managing usage of the application program on a network according to the teachings of the present invention. Further it is to be understood that, as used herein, the term "application launcher program" may refer to the entire program provided by a software vendor or to merely a portion thereof distributed to a client to perform particular operations. For example, the application launcher program distributed to initially populate the user desktop preferably does not include the code associated with the underlying application program and obtaining preferences which may only be distributed to the client later when execution of the application program is requested. The application launcher program distributed to populate the user desktop may only include a URL and an associated ICON and, possibly, code to allow obtaining of user identification and password information. Memory usage on the client stations may thereby be limited.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 3

(Specification, pp. 22-23)(emphasis added). In other words, the "application program" is an application level software program, such as Lotus Notes, while the "application launcher program" is provided to "initially populate the user desktop" and need not include the application program code. The application launcher program interacts with the desktop, such as a user browser interface, while an instance of the application program is requested through the desktop but executes locally at the client as a separate application from the browser interface. For example, Lotus Notes would not execute within the browser window.

The present invention may, therefore, be used so that a variety of application programs can be maintained at the server, and an instance of a selected one of the application programs may be provided as needed to a user logged onto a client device. The provided instance of the application may then be executed at the client device to process the request of the user. Thus, individual application programs are provided to the user as needed (on-demand) where they are executed at a client device rather than having the application program executed at the server responsive to a request from a user. Furthermore, a customized user interface desktop is provided at the client device, which displays the applications the user is authorized to access.

#### **Issues**

1. Are Claims 1-14, 21 and 23-49 properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Rose (U.S. Patent No. 5,708,709) in view of Win et al. (U.S. Patent No. 6,182,142)?

#### **Grouping of Claims**

For appeal, the claims may be grouped together as follows:

Group I: Claims 1-14, 21 and 23-49

Claims of Group I do not all stand or fall together as Appellants submit that dependent Claims 3, 10-11, 25, 32-33, 38 and 45-46, which stand or fall together, are separately patentable and dependent Claims 4-5, 26-27 and 39-40, which stand or fall together, are separately patentable.

## Argument

### I. Introduction

To establish a *prima facie* case of obviousness, the prior art reference or references when combined must teach or suggest all the recitations of the claim, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. § 2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. § 2143.01, citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). As stated by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be clear and particular, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). The Court of Appeals for the Federal Circuit has also stated that, to support combining or modifying references, there must be particular evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55, U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000). Furthermore, when relying on general knowledge to negate patentability, and Examiner must articulate and place this knowledge on the record. *See In re Sang Su Lee*, 277 F.3d 1338, 1345, 61 U.S.P.Q.2d 1430, 1435 (Fed. Cir. 2002).

### II. The Group I Claims Are Patentable Over Rose and Win

The Group I claims stand rejected as obvious in light of Rose and Win. Appellants respectfully submit that the Group I claims are patentable for at least the reasons set forth below.

Claim 1 of the present application recites:

1. A method for management of application programs on a network including a server and a client comprising the steps of:  
installing a plurality of **application programs** at the server;  
receiving at the server a login request from a user at the client;

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 5

establishing a user desktop interface at the client **associated with the user** responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized;  
receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and  
providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.

(Emphasis added). Similar recitations are also found in independent Claims 21 and 23, which are corresponding system and computer program product claims, respectively.

The rejection asserts that Rose teaches all of the recitations of Claims 1-14, 21 and 23-49 except that Rose fails to teach "the inventive concept of receiving at the server a login request from the user at the client." (Final Action, p.3). Win is relied on to provide the missing teaching of the "inventive concept of receiving at the server a login request from the user at the client." (Final Action, p.3).

Respectfully, the Examiner has failed to meet the requirements for a showing of obviousness under § 103. As discussed in more detail below, the cited combination of references fails to teach all of the recitations of the claims. In particular, Rose does not teach or suggest a "user desktop **associated with the user**." Furthermore, Win does not teach or suggest such a user desktop include "a plurality of display regions associated with a set of the plurality of **application programs** installed at the server for which the user is authorized." The rejections should also be withdrawn as the Rose and Win references cannot properly be combined in the manner relied on in the rejections to arrive at the present invention in light of the different problems addressed by these references and the lack of motivation for the combination.

**A. Rose Does Not Teach or Suggest a User Desktop Associated With the User**

Rose is directed to managed distribution of licensed application programs stored on a server where the server "maintains control over the program even after the program has been distributed to a client computer." (Rose, Abstract). As described in Rose, for example, with reference to Figure 2, trial versions of application programs may be selected for downloading from the server to a client through a browser interface. (Rose, Col. 4, lines 10-17). In other words, Figure 2 illustrates a display screen at the client showing application programs

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 6

available for downloading from the server. A selected trial version is then prepared, for downloading to the client, which includes encryption and header information used for license and usage control after delivery to the client. (Rose, Col. 5; lines 19-52).

The rejections of Claim 1 primarily rely on Figure 7 and the associated description in Rose as teaching the present invention. However, as is clearly stated in Rose, Figure 7 displays application programs "downloaded to and stored on client computer 102." (Rose, Col. 6, lines 41-42). A selection of a program from the display of Figure 7 of Rose is a selection of a locally stored program for execution as contrasted with the selection of an application program for downloading from a server as illustrated in Figure 2 of Rose. Thus, a selection of an application program through Figure 7 of Rose does not result in the server "providing an instance of the selected one of the plurality of application programs to the client for execution" as recited in Claim 1. Furthermore, neither of the displays of Figures 2 or 7 of Rose is "associated with the user responsive to the login request from the user." While the display of Figure 2 of Rose is established at the client by the server responsive to a browser request from the client, it is simply a download options window not specific to a particular user. The download options window is also not established responsive to a login request as acknowledged by the Final Action. The display of Figure 7 of Rose is directed to local (client) resident application programs and a selection from the display of Figure 7 does not initiate "providing an instance of the selected one of the plurality of application programs to the client for execution" as the application programs are client resident at the time of the request. Thus, the rejection of the Group I claims should be reversed for at least these reasons.

#### **B. The Resources Managed by Win Are Not Application Programs**

The deficiencies of Rose are not overcome by Win. Win relates to "controlling access to information resources," not client-server environment on-demand application program management. (See Win, Abstract). The managed resources are defined in Win as follows:

**A Resource is a source of information, identified by a Uniform Resource Locator (URL) and published by a Web server** either in a static file formatted using Hypertext Markup Language (HML) or in a dynamically generated page created by a CGI-based program. Examples of resources include a Web page, a complete Web site, a Web-enabled database, and an applet.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 7

(Win, Col. 5, lines 21-27)(emphasis added). Thus, the "resources" managed by Win are not "application programs" as that term is defined in the present application in the excerpt reproduced above. Similarly, no user desktop interface that includes "a plurality of display regions associated with a set of the plurality of application programs" is taught or suggested by Win. It follows that no selection received at the server of such an application program and no "providing an instance of the selected" application program "to the client for execution" is taught or suggested by Win. Instead, the only resource selected and provided in Win is a display for the user, such as a static HTML file or a "dynamically generated page created by a CGI-based program" of the server. (Win, Col. 5, lines 21-27). Therefore the rejections of the Group I claims should be reversed for at least these reasons.

### **C. Examiner's Basis For Rejection Appears to Rely on an Unsupportable Interpretation of Win**

The Examiner asserts in the Final Action that Win discloses that the "*user is presented with a customized display showing only those resources (application program) that the user may access.*" (Final Action, p. 7)(emphasis in original). The Final Action further states that the Examiner disagrees with Applicants that the "Winn inventive concept is not application program as disclose [sic] in their inventive concept." (Final Action, p. 7).

The Examiner does not dispute that a "Resource," as defined in the excerpt from Win reproduced above, does not include an "application program." Instead, the Examiner asserts that resources "in the art of computer can be broadly defined to include application program." (Final Action, p. 7). Regardless of whether this statement by the Examiner is accurate, that is simply **not** how resources are defined in Win. One of skill in the art, regardless of whether they considered application programs a "resource" in the art of computers, would not understand Win as disclosing or suggesting methods for managing application programs in a client-server environment. Thus, the Examiner's interpretation of Win is unsupportable as it is directly contrary to statements made in Win itself. Furthermore, the Examiner's reliance on general knowledge to negate patentability without properly articulating and placing this knowledge on the record is not supportable. *See In re Sang Su Lee*, 277 F.3d 1338,1345, 61

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 8

U.S.P.Q.2d 1430, 1435 (Fed. Cir. 2002). Accordingly, the rejections of the Group I claims should be reversed for at least these reasons.

**D. Rose and Win References Cannot Properly be Combined**

There is also no basis for combining the methods and system for controlled downloading of trial versions of programs described in Rose with the resource access management teachings of Win. This is particularly true as Rose and Win are directed to distinct problems from the client-server application management environment of the present invention. For example, while Rose does relate to application program distribution from a server, such operations are for providing trial versions to be repeatedly executed at a client.

In fact, the encryption and application builder aspects advanced as the invention in Rose are not even relevant to the environment of the present invention, where instances of the application programs are provided from a server "on-demand" each time execution is requested by a user. Rose is, instead, merely a distribution approach for client resident programs and one of skill in the art would not look to a reference directed to the problems of such an environment for direction in the distinct art of server based "on-demand" application programs. Win does not even relate to distribution of application programs but merely to control of access to server based resources. Thus, there is no basis to combine Win and Rose to arrive at the present invention. Accordingly, the rejections of the Group I claims should be reversed for at least these additional reasons.

**E. Various of the Dependent Claims of Group I Are Separately Patentable**

All of Group I claims are allowable for at least the reasons discussed above. Furthermore, various of these claims are separately patentable. In particular, with reference to Claims 3, 10-11, 25, 32-33, 38 and 45-46, Rose does not teach distributing "application launcher programs associated with each of the set of the plurality of application programs."

Claims 4-6 depend from Claim 3 and are likewise allowable for the reasons Claim 3 is allowable as are the corresponding system and computer program product claims. In addition, with reference to Claims 4-5, 26-27 and 39-40, Rose does not teach "configurable user preference information." Accordingly, these claims are also separately patentable for at least these additional reasons.


In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 9

Appellants further note that, despite specific requests from Appellants, the Examiner failed to provide an explanation of how the cited portions of Rose, relied on in the Final Action, support the rejections of Claims 3, 10-11, 25, 32-33, 38 and 45-46 or the rejections of Claims 4-5, 26-27 and 39-40. Appellants fail to understand how the Examiner was able to reach the conclusions relied on in the Final Action based on these excerpts.

**III. Conclusion**

In light of the above discussion, Appellants submit that the cited reference combination does not disclose or suggest all of the recitations of the claims that are at issue on this appeal. Appellants further submit that the cited references may not be properly combined to result in the recitations of the claims on appeal. Accordingly, Appellants submit that the cited references do not render any of the pending claims obvious and, therefore, request reversal of the pending rejections and allowance of all the claims.

Respectfully submitted,



Robert W. Glatz  
Registration No. 36,811

**Customer Number:**



20792

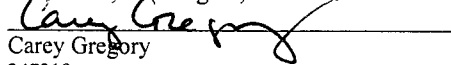
PATENT TRADEMARK OFFICE

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Carey Gregory  
247318



## APPENDIX A

1. A method for management of application programs on a network including a server and a client comprising the steps of:
  - installing a plurality of application programs at the server;
  - receiving at the server a login request from a user at the client;
  - establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized;
  - receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and
  - providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.
  
2. A method according to Claim 1 further comprising the steps of:
  - maintaining application management information for the plurality of applications at the server; and
  - wherein the establishing step includes the step of including a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information.
  
3. A method according to Claim 2 wherein the establishing a user desktop step includes the step of:
  - distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and
  - wherein the receiving a selection step includes the step of receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 11

4. A method according to Claim 3 wherein the maintaining step includes the step of maintaining configurable user preference information for the plurality of application programs at the server and wherein the providing an instance step includes the step of providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client.

5. A method according to Claim 4 wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and further comprising the step of updating the user preferences configurable by the user responsive to updates from the user and updating the user preferences not configurable by the user responsive to updates from the administrator.

6. A method according to Claim 3 wherein the application launcher programs are JAVA™ applets and the user desktop interface is a JAVA™ applet executed by a web browser.

7. A method according to Claim 1 wherein the establishing a user desktop step includes the steps of:  
configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface; and  
providing the user desktop interface and the associated information for the user desktop interface to the client for display.

8. A method according to Claim 7 wherein the configuring the user desktop step includes the step of configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 12

9. A method according to Claim 1 wherein the receiving a selection step is followed by the step of determining a license availability for the selected one of the plurality of application programs for the user and wherein the providing step includes the step of providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user.

10. A method according to Claim 9 wherein the establishing a user desktop step includes the step of distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and wherein the receiving a selection step includes the step of receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the step of determining a license availability includes the step carried out by the one of the application launcher programs associated with the selected one of the plurality of application programs of obtaining the license availability from a license management server.

11. A method according to Claim 10 wherein the license management server is the server.

12. A method according to Claim 1 wherein the plurality of application programs are installed on a network drive accessible to the server.

13. A method according to Claim 1 further comprising the step of receiving at the server event logging information from the instance of the selected one of the plurality of application programs.

14. A method according to Claim 13 further comprising the step of providing the received event logging information to a network management server associated with the server.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 13

21. An application program management system for managing application programs on a network including a server and a client comprising:

- means for installing a plurality of application programs at the server;
- means for receiving at the server a login request from a user at the client;
- means for establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized;
- means for receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and
- means for providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.

23. A computer program product for managing application programs on a network including a server and a client, the computer program product comprising:

- a computer-readable storage medium having computer-readable program code means embodied in said medium, said computer-readable program code means comprising:
  - computer readable program code means for installing a plurality of application programs at the server;
  - computer readable program code means for receiving at the server a login request from a user at the client;
  - computer readable program code means for establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized;
  - computer readable program code means for receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and
  - computer readable program code means for providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.

24. A system according to Claim 21 further comprising:

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 14

means for maintaining application management information for the plurality of applications at the server; and

wherein the means for establishing a user desktop includes means for including a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information.

25. A system according to Claim 24 wherein the means for establishing a user desktop includes:

means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and

wherein the means for receiving a selection includes means for receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs.

26. A system according to Claim 25 wherein the means for maintaining includes means for maintaining configurable user preference information for the plurality of application programs at the server and wherein the means for providing an instance includes means for providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client.

27. A system according to Claim 26 wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and further comprising means for updating the user preferences configurable by the user responsive to updates from the user and updating the user preferences not configurable by the user responsive to updates from the administrator.

28. A system according to Claim 25 wherein the application launcher programs are JAVA™ applets and the user desktop interface is a JAVA™ applet executed by a web browser.

29. A system according to Claim 21 wherein the means for establishing a user desktop includes;

means for configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface; and

means for providing the user desktop interface and the associated information for the user desktop interface to the client for display.

30. A system according to Claim 29 wherein the means for configuring the user desktop includes means for configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized.

31. A system according to Claim 21 further comprising means for determining a license availability for the selected one of the plurality of application programs for the user and wherein the means for providing includes means for providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user.

32. A system according to Claim 31 wherein the means for establishing a user desktop includes means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and wherein the means for receiving a selection includes means for receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the means for determining a license availability includes means, associated with one of the application launcher programs associated with the selected one of the plurality of application programs, for obtaining the license availability from a license management server.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 16

33. A system according to Claim 32 wherein the license management server is the server.

34. A system according to Claim 21 wherein the plurality of application programs are installed on a network drive accessible to the server.

35. A system according to Claim 21 further comprising means for receiving at the server event logging information from the instance of the selected one of the plurality of application programs.

36. A system according to Claim 35 further comprising means for providing the received event logging information to a network management server associated with the server.

37. A computer program product according to Claim 23 further comprising:  
computer readable program code means for maintaining application management information for the plurality of applications at the server; and  
wherein the computer readable program code means for establishing a user desktop includes computer readable program code means for including a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information.

38. A computer program product according to Claim 37 wherein the computer readable program code means for establishing a user desktop includes:  
computer readable program code means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and  
wherein the computer readable program code means for receiving a selection includes computer readable program code means for receiving the selection from a one of the

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 17

application launcher programs which is associated with the selected one of the plurality of application programs.

39. A computer program product according to Claim 38 wherein the computer readable program code means for maintaining includes computer readable program code means for maintaining configurable user preference information for the plurality of application programs at the server and wherein the computer readable program code means for providing an instance includes computer readable program code means for providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client.

40. A computer program product according to Claim 39 wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and further comprising computer readable program code means for updating the user preferences configurable by the user responsive to updates from the user and updating the user preferences not configurable by the user responsive to updates from the administrator.

41. A computer program product according to Claim 38 wherein the application launcher programs are JAVA™ applets and the user desktop interface is a JAVA™ applet executed by a web browser.

42. A computer program product according to Claim 23 wherein the computer readable program code means for establishing a user desktop includes;  
computer readable program code means for configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface; and  
computer readable program code means for providing the user desktop interface and the associated information for the user desktop interface to the client for display.



In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 18

43. A computer program product according to Claim 42 wherein the computer readable program code means for configuring the user desktop includes computer readable program code means for configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized.

44. A computer program product according to Claim 23 further comprising computer readable program code means for determining a license availability for the selected one of the plurality of application programs for the user and wherein the computer readable program code means for providing includes computer readable program code means for providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user.

45. A computer program product according to Claim 44 wherein the computer readable program code means for establishing a user desktop includes computer readable program code means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and wherein the computer readable program code means for receiving a selection includes computer readable program code means for receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the computer readable program code means for determining a license availability includes computer readable program code means, associated with one of the application launcher programs associated with the selected one of the plurality of application programs, for obtaining the license availability from a license management server.

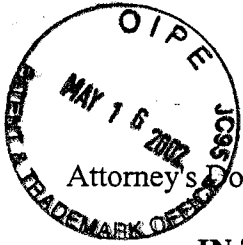
46. A computer program product according to Claim 45 wherein the license management server is the server.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 19

47. A computer program product according to Claim 23 wherein the plurality of application programs are installed on a network drive accessible to the server.

48. A computer program product according to Claim 23 further comprising computer readable program code means for receiving at the server event logging information from the instance of the selected one of the plurality of application programs.

49. A computer program product according to Claim 48 further comprising computer readable program code means for providing the received event logging information to a network management server associated with the server.



Attorney's Docket No. 5577-130

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re: Cox et al.  
Serial No.: 09/211,528  
Filed: December 14, 1998  
For: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS  
FOR CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON A  
NETWORK

Group Art Unit: 2158

Examiner: Wiley, D.

Date: May 16, 2002

**BOX AF**  
Commissioner for Patents  
Washington, DC 20231

**APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. §1.192**

Sir:

This Appeal Brief is filed pursuant to the "Notice of Appeal to the Board of Patent Appeals and Interferences" mailed 10 April 2002.

**Real Party In Interest**

The real party in interest is assignee International Business Machines Corporation, Armonk, New York.

**Related Appeals**

Appellants are aware of no appeals or interferences which would be affected by the present appeal.

**Status of Claims**

Appellants appeal the final rejection of Claims 1-14, 21 and 23-49, which, as of the filing date of this brief, remain under consideration. These claims were finally rejected in the Final Official Action of February 22, 2002 ("Final Action") and the Advisory Action of April 4, 2002 ("Advisory Action"). A copy of the claims as they stand on appeal is attached hereto as Appendix A.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 2

### Status of Amendments

The attached Appendix A presents Claims 1-14, 21 and 23-49 as they currently stand. No amendments were submitted which were not entered.

### Summary of the Invention

The claimed invention, as recited in Claims 1-14, 21 and 23-49, provides methods, systems and computer program products for management of **application programs** on a network including a server supporting client stations. The server provides applications on-demand to a user logging in to a client supported by the server. Mobility and hardware portability are provided by establishing a user desktop interface responsive to a login request that presents to the user a desktop screen through a web browser interface. The desktop accesses and downloads selected application programs from the server responsive to a request from the user. For example, an icon associated with the application program, which is displayed on the user desktop screen at the client, may be selected. An "instance of the selected" application program is then provided from the server for execution at the client. Thus, the application programs may be maintained at the server and provided to clients when needed for execution.

As defined in the specification of the present application:

the term "**application program**" generally refers to the code associated with the underlying program functions, for example, Lotus Notes or a terminal emulator program. However, it is to be understood that the application program will preferably be included as part of the application launcher which will further include the code associated with managing usage of the application program on a network according to the teachings of the present invention. Further it is to be understood that, as used herein, the term "application launcher program" may refer to the entire program provided by a software vendor or to merely a portion thereof distributed to a client to perform particular operations. **For example, the application launcher program distributed to initially populate the user desktop preferably does not include the code associated with the underlying application program** and obtaining preferences which may only be distributed to the client later when execution of the application program is requested. The application launcher program distributed to populate the user desktop may only include a URL and an associated ICON and, possibly, code to allow obtaining of user identification and password information. Memory usage on the client stations may thereby be limited.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 3

(Specification, pp. 22-23)(emphasis added). In other words, the "application program" is an application level software program, such as Lotus Notes, while the "application launcher program" is provided to "initially populate the user desktop" and need not include the application program code. The application launcher program interacts with the desktop, such as a user browser interface, while an instance of the application program is requested through the desktop but executes locally at the client as a separate application from the browser interface. For example, Lotus Notes would not execute within the browser window.

The present invention may, therefore, be used so that a variety of application programs can be maintained at the server, and an instance of a selected one of the application programs may be provided as needed to a user logged onto a client device. The provided instance of the application may then be executed at the client device to process the request of the user. Thus, individual application programs are provided to the user as needed (on-demand) where they are executed at a client device rather than having the application program executed at the server responsive to a request from a user. Furthermore, a customized user interface desktop is provided at the client device, which displays the applications the user is authorized to access.

#### Issues

1. Are Claims 1-14, 21 and 23-49 properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Rose (U.S. Patent No. 5,708,709) in view of Win et al. (U.S. Patent No. 6,182,142)?

#### Grouping of Claims

For appeal, the claims may be grouped together as follows:

Group I: Claims 1-14, 21 and 23-49

Claims of Group I do not all stand or fall together as Appellants submit that dependent Claims 3, 10-11, 25, 32-33, 38 and 45-46, which stand or fall together, are separately patentable and dependent Claims 4-5, 26-27 and 39-40, which stand or fall together, are separately patentable.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 4

## Argument

### I. Introduction

To establish a *prima facie* case of obviousness, the prior art reference or references when combined must teach or suggest all the recitations of the claim, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. § 2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. § 2143.01, citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). As stated by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be clear and particular, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). The Court of Appeals for the Federal Circuit has also stated that, to support combining or modifying references, there must be particular evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55, U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000). Furthermore, when relying on general knowledge to negate patentability, and Examiner must articulate and place this knowledge on the record. See *In re Sang Su Lee*, 277 F.3d 1338, 1345, 61 U.S.P.Q.2d 1430, 1435 (Fed. Cir. 2002).

### II. The Group I Claims Are Patentable Over Rose and Win

The Group I claims stand rejected as obvious in light of Rose and Win. Appellants respectfully submit that the Group I claims are patentable for at least the reasons set forth below.

Claim 1 of the present application recites:

1. A method for management of application programs on a network including a server and a client comprising the steps of:  
installing a plurality of **application programs** at the server;  
receiving at the server a login request from a user at the client;

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 5

establishing a user desktop interface at the client **associated with the user** responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized;  
receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and  
providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.

(Emphasis added). Similar recitations are also found in independent Claims 21 and 23, which are corresponding system and computer program product claims, respectively.

The rejection asserts that Rose teaches all of the recitations of Claims 1-14, 21 and 23-49 except that Rose fails to teach "the inventive concept of receiving at the server a login request from the user at the client." (Final Action, p.3). Win is relied on to provide the missing teaching of the "inventive concept of receiving at the server a login request from the user at the client." (Final Action, p.3).

Respectfully, the Examiner has failed to meet the requirements for a showing of obviousness under § 103. As discussed in more detail below, the cited combination of references fails to teach all of the recitations of the claims. In particular, Rose does not teach or suggest a "user desktop **associated with the user**." Furthermore, Win does not teach or suggest such a user desktop include "a plurality of display regions associated with a set of the plurality of **application programs** installed at the server for which the user is authorized." The rejections should also be withdrawn as the Rose and Win references cannot properly be combined in the manner relied on in the rejections to arrive at the present invention in light of the different problems addressed by these references and the lack of motivation for the combination.

**A. Rose Does Not Teach or Suggest a User Desktop Associated With the User**

Rose is directed to managed distribution of licensed application programs stored on a server where the server "maintains control over the program even after the program has been distributed to a client computer." (Rose, Abstract). As described in Rose, for example, with reference to Figure 2, trial versions of application programs may be selected for downloading from the server to a client through a browser interface. (Rose, Col. 4, lines 10-17). In other words, Figure 2 illustrates a display screen at the client showing application programs

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 6

available for downloading from the server. A selected trial version is then prepared, for downloading to the client, which includes encryption and header information used for license and usage control after delivery to the client. (Rose, Col. 5, lines 19-52).

The rejections of Claim 1 primarily rely on Figure 7 and the associated description in Rose as teaching the present invention. However, as is clearly stated in Rose, Figure 7 displays application programs "downloaded to and stored on client computer 102." (Rose, Col. 6, lines 41-42). A selection of a program from the display of Figure 7 of Rose is a selection of a locally stored program for execution as contrasted with the selection of an application program for downloading from a server as illustrated in Figure 2 of Rose. Thus, a selection of an application program through Figure 7 of Rose does not result in the server "providing an instance of the selected one of the plurality of application programs to the client for execution" as recited in Claim 1. Furthermore, neither of the displays of Figures 2 or 7 of Rose is "associated with the user responsive to the login request from the user." While the display of Figure 2 of Rose is established at the client by the server responsive to a browser request from the client, it is simply a download options window not specific to a particular user. The download options window is also not established responsive to a login request as acknowledged by the Final Action. The display of Figure 7 of Rose is directed to local (client) resident application programs and a selection from the display of Figure 7 does not initiate "providing an instance of the selected one of the plurality of application programs to the client for execution" as the application programs are client resident at the time of the request. Thus, the rejection of the Group I claims should be reversed for at least these reasons.

#### **B. The Resources Managed by Win Are Not Application Programs**

The deficiencies of Rose are not overcome by Win. Win relates to "controlling access to information resources," not client-server environment on-demand application program management. (See Win, Abstract). The managed resources are defined in Win as follows:

**A Resource is a source of information, identified by a Uniform Resource Locator (URL) and published by a Web server** either in a static file formatted using Hypertext Markup Language (HML) or in a dynamically generated page created by a CGI-based program. Examples of resources include a Web page, a complete Web site, a Web-enabled database, and an applet.



In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 7

(Win, Col. 5, lines 21-27)(emphasis added). Thus, the "resources" managed by Win are not "application programs" as that term is defined in the present application in the excerpt reproduced above. Similarly, no user desktop interface that includes "a plurality of display regions associated with a set of the plurality of application programs" is taught or suggested by Win. It follows that no selection received at the server of such an application program and no "providing an instance of the selected" application program "to the client for execution" is taught or suggested by Win. Instead, the only resource selected and provided in Win is a display for the user, such as a static HTML file or a "dynamically generated page created by a CGI-based program" of the server. (Win, Col. 5, lines 21-27). Therefore the rejections of the Group I claims should be reversed for at least these reasons.

**C. Examiner's Basis For Rejection Appears to Rely on an Unsupportable Interpretation of Win**

The Examiner asserts in the Final Action that Win discloses that the "*user is presented with a customized display showing only those resources (application program) that the user may access.*" (Final Action, p. 7)(emphasis in original). The Final Action further states that the Examiner disagrees with Applicants that the "Winn inventive concept is not application program as disclose [sic] in their inventive concept." (Final Action, p. 7).

The Examiner does not dispute that a "Resource," as defined in the excerpt from Win reproduced above, does not include an "application program." Instead, the Examiner asserts that resources "in the art of computer can be broadly defined to include application program." (Final Action, p. 7). Regardless of whether this statement by the Examiner is accurate, that is simply not how resources are defined in Win. One of skill in the art, regardless of whether they considered application programs a "resource" in the art of computers, would not understand Win as disclosing or suggesting methods for managing application programs in a client-server environment. Thus, the Examiner's interpretation of Win is unsupportable as it is directly contrary to statements made in Win itself. Furthermore, the Examiner's reliance on general knowledge to negate patentability without properly articulating and placing this knowledge on the record is not supportable. See *In re Sang Su Lee*, 277 F.3d 1338,1345, 61

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 8

U.S.P.Q.2d 1430, 1435 (Fed. Cir. 2002). Accordingly, the rejections of the Group I claims should be reversed for at least these reasons.

**D. Rose and Win References Cannot Properly be Combined**

There is also no basis for combining the methods and system for controlled downloading of trial versions of programs described in Rose with the resource access management teachings of Win. This is particularly true as Rose and Win are directed to distinct problems from the client-server application management environment of the present invention. For example, while Rose does relate to application program distribution from a server, such operations are for providing trial versions to be repeatedly executed at a client.

In fact, the encryption and application builder aspects advanced as the invention in Rose are not even relevant to the environment of the present invention, where instances of the application programs are provided from a server "on-demand" each time execution is requested by a user. Rose is, instead, merely a distribution approach for client resident programs and one of skill in the art would not look to a reference directed to the problems of such an environment for direction in the distinct art of server based "on-demand" application programs. Win does not even relate to distribution of application programs but merely to control of access to server based resources. Thus, there is no basis to combine Win and Rose to arrive at the present invention. Accordingly, the rejections of the Group I claims should be reversed for at least these additional reasons.

**E. Various of the Dependent Claims of Group I Are Separately Patentable**

All of Group I claims are allowable for at least the reasons discussed above. Furthermore, various of these claims are separately patentable. In particular, with reference to Claims 3, 10-11, 25, 32-33, 38 and 45-46, Rose does not teach distributing "application launcher programs associated with each of the set of the plurality of application programs."

Claims 4-6 depend from Claim 3 and are likewise allowable for the reasons Claim 3 is allowable as are the corresponding system and computer program product claims. In addition, with reference to Claims 4-5, 26-27 and 39-40, Rose does not teach "configurable user preference information." Accordingly, these claims are also separately patentable for at least these additional reasons.

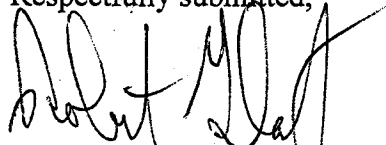
In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 9

Appellants further note that, despite specific requests from Appellants, the Examiner failed to provide an explanation of how the cited portions of Rose, relied on in the Final Action, support the rejections of Claims 3, 10-11, 25, 32-33, 38 and 45-46 or the rejections of Claims 4-5, 26-27 and 39-40. Appellants fail to understand how the Examiner was able to reach the conclusions relied on in the Final Action based on these excerpts.

### III. Conclusion

In light of the above discussion, Appellants submit that the cited reference combination does not disclose or suggest all of the recitations of the claims that are at issue on this appeal. Appellants further submit that the cited references may not be properly combined to result in the recitations of the claims on appeal. Accordingly, Appellants submit that the cited references do not render any of the pending claims obvious and, therefore, request reversal of the pending rejections and allowance of all the claims.

Respectfully submitted,



Robert W. Glatz  
Registration No. 36,811

**Customer Number:**



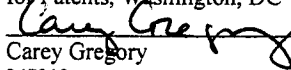
20792

PATENT TRADEMARK OFFICE

#### CERTIFICATE OF EXPRESS MAILING

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Carey Gregory  
247318

**APPENDIX A**

1. A method for management of application programs on a network including a server and a client comprising the steps of:
  - installing a plurality of application programs at the server;
  - receiving at the server a login request from a user at the client;
  - establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized;
  - receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and
  - providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.
  
2. A method according to Claim 1 further comprising the steps of:
  - maintaining application management information for the plurality of applications at the server; and
  - wherein the establishing step includes the step of including a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information.
  
3. A method according to Claim 2 wherein the establishing a user desktop step includes the step of:
  - distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and
  - wherein the receiving a selection step includes the step of receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 11

4. A method according to Claim 3 wherein the maintaining step includes the step of maintaining configurable user preference information for the plurality of application programs at the server and wherein the providing an instance step includes the step of providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client.

5. A method according to Claim 4 wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and further comprising the step of updating the user preferences configurable by the user responsive to updates from the user and updating the user preferences not configurable by the user responsive to updates from the administrator.

6. A method according to Claim 3 wherein the application launcher programs are JAVA™ applets and the user desktop interface is a JAVA™ applet executed by a web browser.

7. A method according to Claim 1 wherein the establishing a user desktop step includes the steps of:  
configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface; and  
providing the user desktop interface and the associated information for the user desktop interface to the client for display.

8. A method according to Claim 7 wherein the configuring the user desktop step includes the step of configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 12

9. A method according to Claim 1 wherein the receiving a selection step is followed by the step of determining a license availability for the selected one of the plurality of application programs for the user and wherein the providing step includes the step of providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user.

10. A method according to Claim 9 wherein the establishing a user desktop step includes the step of distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and wherein the receiving a selection step includes the step of receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the step of determining a license availability includes the step carried out by the one of the application launcher programs associated with the selected one of the plurality of application programs of obtaining the license availability from a license management server.

11. A method according to Claim 10 wherein the license management server is the server.

12. A method according to Claim 1 wherein the plurality of application programs are installed on a network drive accessible to the server.

13. A method according to Claim 1 further comprising the step of receiving at the server event logging information from the instance of the selected one of the plurality of application programs.

14. A method according to Claim 13 further comprising the step of providing the received event logging information to a network management server associated with the server.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 13

21. An application program management system for managing application programs on a network including a server and a client comprising:

- means for installing a plurality of application programs at the server;
- means for receiving at the server a login request from a user at the client;
- means for establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized;
- means for receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and
- means for providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.

23. A computer program product for managing application programs on a network including a server and a client, the computer program product comprising:

- a computer-readable storage medium having computer-readable program code means embodied in said medium, said computer-readable program code means comprising:
  - computer readable program code means for installing a plurality of application programs at the server;
  - computer readable program code means for receiving at the server a login request from a user at the client;
  - computer readable program code means for establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized;
  - computer readable program code means for receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and
  - computer readable program code means for providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.

24. A system according to Claim 21 further comprising:

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 14

means for maintaining application management information for the plurality of applications at the server; and

wherein the means for establishing a user desktop includes means for including a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information.

25. A system according to Claim 24 wherein the means for establishing a user desktop includes:

means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and

wherein the means for receiving a selection includes means for receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs.

26. A system according to Claim 25 wherein the means for maintaining includes means for maintaining configurable user preference information for the plurality of application programs at the server and wherein the means for providing an instance includes means for providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client.

27. A system according to Claim 26 wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and further comprising means for updating the user preferences configurable by the user responsive to updates from the user and updating the user preferences not configurable by the user responsive to updates from the administrator.

28. A system according to Claim 25 wherein the application launcher programs are JAVA™ applets and the user desktop interface is a JAVA™ applet executed by a web browser.



In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 15

29. A system according to Claim 21 wherein the means for establishing a user desktop includes;

means for configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface; and

means for providing the user desktop interface and the associated information for the user desktop interface to the client for display.

30. A system according to Claim 29 wherein the means for configuring the user desktop includes means for configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized.

31. A system according to Claim 21 further comprising means for determining a license availability for the selected one of the plurality of application programs for the user and wherein the means for providing includes means for providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user.

32. A system according to Claim 31 wherein the means for establishing a user desktop includes means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and wherein the means for receiving a selection includes means for receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the means for determining a license availability includes means, associated with one of the application launcher programs associated with the selected one of the plurality of application programs, for obtaining the license availability from a license management server.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 16

33. A system according to Claim 32 wherein the license management server is the server.

34. A system according to Claim 21 wherein the plurality of application programs are installed on a network drive accessible to the server.

35. A system according to Claim 21 further comprising means for receiving at the server event logging information from the instance of the selected one of the plurality of application programs.

36. A system according to Claim 35 further comprising means for providing the received event logging information to a network management server associated with the server.

37. A computer program product according to Claim 23 further comprising:  
computer readable program code means for maintaining application management information for the plurality of applications at the server; and  
wherein the computer readable program code means for establishing a user desktop includes computer readable program code means for including a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information.

38. A computer program product according to Claim 37 wherein the computer readable program code means for establishing a user desktop includes:  
computer readable program code means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and  
wherein the computer readable program code means for receiving a selection includes computer readable program code means for receiving the selection from a one of the

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 17

application launcher programs which is associated with the selected one of the plurality of application programs.

39. A computer program product according to Claim 38 wherein the computer readable program code means for maintaining includes computer readable program code means for maintaining configurable user preference information for the plurality of application programs at the server and wherein the computer readable program code means for providing an instance includes computer readable program code means for providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client.

40. A computer program product according to Claim 39 wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and further comprising computer readable program code means for updating the user preferences configurable by the user responsive to updates from the user and updating the user preferences not configurable by the user responsive to updates from the administrator.

41. A computer program product according to Claim 38 wherein the application launcher programs are JAVA™ applets and the user desktop interface is a JAVA™ applet executed by a web browser.

42. A computer program product according to Claim 23 wherein the computer readable program code means for establishing a user desktop includes;

computer readable program code means for configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface; and

computer readable program code means for providing the user desktop interface and the associated information for the user desktop interface to the client for display.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 18

43. A computer program product according to Claim 42 wherein the computer readable program code means for configuring the user desktop includes computer readable program code means for configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized.

44. A computer program product according to Claim 23 further comprising computer readable program code means for determining a license availability for the selected one of the plurality of application programs for the user and wherein the computer readable program code means for providing includes computer readable program code means for providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user.

45. A computer program product according to Claim 44 wherein the computer readable program code means for establishing a user desktop includes computer readable program code means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and wherein the computer readable program code means for receiving a selection includes computer readable program code means for receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the computer readable program code means for determining a license availability includes computer readable program code means, associated with one of the application launcher programs associated with the selected one of the plurality of application programs, for obtaining the license availability from a license management server.

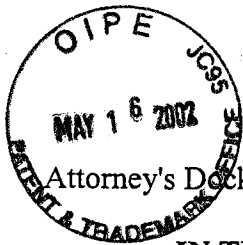
46. A computer program product according to Claim 45 wherein the license management server is the server.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 19

47. A computer program product according to Claim 23 wherein the plurality of application programs are installed on a network drive accessible to the server.

48. A computer program product according to Claim 23 further comprising computer readable program code means for receiving at the server event logging information from the instance of the selected one of the plurality of application programs.

49. A computer program product according to Claim 48 further comprising computer readable program code means for providing the received event logging information to a network management server associated with the server.



Attorney's Docket No. 5577-130

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re: Cox et al.  
Serial No.: 09/211,528  
Filed: December 14, 1998  
For: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS  
FOR CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON A  
NETWORK

Group Art Unit: 2158

Examiner: Wiley, D.

Date: May 16, 2002

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Washington, DC 20231

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Technology Center 2100

**APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. §1.192**

Sir:

This Appeal Brief is filed pursuant to the "Notice of Appeal to the Board of Patent Appeals and Interferences" mailed 10 April 2002.

**Real Party In Interest**

The real party in interest is assignee International Business Machines Corporation, Armonk, New York.

**Related Appeals**

Appellants are aware of no appeals or interferences which would be affected by the present appeal.

**Status of Claims**

Appellants appeal the final rejection of Claims 1-14, 21 and 23-49, which, as of the filing date of this brief, remain under consideration. These claims were finally rejected in the Final Official Action of February 22, 2002 ("Final Action") and the Advisory Action of April 4, 2002 ("Advisory Action"). A copy of the claims as they stand on appeal is attached hereto as Appendix A.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 2

### Status of Amendments

The attached Appendix A presents Claims 1-14, 21 and 23-49 as they currently stand. No amendments were submitted which were not entered.

### Summary of the Invention

The claimed invention, as recited in Claims 1-14, 21 and 23-49, provides methods, systems and computer program products for management of application programs on a network including a server supporting client stations. The server provides applications on-demand to a user logging in to a client supported by the server. Mobility and hardware portability are provided by establishing a user desktop interface responsive to a login request that presents to the user a desktop screen through a web browser interface. The desktop accesses and downloads selected application programs from the server responsive to a request from the user. For example, an icon associated with the application program, which is displayed on the user desktop screen at the client, may be selected. An "instance of the selected" application program is then provided from the server for execution at the client. Thus, the application programs may be maintained at the server and provided to clients when needed for execution.

As defined in the specification of the present application:

the term "application program" generally refers to the code associated with the underlying program functions, for example, Lotus Notes or a terminal emulator program. However, it is to be understood that the application program will preferably be included as part of the application launcher which will further include the code associated with managing usage of the application program on a network according to the teachings of the present invention. Further it is to be understood that, as used herein, the term "application launcher program" may refer to the entire program provided by a software vendor or to merely a portion thereof distributed to a client to perform particular operations. For example, the application launcher program distributed to initially populate the user desktop preferably does not include the code associated with the underlying application program and obtaining preferences which may only be distributed to the client later when execution of the application program is requested. The application launcher program distributed to populate the user desktop may only include a URL and an associated ICON and, possibly, code to allow obtaining of user identification and password information. Memory usage on the client stations may thereby be limited.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 3

(Specification, pp. 22-23)(emphasis added). In other words, the "application program" is an application level software program, such as Lotus Notes, while the "application launcher program" is provided to "initially populate the user desktop" and need not include the application program code. The application launcher program interacts with the desktop, such as a user browser interface, while an instance of the application program is requested through the desktop but executes locally at the client as a separate application from the browser interface. For example, Lotus Notes would not execute within the browser window.

The present invention may, therefore, be used so that a variety of application programs can be maintained at the server, and an instance of a selected one of the application programs may be provided as needed to a user logged onto a client device. The provided instance of the application may then be executed at the client device to process the request of the user. Thus, individual application programs are provided to the user as needed (on-demand) where they are executed at a client device rather than having the application program executed at the server responsive to a request from a user. Furthermore, a customized user interface desktop is provided at the client device, which displays the applications the user is authorized to access.

#### Issues

1. Are Claims 1-14, 21 and 23-49 properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Rose (U.S. Patent No. 5,708,709) in view of Win et al. (U.S. Patent No. 6,182,142)?

#### Grouping of Claims

For appeal, the claims may be grouped together as follows:

Group I: Claims 1-14, 21 and 23-49

Claims of Group I do not all stand or fall together as Appellants submit that dependent Claims 3, 10-11, 25, 32-33, 38 and 45-46, which stand or fall together, are separately patentable and dependent Claims 4-5, 26-27 and 39-40, which stand or fall together, are separately patentable.



In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 4

## Argument

### I. Introduction

To establish a *prima facie* case of obviousness, the prior art reference or references when combined must teach or suggest all the recitations of the claim, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. § 2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. § 2143.01, citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). As stated by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be clear and particular, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). The Court of Appeals for the Federal Circuit has also stated that, to support combining or modifying references, there must be particular evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55, U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000). Furthermore, when relying on general knowledge to negate patentability, and Examiner must articulate and place this knowledge on the record. *See In re Sang Su Lee*, 277 F.3d 1338,1345, 61 U.S.P.Q.2d 1430, 1435 (Fed. Cir. 2002).

### II. The Group I Claims Are Patentable Over Rose and Win

The Group I claims stand rejected as obvious in light of Rose and Win. Appellants respectfully submit that the Group I claims are patentable for at least the reasons set forth below.

Claim 1 of the present application recites:

1. A method for management of application programs on a network including a server and a client comprising the steps of:
  - installing a plurality of **application programs** at the server;
  - receiving at the server a login request from a user at the client;

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 5

establishing a user desktop interface at the client **associated with the user** responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized;  
receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and  
providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.

(Emphasis added). Similar recitations are also found in independent Claims 21 and 23, which are corresponding system and computer program product claims, respectively.

The rejection asserts that Rose teaches all of the recitations of Claims 1-14, 21 and 23-49 except that Rose fails to teach "the inventive concept of receiving at the server a login request from the user at the client." (Final Action, p.3). Win is relied on to provide the missing teaching of the "inventive concept of receiving at the server a login request from the user at the client." (Final Action, p.3).

Respectfully, the Examiner has failed to meet the requirements for a showing of obviousness under § 103. As discussed in more detail below, the cited combination of references fails to teach all of the recitations of the claims. In particular, Rose does not teach or suggest a "user desktop **associated with the user**." Furthermore, Win does not teach or suggest such a user desktop include "a plurality of display regions associated with a set of the plurality of **application programs** installed at the server for which the user is authorized." The rejections should also be withdrawn as the Rose and Win references cannot properly be combined in the manner relied on in the rejections to arrive at the present invention in light of the different problems addressed by these references and the lack of motivation for the combination.

#### **A. Rose Does Not Teach or Suggest a User Desktop Associated With the User**

Rose is directed to managed distribution of licensed application programs stored on a server where the server "maintains control over the program even after the program has been distributed to a client computer." (Rose, Abstract). As described in Rose, for example, with reference to Figure 2, trial versions of application programs may be selected for downloading from the server to a client through a browser interface. (Rose, Col. 4, lines 10-17). In other words, Figure 2 illustrates a display screen at the client showing application programs

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 6

available for downloading from the server. A selected trial version is then prepared, for downloading to the client, which includes encryption and header information used for license and usage control after delivery to the client. (Rose, Col. 5, lines 19-52).

The rejections of Claim 1 primarily rely on Figure 7 and the associated description in Rose as teaching the present invention. However, as is clearly stated in Rose, Figure 7 displays application programs "downloaded to and stored on client computer 102." (Rose, Col. 6, lines 41-42). A selection of a program from the display of Figure 7 of Rose is a selection of a locally stored program for execution as contrasted with the selection of an application program for downloading from a server as illustrated in Figure 2 of Rose. Thus, a selection of an application program through Figure 7 of Rose does not result in the server "providing an instance of the selected one of the plurality of application programs to the client for execution" as recited in Claim 1. Furthermore, neither of the displays of Figures 2 or 7 of Rose is "associated with the user responsive to the login request from the user." While the display of Figure 2 of Rose is established at the client by the server responsive to a browser request from the client, it is simply a download options window not specific to a particular user. The download options window is also not established responsive to a login request as acknowledged by the Final Action. The display of Figure 7 of Rose is directed to local (client) resident application programs and a selection from the display of Figure 7 does not initiate "providing an instance of the selected one of the plurality of application programs to the client for execution" as the application programs are client resident at the time of the request. Thus, the rejection of the Group I claims should be reversed for at least these reasons.

#### **B. The Resources Managed by Win Are Not Application Programs**

The deficiencies of Rose are not overcome by Win. Win relates to "controlling access to information resources," not client-server environment on-demand application program management. (See Win, Abstract). The managed resources are defined in Win as follows:

**A Resource is a source of information, identified by a Uniform Resource Locator (URL) and published by a Web server** either in a static file formatted using Hypertext Markup Language (HML) or in a dynamically generated page created by a CGI-based program. Examples of resources include a Web page, a complete Web site, a Web-enabled database, and an applet.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 7

(Win, Col. 5, lines 21-27)(emphasis added). Thus, the "resources" managed by Win are not "application programs" as that term is defined in the present application in the excerpt reproduced above. Similarly, no user desktop interface that includes "a plurality of display regions associated with a set of the plurality of application programs" is taught or suggested by Win. It follows that no selection received at the server of such an application program and no "providing an instance of the selected" application program "to the client for execution" is taught or suggested by Win. Instead, the only resource selected and provided in Win is a display for the user, such as a static HTML file or a "dynamically generated page created by a CGI-based program" of the server. (Win, Col. 5, lines 21-27). Therefore the rejections of the Group I claims should be reversed for at least these reasons.

**C. Examiner's Basis For Rejection Appears to Rely on an Unsupportable Interpretation of Win**

The Examiner asserts in the Final Action that Win discloses that the "*user is presented with a customized display showing only those resources (application program) that the user may access.*" (Final Action, p. 7)(emphasis in original). The Final Action further states that the Examiner disagrees with Applicants that the "Winn inventive concept is not application program as disclose [sic] in their inventive concept." (Final Action, p. 7).

The Examiner does not dispute that a "Resource," as defined in the excerpt from Win reproduced above, does not include an "application program." Instead, the Examiner asserts that resources "in the art of computer can be broadly defined to include application program." (Final Action, p. 7). Regardless of whether this statement by the Examiner is accurate, that is simply not how resources are defined in Win. One of skill in the art, regardless of whether they considered application programs a "resource" in the art of computers, would not understand Win as disclosing or suggesting methods for managing application programs in a client-server environment. Thus, the Examiner's interpretation of Win is unsupportable as it is directly contrary to statements made in Win itself. Furthermore, the Examiner's reliance on general knowledge to negate patentability without properly articulating and placing this knowledge on the record is not supportable. See *In re Sang Su Lee*, 277 F.3d 1338,1345, 61

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 8

U.S.P.Q.2d 1430, 1435 (Fed. Cir. 2002). Accordingly, the rejections of the Group I claims should be reversed for at least these reasons.

**D. Rose and Win References Cannot Properly be Combined**

There is also no basis for combining the methods and system for controlled downloading of trial versions of programs described in Rose with the resource access management teachings of Win. This is particularly true as Rose and Win are directed to distinct problems from the client-server application management environment of the present invention. For example, while Rose does relate to application program distribution from a server, such operations are for providing trial versions to be repeatedly executed at a client.

In fact, the encryption and application builder aspects advanced as the invention in Rose are not even relevant to the environment of the present invention, where instances of the application programs are provided from a server "on-demand" each time execution is requested by a user. Rose is, instead, merely a distribution approach for client resident programs and one of skill in the art would not look to a reference directed to the problems of such an environment for direction in the distinct art of server based "on-demand" application programs. Win does not even relate to distribution of application programs but merely to control of access to server based resources. Thus, there is no basis to combine Win and Rose to arrive at the present invention. Accordingly, the rejections of the Group I claims should be reversed for at least these additional reasons.

**E. Various of the Dependent Claims of Group I Are Separately Patentable**

All of Group I claims are allowable for at least the reasons discussed above. Furthermore, various of these claims are separately patentable. In particular, with reference to Claims 3, 10-11, 25, 32-33, 38 and 45-46, Rose does not teach distributing "application launcher programs associated with each of the set of the plurality of application programs."

Claims 4-6 depend from Claim 3 and are likewise allowable for the reasons Claim 3 is allowable as are the corresponding system and computer program product claims. In addition, with reference to Claims 4-5, 26-27 and 39-40, Rose does not teach "configurable user preference information." Accordingly, these claims are also separately patentable for at least these additional reasons.

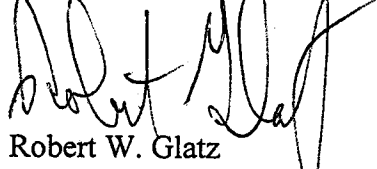
In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 9

Appellants further note that, despite specific requests from Appellants, the Examiner failed to provide an explanation of how the cited portions of Rose, relied on in the Final Action, support the rejections of Claims 3, 10-11, 25, 32-33, 38 and 45-46 or the rejections of Claims 4-5, 26-27 and 39-40. Appellants fail to understand how the Examiner was able to reach the conclusions relied on in the Final Action based on these excerpts.

### **III. Conclusion**

In light of the above discussion, Appellants submit that the cited reference combination does not disclose or suggest all of the recitations of the claims that are at issue on this appeal. Appellants further submit that the cited references may not be properly combined to result in the recitations of the claims on appeal. Accordingly, Appellants submit that the cited references do not render any of the pending claims obvious and, therefore, request reversal of the pending rejections and allowance of all the claims.

Respectfully submitted,

  
Robert W. Glatz  
Registration No. 36,811

**Customer Number:**



20792

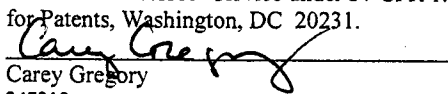
PATENT TRADEMARK OFFICE

#### CERTIFICATE OF EXPRESS MAILING

Express Mail Label No. EV015809324US

Date of Deposit: May 16, 2002

I hereby certify that this correspondence 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: BOX AF, Commissioner for Patents, Washington, DC 20231.

  
Carey Gregory  
247318

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 10

## APPENDIX A

1. A method for management of application programs on a network including a server and a client comprising the steps of:
  - installing a plurality of application programs at the server;
  - receiving at the server a login request from a user at the client;
  - establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized;
  - receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and
  - providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.
  
2. A method according to Claim 1 further comprising the steps of:
  - maintaining application management information for the plurality of applications at the server; and
  - wherein the establishing step includes the step of including a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information.
  
3. A method according to Claim 2 wherein the establishing a user desktop step includes the step of:
  - distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and
  - wherein the receiving a selection step includes the step of receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 11

4. A method according to Claim 3 wherein the maintaining step includes the step of maintaining configurable user preference information for the plurality of application programs at the server and wherein the providing an instance step includes the step of providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client.

5. A method according to Claim 4 wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and further comprising the step of updating the user preferences configurable by the user responsive to updates from the user and updating the user preferences not configurable by the user responsive to updates from the administrator.

6. A method according to Claim 3 wherein the application launcher programs are JAVA™ applets and the user desktop interface is a JAVA™ applet executed by a web browser.

7. A method according to Claim 1 wherein the establishing a user desktop step includes the steps of:

configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface; and

providing the user desktop interface and the associated information for the user desktop interface to the client for display.

8. A method according to Claim 7 wherein the configuring the user desktop step includes the step of configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized.



In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 12

9. A method according to Claim 1 wherein the receiving a selection step is followed by the step of determining a license availability for the selected one of the plurality of application programs for the user and wherein the providing step includes the step of providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user.

10. A method according to Claim 9 wherein the establishing a user desktop step includes the step of distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and wherein the receiving a selection step includes the step of receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the step of determining a license availability includes the step carried out by the one of the application launcher programs associated with the selected one of the plurality of application programs of obtaining the license availability from a license management server.

11. A method according to Claim 10 wherein the license management server is the server.

12. A method according to Claim 1 wherein the plurality of application programs are installed on a network drive accessible to the server.

13. A method according to Claim 1 further comprising the step of receiving at the server event logging information from the instance of the selected one of the plurality of application programs.

14. A method according to Claim 13 further comprising the step of providing the received event logging information to a network management server associated with the server.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 13

21. An application program management system for managing application programs on a network including a server and a client comprising:

- means for installing a plurality of application programs at the server;
- means for receiving at the server a login request from a user at the client;
- means for establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized;
- means for receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and
- means for providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.

23. A computer program product for managing application programs on a network including a server and a client, the computer program product comprising:

- a computer-readable storage medium having computer-readable program code means embodied in said medium, said computer-readable program code means comprising:
  - computer readable program code means for installing a plurality of application programs at the server;
  - computer readable program code means for receiving at the server a login request from a user at the client;
  - computer readable program code means for establishing a user desktop interface at the client associated with the user responsive to the login request from the user, the desktop interface including a plurality of display regions associated with a set of the plurality of application programs installed at the server for which the user is authorized;
  - computer readable program code means for receiving at the server a selection of one of the plurality of application programs from the user desktop interface; and
  - computer readable program code means for providing an instance of the selected one of the plurality of application programs to the client for execution responsive to the selection.

24. A system according to Claim 21 further comprising:

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 14

means for maintaining application management information for the plurality of applications at the server; and

wherein the means for establishing a user desktop includes means for including a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information.

25. A system according to Claim 24 wherein the means for establishing a user desktop includes:

means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and

wherein the means for receiving a selection includes means for receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs.

26. A system according to Claim 25 wherein the means for maintaining includes means for maintaining configurable user preference information for the plurality of application programs at the server and wherein the means for providing an instance includes means for providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client.

27. A system according to Claim 26 wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and further comprising means for updating the user preferences configurable by the user responsive to updates from the user and updating the user preferences not configurable by the user responsive to updates from the administrator.

28. A system according to Claim 25 wherein the application launcher programs are JAVA™ applets and the user desktop interface is a JAVA™ applet executed by a web browser.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 15

29. A system according to Claim 21 wherein the means for establishing a user desktop includes;

means for configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface; and

means for providing the user desktop interface and the associated information for the user desktop interface to the client for display.

30. A system according to Claim 29 wherein the means for configuring the user desktop includes means for configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized.

31. A system according to Claim 21 further comprising means for determining a license availability for the selected one of the plurality of application programs for the user and wherein the means for providing includes means for providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user.

32. A system according to Claim 31 wherein the means for establishing a user desktop includes means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and wherein the means for receiving a selection includes means for receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the means for determining a license availability includes means, associated with one of the application launcher programs associated with the selected one of the plurality of application programs, for obtaining the license availability from a license management server.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 16

33. A system according to Claim 32 wherein the license management server is the server.

34. A system according to Claim 21 wherein the plurality of application programs are installed on a network drive accessible to the server.

35. A system according to Claim 21 further comprising means for receiving at the server event logging information from the instance of the selected one of the plurality of application programs.

36. A system according to Claim 35 further comprising means for providing the received event logging information to a network management server associated with the server.

37. A computer program product according to Claim 23 further comprising:  
computer readable program code means for maintaining application management information for the plurality of applications at the server; and  
wherein the computer readable program code means for establishing a user desktop includes computer readable program code means for including a plurality of display regions associated with a set of the plurality of application programs for which the user is authorized responsive to the application management information.

38. A computer program product according to Claim 37 wherein the computer readable program code means for establishing a user desktop includes:  
computer readable program code means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client; and  
wherein the computer readable program code means for receiving a selection includes computer readable program code means for receiving the selection from a one of the

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 17

application launcher programs which is associated with the selected one of the plurality of application programs.

39. A computer program product according to Claim 38 wherein the computer readable program code means for maintaining includes computer readable program code means for maintaining configurable user preference information for the plurality of application programs at the server and wherein the computer readable program code means for providing an instance includes computer readable program code means for providing a set of the configurable user preference information associated with the user and the selected one of the plurality of application programs to the client.

40. A computer program product according to Claim 39 wherein the set of the configurable user preference information includes user preferences configurable by the user and user preferences not configurable by the user which are configurable by an administrator and further comprising computer readable program code means for updating the user preferences configurable by the user responsive to updates from the user and updating the user preferences not configurable by the user responsive to updates from the administrator.

41. A computer program product according to Claim 38 wherein the application launcher programs are JAVA™ applets and the user desktop interface is a JAVA™ applet executed by a web browser.

42. A computer program product according to Claim 23 wherein the computer readable program code means for establishing a user desktop includes;

computer readable program code means for configuring the user desktop interface responsive to an identifier of the user associated with the login request so as to provide associated information for the user desktop interface; and

computer readable program code means for providing the user desktop interface and the associated information for the user desktop interface to the client for display.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 18

43. A computer program product according to Claim 42 wherein the computer readable program code means for configuring the user desktop includes computer readable program code means for configuring the user desktop interface not to include display regions associated with any of the plurality of application programs installed at the server for which the user is not authorized.

44. A computer program product according to Claim 23 further comprising computer readable program code means for determining a license availability for the selected one of the plurality of application programs for the user and wherein the computer readable program code means for providing includes computer readable program code means for providing an unavailability indication to the client responsive to the selection if the license availability indicates that a license is not available for the user.

45. A computer program product according to Claim 44 wherein the computer readable program code means for establishing a user desktop includes computer readable program code means for distributing application launcher programs associated with each of the set of the plurality of application programs for which the user is authorized to the client and wherein the computer readable program code means for receiving a selection includes computer readable program code means for receiving the selection from a one of the application launcher programs which is associated with the selected one of the plurality of application programs and wherein the computer readable program code means for determining a license availability includes computer readable program code means, associated with one of the application launcher programs associated with the selected one of the plurality of application programs, for obtaining the license availability from a license management server.

46. A computer program product according to Claim 45 wherein the license management server is the server.

In re: Cox et al.  
Serial No. 09/211,528  
Filed: December 14, 1998  
Page 19

47. A computer program product according to Claim 23 wherein the plurality of application programs are installed on a network drive accessible to the server.

48. A computer program product according to Claim 23 further comprising computer readable program code means for receiving at the server event logging information from the instance of the selected one of the plurality of application programs.

49. A computer program product according to Claim 48 further comprising computer readable program code means for providing the received event logging information to a network management server associated with the server.



<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/211,528	COX ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	David A Wiley	2158	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to Appeal Brief.
2.  The allowed claim(s) is/are 1-14, 21 and 23-49.
3.  The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some\*    c)  None    of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.
5.  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - (a)  The translation of the foreign language provisional application has been received.
6.  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8.  CORRECTED DRAWINGS must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No. \_\_\_\_\_.
  - (b)  including changes required by the proposed drawing correction filed \_\_\_\_\_, which has been approved by the Examiner.
  - (c)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the top margin (not the back) of each sheet. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

9.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892)  | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3 <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)           | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____.   |
| 5 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. <u>6</u> . | 6 <input type="checkbox"/> Examiner's Amendment/Comment                    |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material   | 8 <input type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9 <input type="checkbox"/> Other   |

  
**DAVID WILEY**  
**PRIMARY EXAMINER**

### NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

The drawing(s) filed (insert date) 12/14/98 are:

A.  approved by the Draftsperson under 37 CFR 1.84 or 1.152.

B.  objected to by the Draftsperson under 37 CFR 1.84 or 1.152 for the reasons indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawing must be submitted according to the instructions on the back of this notice.

**1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings:**

Black ink. Color.

Color drawings are not acceptable until petition is granted.

Fig(s) \_\_\_\_\_

Pencil and non black ink not permitted. Fig(s) \_\_\_\_\_

**2. PHOTOGRAPHS. 37 CFR 1.84 (b)**

1 full-tone set is required. Fig(s) \_\_\_\_\_

Photographs not properly mounted (must use bristol board or photographic double-weight paper). Fig(s) \_\_\_\_\_

Poor quality (half-tone). Fig(s) \_\_\_\_\_

**3. TYPE OF PAPER. 37 CFR 1.84(e)**

Paper not flexible, strong, white, and durable.

Fig(s) \_\_\_\_\_

Erasures, alterations, overwritings, interlineations, folds, copy machine marks not accepted. Fig(s) \_\_\_\_\_

Mylar, velum paper is not acceptable (too thin).

Fig(s) \_\_\_\_\_

**4. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable sizes:**

21.0 cm by 29.7 cm (DIN size A4)

21.6 cm by 27.9 cm (8 1/2 x 11 inches)

All drawing sheets not the same size.

Sheet(s) \_\_\_\_\_

Drawing sheets not an acceptable size. Fig(s) \_\_\_\_\_

**5. MARGINS. 37 CFR 1.84(g): Acceptable margins:**

Top 2.5 cm Left 2.5cm Right 1.5 cm Bottom 1.0 cm

SIZE: A4 Size

Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm

SIZE: 8 1/2 x 11

Margins not acceptable. Fig(s) 1, 9, 10

Top (T)  Left (L)

Right (R)  Bottom (B)

**6. VIEWS. 37 CFR 1.84(h)**

REMINDER: Specification may require revision to correspond to drawing changes.

Partial views. 37 CFR 1.84(h)(2)

Brackets needed to show figure as one entity.

Fig(s) \_\_\_\_\_

Views not labeled separately or properly.

Fig(s) \_\_\_\_\_

Enlarged view not labeled separately or properly.

Fig(s) \_\_\_\_\_

**7. SECTIONAL VIEWS. 37 CFR 1.84 (h)(3)**

Hatching not indicated for sectional portions of an object.

Fig(s) \_\_\_\_\_

Sectional designation should be noted with Arabic or Roman numbers. Fig(s) \_\_\_\_\_

**8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)**

Words do not appear on a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s) \_\_\_\_\_

**9. SCALE. 37 CFR 1.84(k)**

Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in reproduction.

Fig(s) \_\_\_\_\_

**10. CHARACTER OF LINES, NUMBERS, & LETTERS.**

37 CFR 1.84(i)

Lines, numbers & letters not uniformly thick and well defined, clean, durable, and black (poor line quality).

Fig(s) 9, 10

**11. SHADING. 37 CFR 1.84(m)**

Solid black areas pale. Fig(s) \_\_\_\_\_

Solid black shading not permitted. Fig(s) \_\_\_\_\_

Shade lines, pale, rough and blurred. Fig(s) \_\_\_\_\_

**12. NUMBERS, LETTERS, & REFERENCE CHARACTERS.**

37 CFR 1.84(p)

Numbers and reference characters not plain and legible.

Fig(s) \_\_\_\_\_

Figure legends are poor. Fig(s) \_\_\_\_\_

Numbers and reference characters not oriented in the same direction as the view. 37 CFR 1.84(p)(1)

Fig(s) \_\_\_\_\_

English alphabet not used. 37 CFR 1.84(p)(2)

Fig(s) \_\_\_\_\_

Numbers, letters and reference characters must be at least .32 cm (1/8 inch) in height. 37 CFR 1.84(p)(3)

Fig(s) \_\_\_\_\_

**13. LEAD LINES. 37 CFR 1.84(q)**

Lead lines cross each other. Fig(s) \_\_\_\_\_

Lead lines missing. Fig(s) \_\_\_\_\_

**14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(i)**

Sheets not numbered consecutively, and in Arabic numerals beginning with number 1. Sheet(s) \_\_\_\_\_

**15. NUMBERING OF VIEWS. 37 CFR 1.84(u)**

Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s) \_\_\_\_\_

**16. CORRECTIONS. 37 CFR 1.84(w)**

Corrections not made from prior PTO-948 dated \_\_\_\_\_

**17. DESIGN DRAWINGS. 37 CFR 1.152**

Surface shading shown not appropriate. Fig(s) \_\_\_\_\_

Solid black shading not used for color contrast.

Fig(s) \_\_\_\_\_

**COMMENTS**

REVIEWER LAM

DATE 03/23/99

TELEPHONE NO. (703) 308-0366

ATTACHMENT TO PAPER NO. 16

## INFORMATION ON HOW TO EFFECT DRAWING CHANGES

### 1. Correction of Informalities--37 CFR 1.85

File new drawings with the changes incorporated therein. The application number or the title of the invention, inventor's name, docket number (if any), and the name and telephone number of a person to call if the Office is unable to match the drawings to the proper application, should be placed on the back of each sheet of drawings in accordance with 37 CFR 1.84(c). Applicant may delay filing of the new drawings until receipt of the Notice of Allowability (PTOL-37). Extensions of time may be obtained under the provisions of 37 CFR 1.136. The drawing should be filed as a separate paper with a transmittal letter addressed to the Drawing Processing Branch.

### 2. Timing for Corrections

Applicant is required to submit **acceptable** corrected drawings within the three-month shortened statutory period set in the Notice of Allowability (PTOL-37). If a correction is determined to be unacceptable by the Office, applicant must arrange to have acceptable corrections resubmitted within the original three-month period to avoid the necessity of obtaining an extension of time and paying the extension fee. Therefore, applicant should file corrected drawings as soon as possible.

Failure to take corrective action within set (or extended) period will result in **ABANDONMENT** of the Application.

### 3. Corrections other than Informalities Noted by the Drawing Review Branch on the Form PTO-948

All changes to the drawings, other than informalities noted by the Drawing Review Branch, **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.



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NOTICE OF ALLOWANCE AND FEE(S) DUE

20792 7590 08/13/2002
MYERS BIGEL SIBLEY & SAJOVEC
PO BOX 37428
RALEIGH, NC 27627

Table with 2 columns: EXAMINER (WILEY, DAVID ARMAND), ART UNIT (2158), CLASS-SUBCLASS (709-229000)

DATE MAILED: 08/13/2002

Table with 5 columns: APPLICATION NO. (09/211,528), FILING DATE (12/14/1998), FIRST NAMED INVENTOR (DAVID E. COX), ATTORNEY DOCKET NO. (5577-130), CONFIRMATION NO. (9791)

TITLE OF INVENTION: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON A NETWORK

Table with 6 columns: APPLN. TYPE (nonprovisional), SMALL ENTITY (NO), ISSUE FEE (\$1280), PUBLICATION FEE (\$0), TOTAL FEE(S) DUE (\$1280), DATE DUE (11/13/2002)

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above. If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

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_____ (Signature)
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/211,528	12/14/1998	DAVID E. COX	5577-130	9791

TITLE OF INVENTION: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON A NETWORK

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1280	\$0	\$1280	11/13/2002

EXAMINER	ART UNIT	CLASS-SUBCLASS
WILEY, DAVID ARMAND	2158	709-229000

<p>1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).</p> <p><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.</p> <p><input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.</p>	<p>2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.</p> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p>
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Please check the appropriate assignee category or categories (will not be printed on the patent)  individual  corporation or other private group entity  government

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/211,528	12/14/1998	DAVID E. COX	5577-130	9791
20792	7590	08/13/2002	EXAMINER	
MYERS BIGEL SIBLEY & SAJOVEC PO BOX 37428 RALEIGH, NC 27627 UNITED STATES			WILEY, DAVID ARMAND	
			ART UNIT	PAPER NUMBER
			2158	

DATE MAILED: 08/13/2002

**Determination of Patent Term Extension under 35 U.S.C. 154 (b)**  
(application filed after June 7, 1995 but prior to May 29, 2000)

The patent term extension is 0 days. Any patent to issue from the above identified application will include an indication of the 0 day extension on the front page.

If a continued prosecution application (CPA) was filed in the above-identified application, the filing date that determines patent term extension is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) system. (<http://pair.uspto.gov>)



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09/211,528 12/14/1998 DAVID E. COX 5577-130 9791

20792 7590 08/13/2002
MYERS BIGEL SIBLEY & SAJOVEC
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UNITED STATES

EXAMINER

WILEY, DAVID ARMAND

ART UNIT PAPER NUMBER

2158

DATE MAILED: 08/13/2002

Notice of Fee Increase on October 1, 2002

If a reply to a "Notice of Allowance and Fee(s) Due" is filed in the Office on or after October 1, 2002, then the amount due may be higher than that set forth in the "Notice of Allowance and Fee(s) Due" since there will be an increase in fees effective on October 1, 2002. See Revision of Patent and Trademark Fees for Fiscal Year 2003: Notice of Proposed Rulemaking, 67 Fed. Reg. 30634, 30636 (May 7, 2002). Although a change to the amount of the publication fee is not currently proposed for October 2002, if the issue fee or publication fee is to be paid on or after October 1, 2002, applicant should check the USPTO web site for the current fees before submitting the payment. The USPTO Internet address for the fee schedule is: http://www.uspto.gov/main/howtofees.htm.

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Effective October 1, 2002, 37 CFR 1.18 is proposed to be revised to change the patent issue fees as set forth below. As stated above, the final fees may be a different amount, and applicant should check the web site given above when paying the fee.

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Attorney Docket No. 5577-130

PATENT

JC  
NS  
#17

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Cox et al.

Group Art Unit: 2158

Serial No.: 09/211,528

Examiner: David A. Wiley

Filed: December 14, 1998

Confirmation No.: 9791

For: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR  
CENTRALIZED MANAGEMENT OF APPLICATION PROGRAMS ON A  
NETWORK

September 5, 2002

Box ISSUE FEE

Assistant Commissioner for Patents

Washington, DC 20231

Attn: Drawing Review Branch

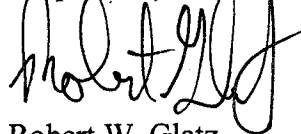
SUBMITTAL OF FORMAL DRAWINGS

Sir:

In response to the requirement for new drawings as set forth in Paper No. 16 in the above application, there is enclosed herewith one set (9 sheets) of new formal drawings.

It is requested that these new drawings be substituted for the originally filed informal drawings.

Respectfully submitted,



Robert W. Glatz

Registration No. 36,811

Myers Bigel Sibley & Sajovec

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Raleigh, North Carolina 27627

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FIG. 1

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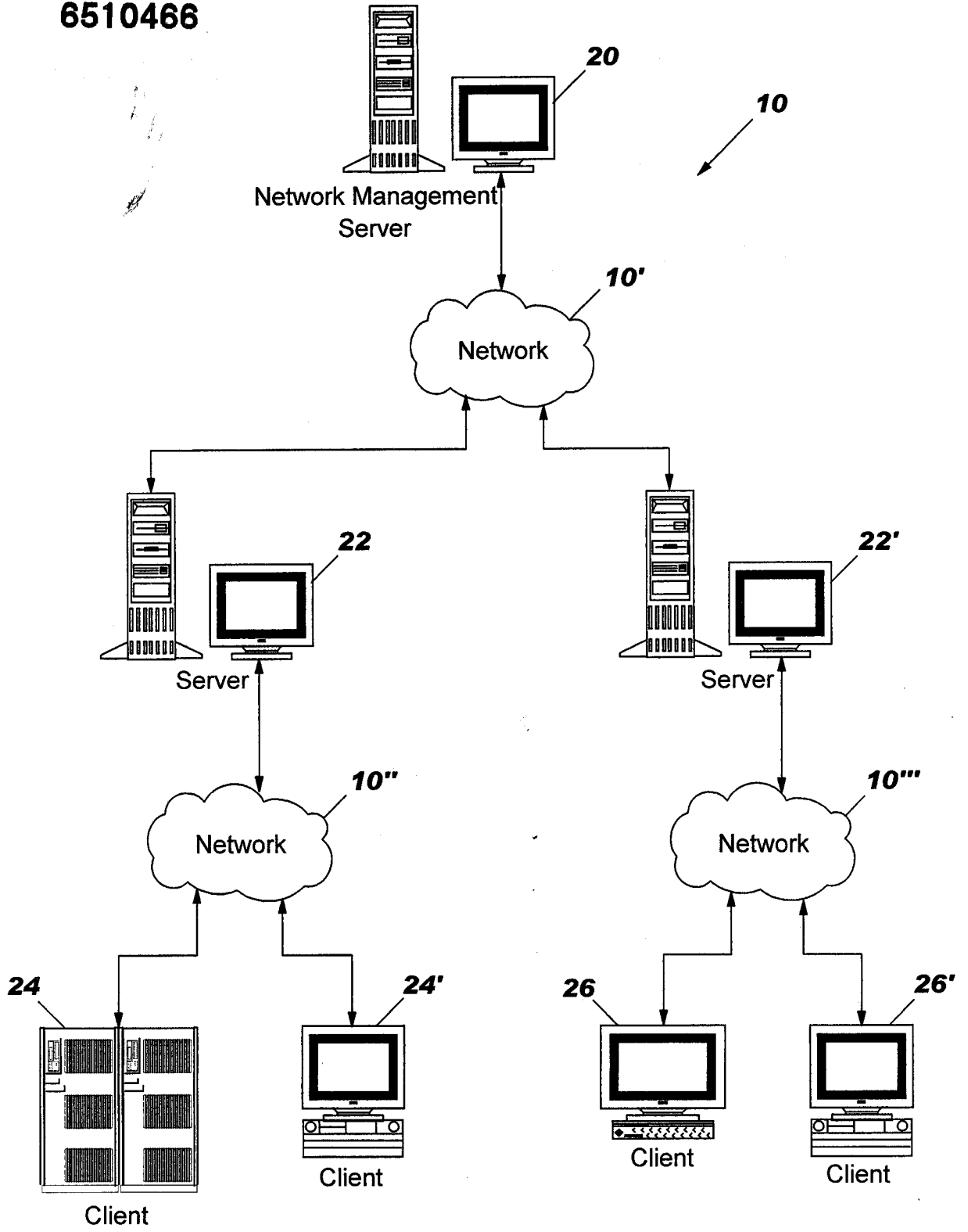


FIG. 2

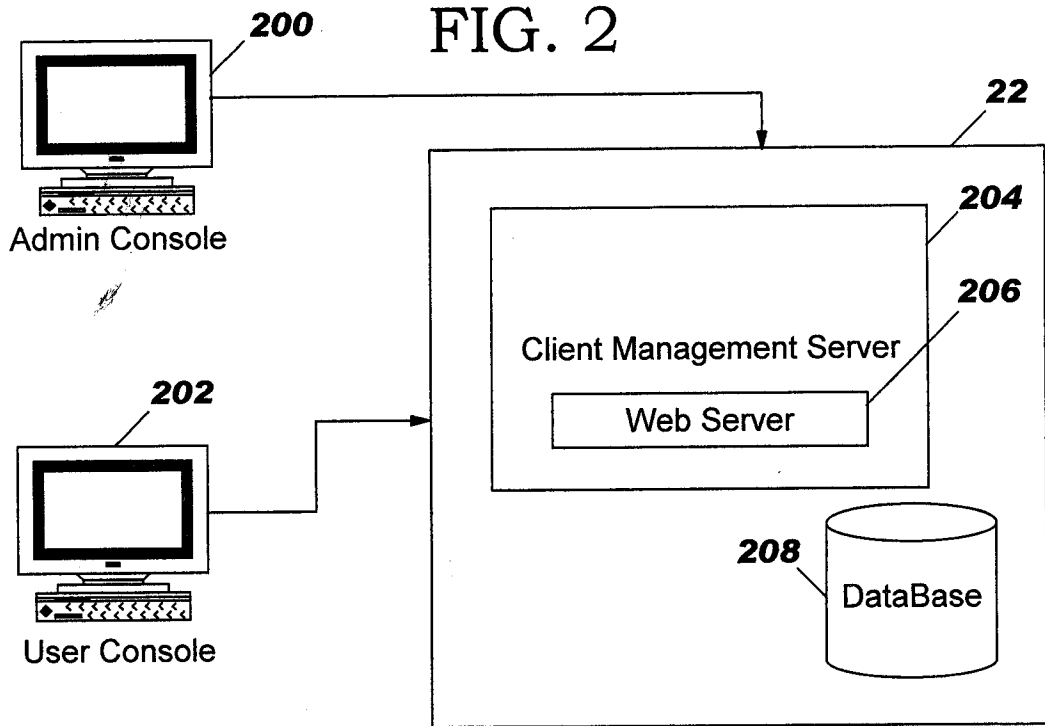


FIG. 3

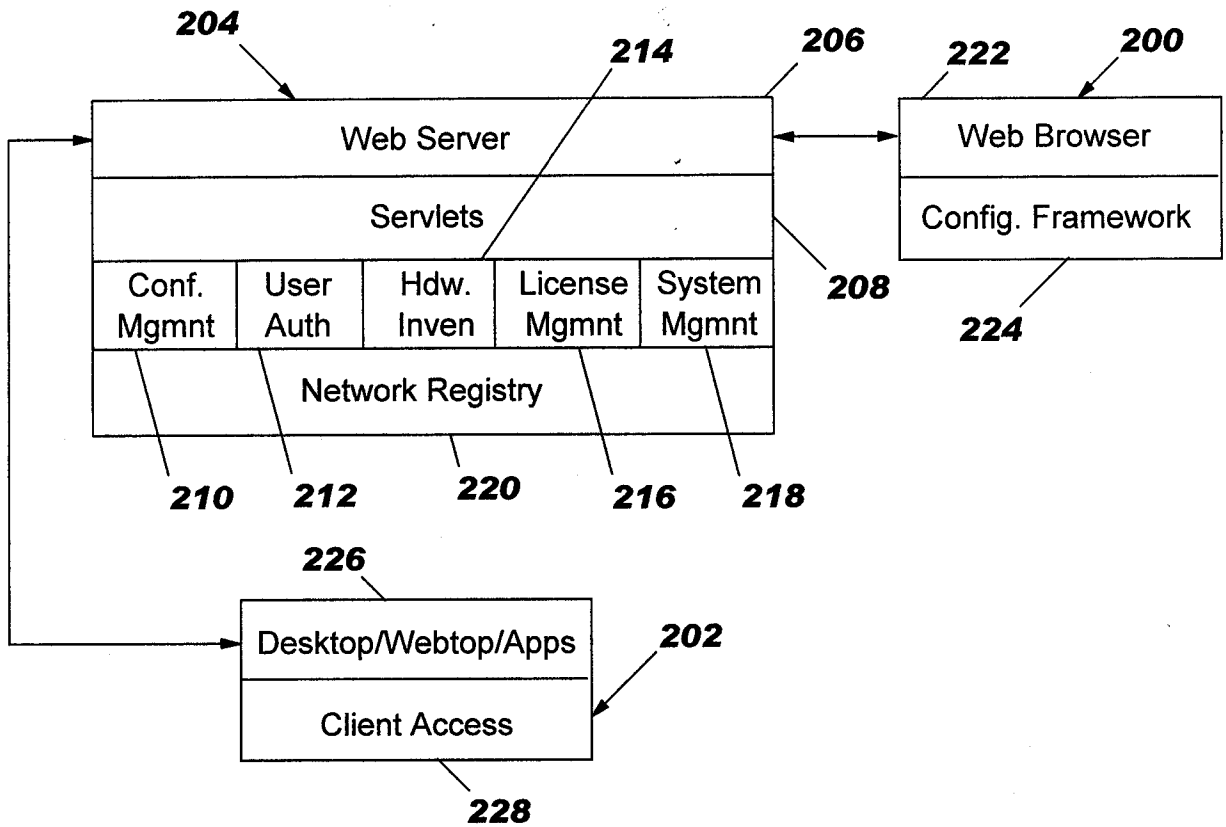


FIG. 4

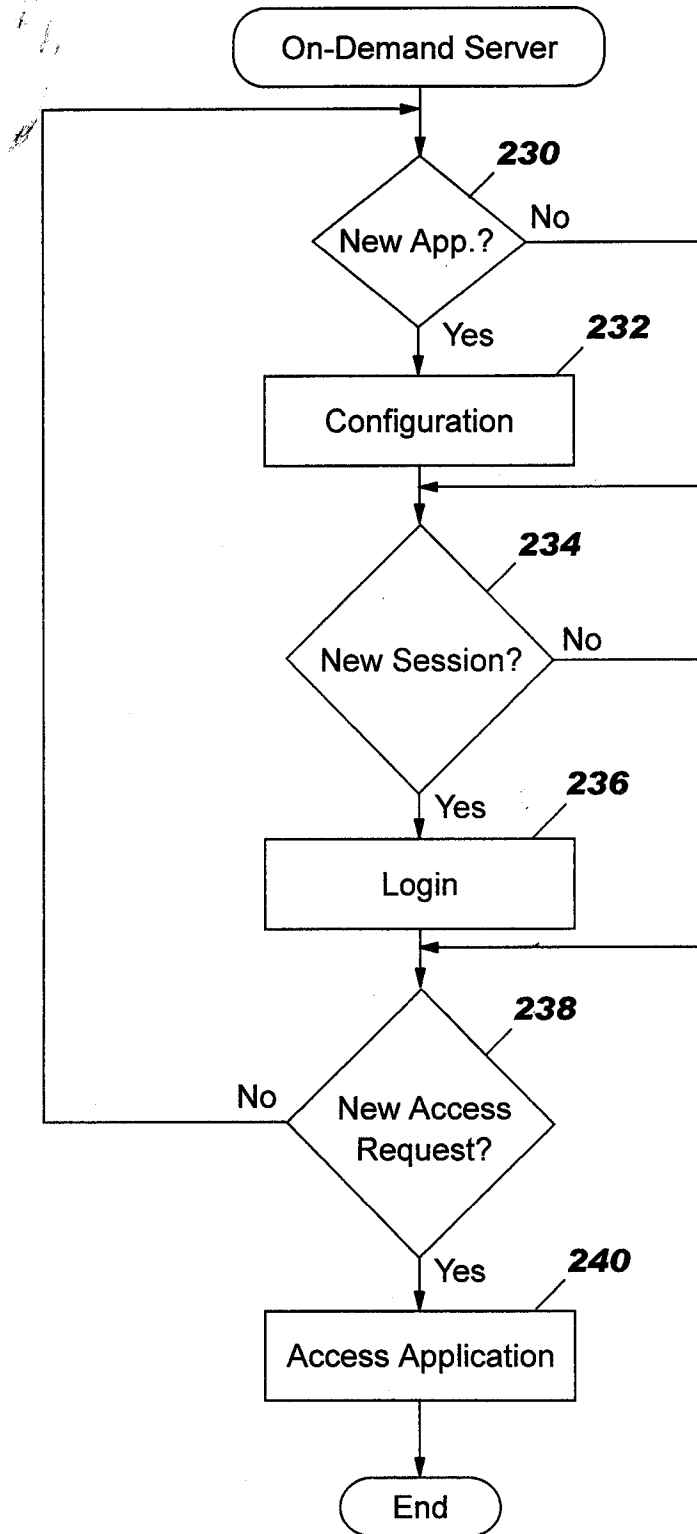


FIG. 5

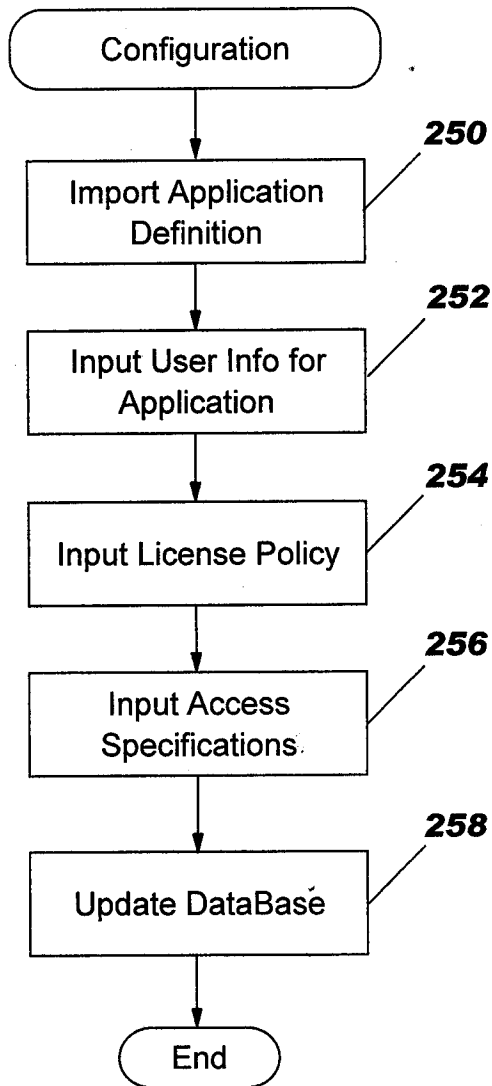


FIG. 6

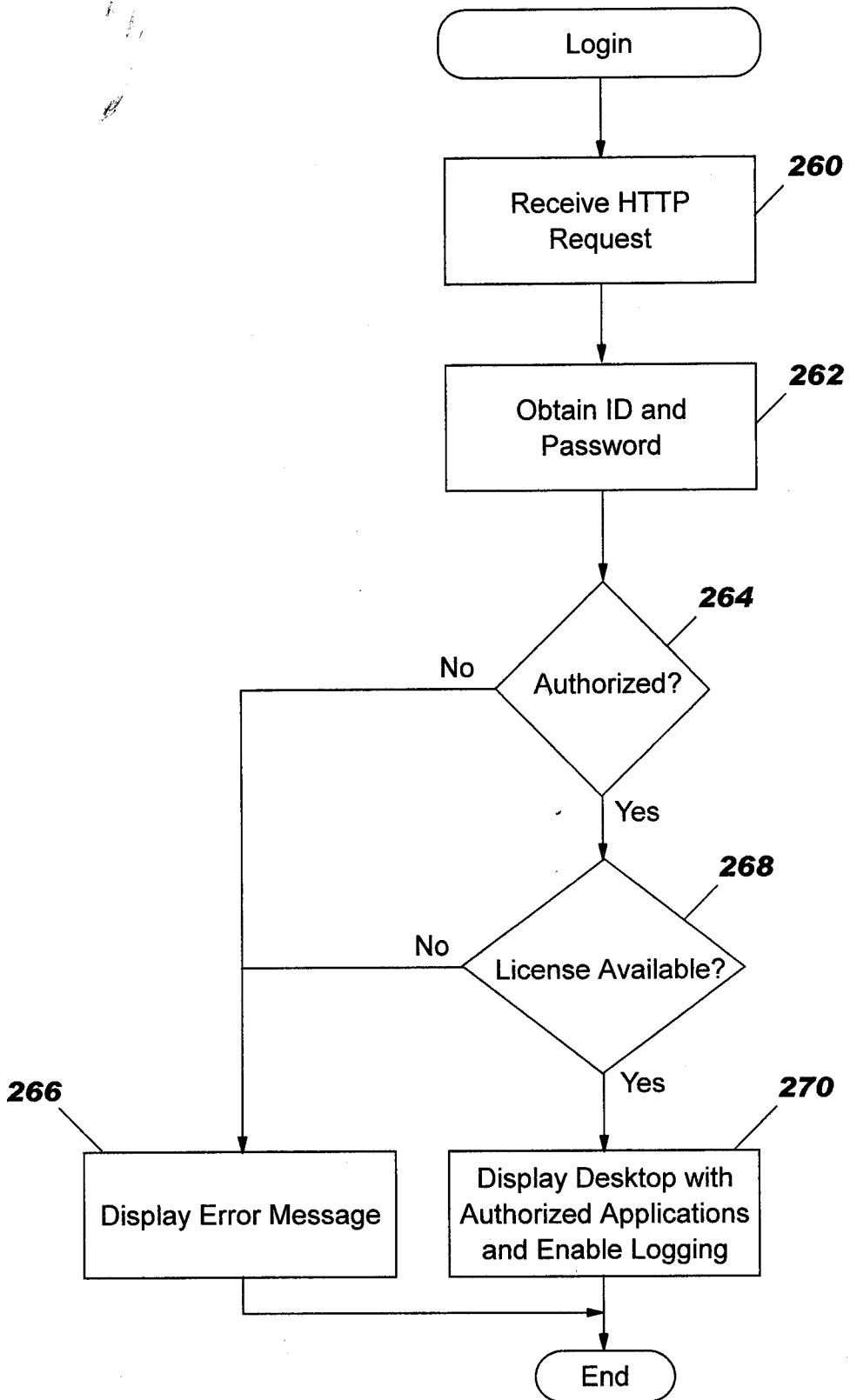


FIG. 7

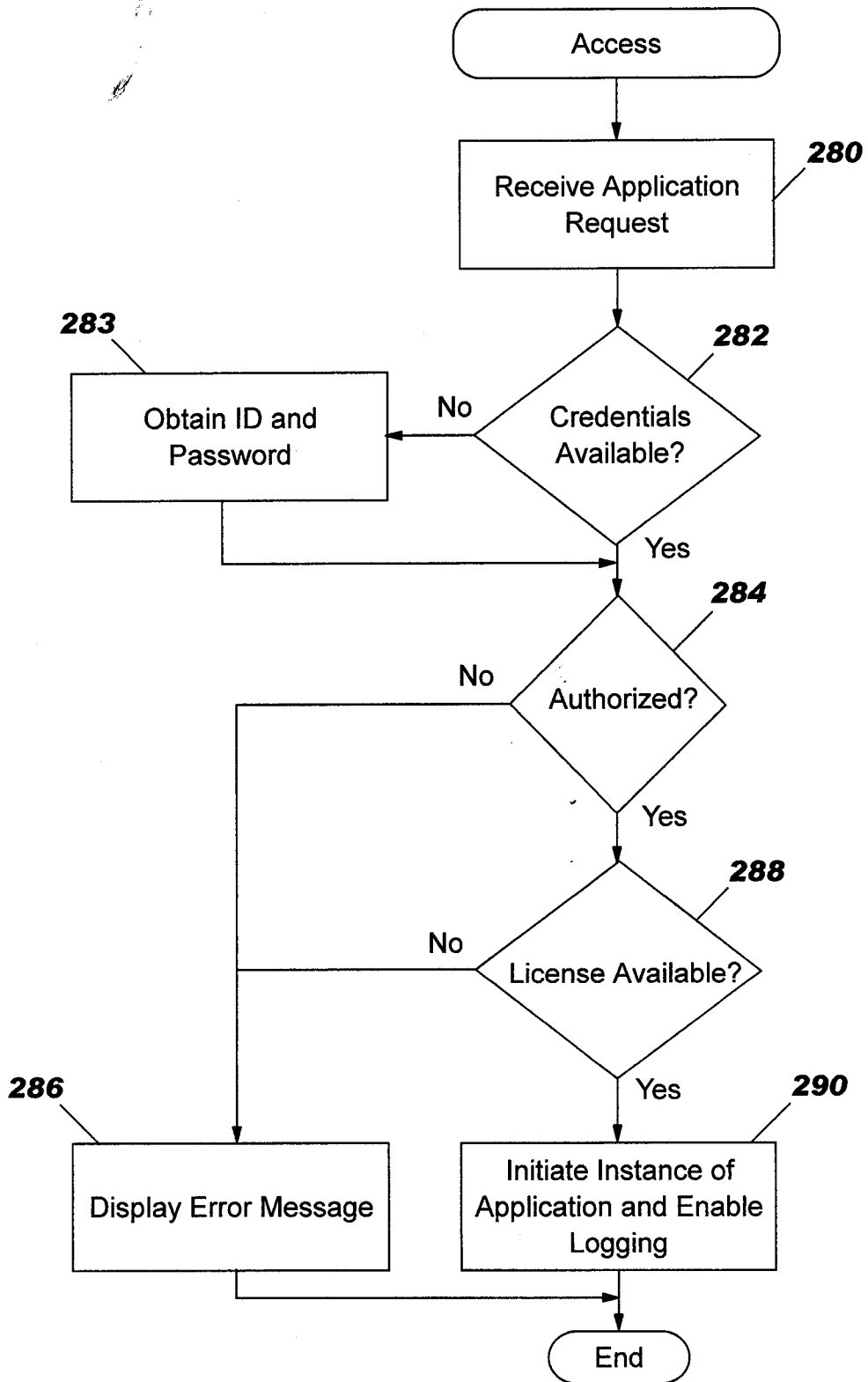
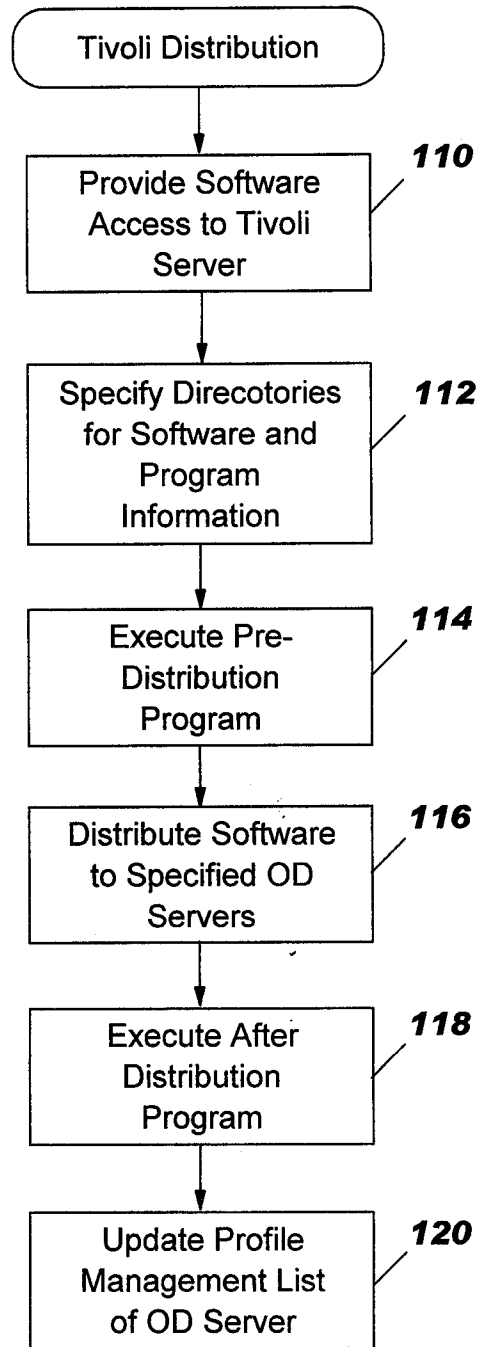
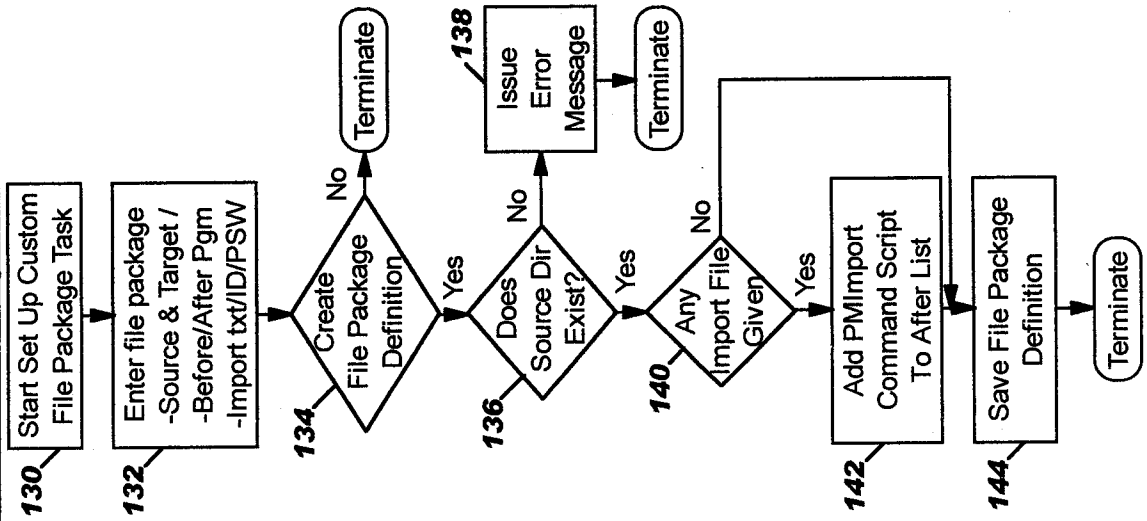


FIG. 8



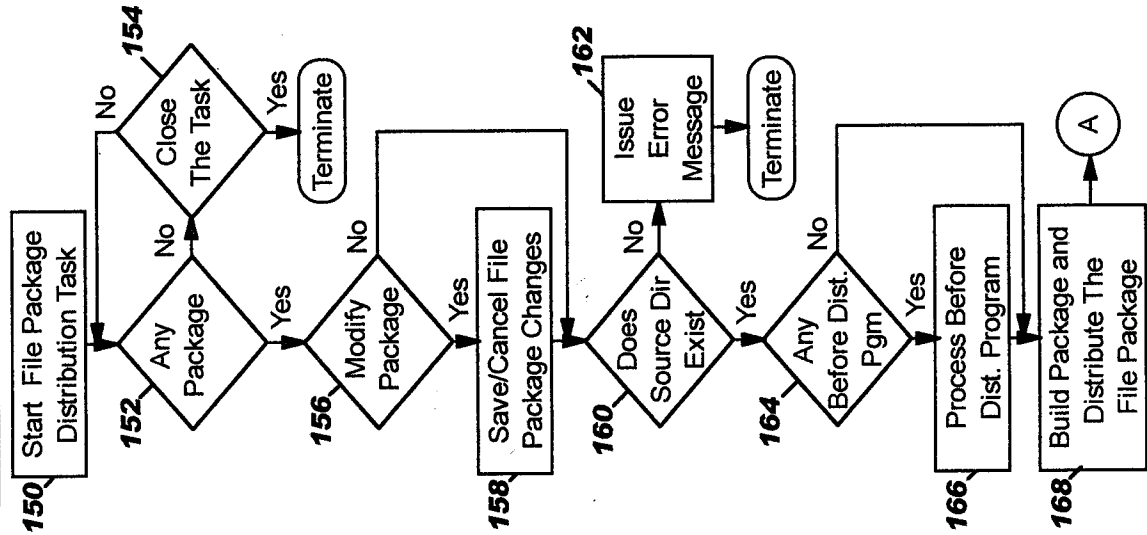
**FIG. 9A**

Create File Package Definition



**FIG. 9B**

Distribute File Package



**FIG. 9C**

Register Package Contents

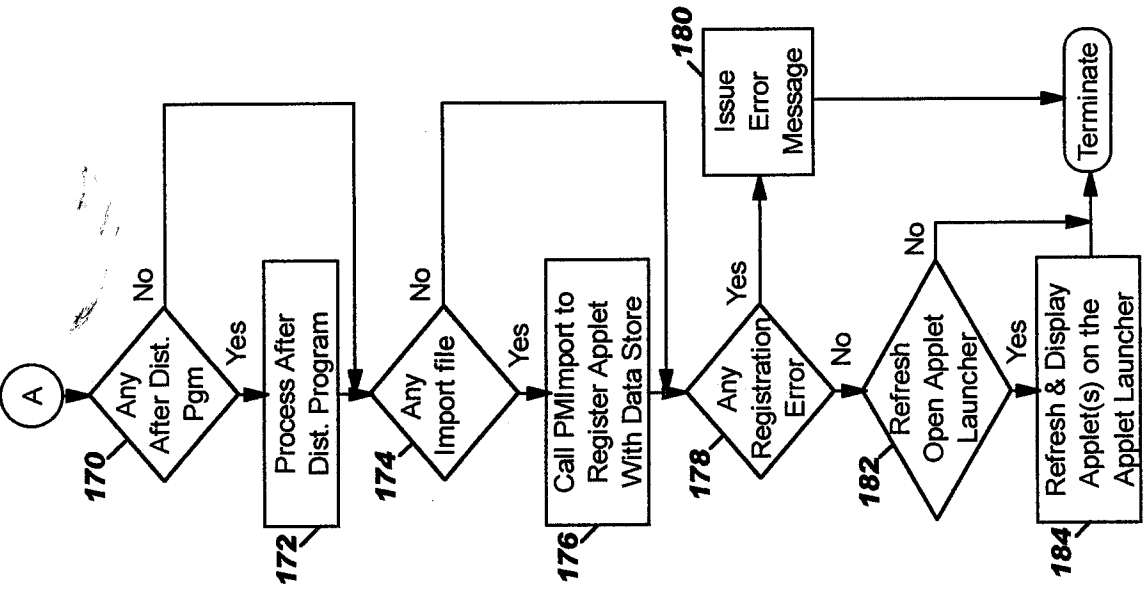




FIG. 10

Set Up Custom File Package (ON-DEMAND SERVER)

Custom Package File

Host Name cowboy3

Source Path d:\My\_Applets

Package Name Slick Applets

Target Path c:\

Program to Run before Distribution d:\Check\_DiskSpace.sh

Program to Run after Distribution c:\My\_Applets\My\_Setup.sh

On-Demand Server Profile Management

Import File Name c:\My\_Applets\My\_Applet\Import.txt

UserID Abdi

User Password

Log File Path d:\My\_Logs\My\_Setup.Log

Set and Close Cancel Help



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Table with columns: APPLN. TYPE, SMALL ENTITY, ISSUE FEE, PUBLICATION FEE, TOTAL FEE(S) DUE, DATE DUE.

Table with columns: EXAMINER, ART UNIT, CLASS-SUBCLASS.

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- 1 Myers Bigel Sibley & Sajovec
2
3 Jeanine S. Ray-Yarletts

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(A) NAME OF ASSIGNEE International Business Machines Corporation (B) RESIDENCE: (CITY and STATE OR COUNTRY) Armonk, New York

Please check the appropriate assignee category or categories (will not be printed on the patent) individual corporation or other private group entity government

4a. The following fee(s) are enclosed:

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The Commissioner is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number 09-9461 (enclose an extra copy of this form).

Commissioner for Patents is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

(Authorized Signature) Robert W. Gate, Reg. 56,811 (Date) 9/5/02

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<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Effective November 10, 1998	Application or Docket Number
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CLAIMS AS FILED - PART I		
	(Column 1)	(Column 2)
FOR	NUMBER FILED	NUMBER EXTRA
BASIC FEE		
TOTAL CLAIMS	23 minus 20 = *	3
INDEPENDENT CLAIMS	6 minus 3 = *	3
MULTIPLE DEPENDENT CLAIM PRESENT		

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CLAIMS AS AMENDED - PART II				
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	Independent	* 3	Minus	*** 6 =
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	Independent	*	Minus	*** =
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	(Column 1)	(Column 2)	(Column 3)	
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	Independent	*	Minus	*** =
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

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 \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."  
 \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."  
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X\$ 9=		OR	X\$18=	54
X39=		OR	X78=	234
+130=		OR	+260=	
TOTAL		OR	TOTAL	1098

SMALL ENTITY TYPE <input type="checkbox"/>		OR	OTHER THAN SMALL ENTITY	
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X39=		OR	X78=	
+130=		OR	+260=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	342 <sup>pl</sup>

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X39=		OR	X78=	
+130=		OR	+260=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
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XP 00059178

p 6-14 = (9)

# A Common Desktop Environment for Platforms Based on the UNIX<sup>®</sup> Operating System

p.d. 04-1996

User interface technologies from four companies have been combined to create a single UNIX desktop standard that provides a common look and feel for end users and a common set of tools for system administrators and application developers.

by Brian E. Cripe, Jon A. Brewster, and Dana E. Laursen

Until the early 1980s most users interacted with their computers via character-mode interfaces—they typed in commands. What happened to change all this was the arrival of proprietary window systems. HP's first window system was embedded in the Integral Personal Computer.<sup>1</sup> By 1988 the X Window System had been adopted as a standard for machines running the UNIX operating system. However, available user interface toolkits, such as HP's CXI widgets, were proprietary. These toolkits provided items such as scroll bars and pop-up menus, and they allowed software developers to create applications that had a consistent look and feel. By 1990 two stable toolkits had emerged, OSF/Motif and OpenLook.<sup>1</sup>

The stage was now set for proprietary user environments. A user environment is a collection of programs used by the end user to manage files, invoke applications, and perform routine tasks such as edit text files and send and receive email. HP delivered its first version of HP VUE (Visual User Environment)<sup>2</sup> in 1990 with subsequent upgrades continuing to this day.

In March of 1993 representatives from Hewlett-Packard, IBM, Sun Microsystems, and Novell agreed to create a common user environment for UNIX platforms (see the article on page 50). This joint initiative resulted in the specification and development of the Common Desktop Environment (CDE). CDE accomplishes two things: first, it adopts OSF/Motif as the principal user interface toolkit for UNIX systems, and second, it establishes this rich new environment and framework as a standard user environment.

CDE is based on the X Window System from the X Consortium and the Motif graphical user interface from the Open Software Foundation. Fig. 1 shows how these technologies fit together.

- The X Window System (X) components include:
- X server. This program writes directly to the user's display hardware.
  - Xlib. This is a library of function calls for communicating with the X server. Xlib deals with low-level concepts such as

rectangles, arcs, and fonts. It does not know about higher-level concepts such as menus and scroll bars (i.e., interface widgets).

- X protocol. This is the data stream that communicates between Xlib and the X server. This data stream can be passed across a network, which gives X the ability to run an application on one system and display the user interface to another system.
- Xt. This is the X toolkit, which provides a framework for defining and integrating user interface widgets.

The Motif component is Xm, which is the Motif library that provides a rich collection of user interface widgets such as dialog boxes, menus, buttons, scroll bars, and text editing panes.

## Different Views of CDE

The rest of this article provides an overview of CDE from three different perspectives: the end user who uses CDE but does not care about its internal design, the software developer who is writing applications that need to be integrated with CDE, and the system administrator who is responsible for managing systems that run CDE.

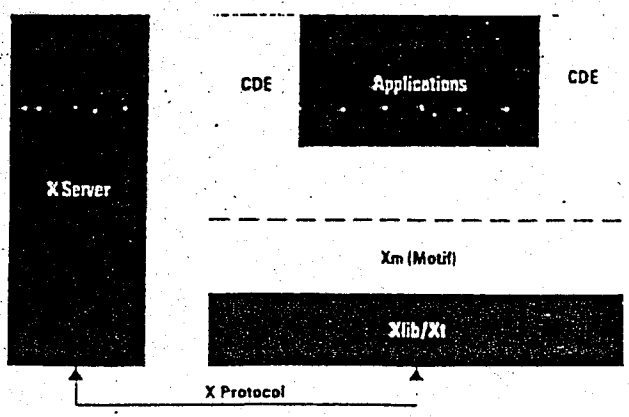


Fig. 1. CDE architecture

<sup>1</sup>OpenLook is the X Window System toolkit from Sun Microsystems.

### End-User's View

Putting together a user environment and application framework such as CDE always forces one to be precise about requirements. Many of the driving inputs for the CDE project turned out to be based on the following end-user requirements:

- **Completeness.** CDE needs to be a full-service environment covering everything from login to logout. This includes security and authentication, windowing, application launching, file management, email, and so on.
- **Integration.** CDE parts and services need to work together seamlessly. For example, it should be possible to mail a meeting notice with a calendar appointment in it, allowing the recipients to add the event easily to their calendars. Also, CDE utilities need to use CDE APIs (e.g., help, drag and drop, etc.) not only to be consistent with each other, but to be showcase components showing the results of proper use.
- **Compatibility.** Previous applications need to continue to run. This is true for OpenLook, Motif, and terminal-based software. For HP VUE users, we were very interested in ensuring that conversion tools could be created to move configuration information into CDE.
- **Ease of use.** The resulting environment needs to be guided by a standard set of usability principles and tested for usability defects. This work took place at the early stages and during every step of the CDE project.

Getting agreement on these fundamental end-user requirements was critical given the nature of our extended multi-company development team. Many of the more difficult project decisions required coming back to these basics. For example, the drag and drop architecture had to be reworked

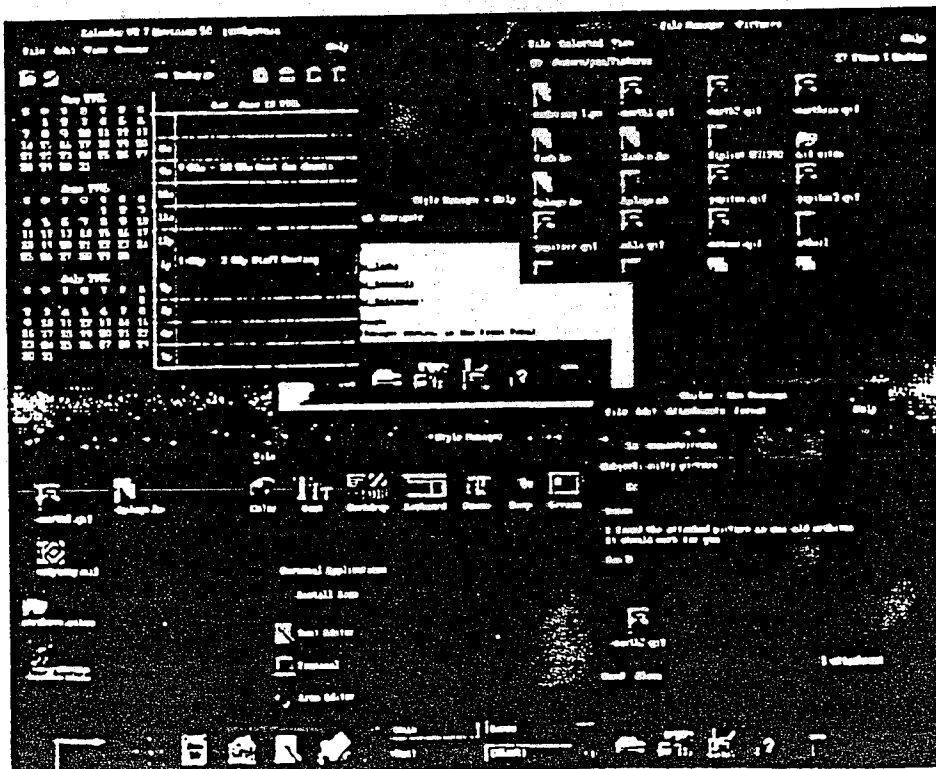
several times to accomplish the integration ambitions of the team.

The cover of this issue and Fig. 2 show a typical CDE user interface, and Table 1 lists all the end-user components, some of which are shown in Fig. 1.

### Basic End-User Tasks

The first thing a user does when approaching CDE is log in. It is the CDE login service that authenticates and authorizes user access to the system. This gatekeeper for the UNIX system then invokes the basic session components such as the window manager and file manager. The user's previous session can also be automatically restored. This allows items such as running applications, color settings, and the graphical desktop arrangement to be retained from the logout of the previous session.

Once the user is logged in, the file manager is used to find and organize data files. Files can be dragged out of the file manager and dropped in many interesting places such as the printer. Files can be moved and copied by dragging them about. File icons can be placed on the main screen as if the screen were a desktop. A file's type (document, spreadsheet, image, etc.) can be determined by its icon, and various type-specific actions can be invoked via a pop-up menu that is made available for each icon. For example, editing a graphics image and viewing that same image might require two different applications and thus two different actions in the pop-up actions menu. The file manager also allows different views of the file directories, such as a tree view (containment hierarchy) and a full file properties view (size, security, etc.). Files can be found by manually browsing through the



Front Panel

Fig. 2. A typical CDE user interface.

Table 1  
End-User Components

Component	Function
Login Manager	Graphical login and authentication
Session Manager	Logout to login session save and restore
Window Manager	X11 Windows compliant window manager
Workspace Manager	Window grouping and task switching
Front Panel	Ubiquitous services access and workspace switching
Style Manager	Customization and configuration
File Manager	File manipulation services
Application Manager	Application discovery and launch services
Text Editor	ASCII text file editor
Icon Editor	File type icon creator and editor
Mailer	Full MIME compliant multipart email facility
Calendar	Personal and group time manager
Calculator	Financial, logical, and scientific modes
Terminal Emulator	VT220 type character mode support
Action Creator	Linking behavior to specific icons
Print Manager	Multiprinter-aware print submission tool

directories or via a finding service that works with name or content matching. A found file can then be automatically placed on the desktop.

Applications can be launched in a number of ways. Simply double-clicking a data file icon and allowing CDE to launch the correct application with that data file as its argument is usually the most convenient approach. However, sometimes running an application directly is more appropriate. The applications themselves also show up as icons that can be moved about, organized, and double-clicked for invocation. These application icons are initially found in the application manager, which is really just a file manager window onto the applications directory. A user can drag the application icons into any other directory or even onto the desktop. For important and commonly used applications, the icon can be directly installed into the front panel for easy access.

The article on page 15 describes the data structures involved in linking applications, icons, and actions together.

Task management in CDE is much like any other windowing environment in that it has various ways to control the windowing behavior of the running applications. However, there is a major enhancement in CDE called *workspaces*. The multiple-workspace paradigm supported by CDE allows a user to switch between multiple screens full of application windows. This allows each collection of windows to be treated as a group (the default is four workspaces). End users can use workspaces to collect together groups of windows

for specific tasks. For example, one workspace could contain all the windows associated with a remote system, while another workspace could contain windows for the user's desktop publishing tools.

Workspace switching is very fast, typically less than a few tenths of a second, and is accomplished by pressing a single button within the front panel. Each workspace has its own backdrop, which is usually color-coded to match its button. The workspaces are also named and can be created and destroyed at any time by the user.

The front panel is usually located at the bottom of the screen (see Fig. 2). It is available in all workspaces and provides access to important and frequently used services. These services include:

- Clock and calendar functions
- Personal file space (file manager access)
- General application space (application manager access)
- High-use application and data file access
- Mail facilities
- Workspace management controls
- Printer access
- CDE configuration controls
- Help facilities
- Trash can for deleting files
- Screen locking and logout services.

The front panel is a unifying tool for collecting important services that are otherwise left scattered and hard to find. It is also a distinctive visual feature known to the development team as a *signature visual* in that it distinguishes the machine running CDE from other machines.

#### End-User CDE Utilities

CDE has a number of utility programs that support specific end-user tasks. The following are some of these utilities.

**Text Editor.** This is a simple ASCII text editor that is neatly integrated into CDE so that drag and drop, help, and general Motif text behavior are seamlessly available to the end user. Text formatting, spell checking, and cut and paste services are also available.

**Mailer.** This is a highly integrated set of services that has full drag and drop behavior with respect to folders, messages, and attachments. The following scenario illustrates the services integrated with the mailer.

The front panel's mail icon is pressed, bringing up the user's in-box. A message is dragged from the in-box to the front panel's printer icon. Another message is dragged to a mail folder icon within a file manager for saving. A file is dragged from the file manager to the mail icon on the front panel for sending. Finally, a message being read has a graphics attachment that is double-clicked to invoke the graphics viewer.

Thus, from the CDE mailer the user can print a message, save a message to a file, view the graphics in a message, and compose and send a message.

**Calendar.** The calendar facility is a personal tool for managing time and to-do items. It is "group aware" so that the user can examine and search for meeting opportunities with colleagues. Individuals can control the privacy of their own schedules. Meetings can be emailed via the drag and drop

mechanism, and the calendar view can be flipped between day, week, month, and six-month views.

**Terminal.** This tool supports character-mode applications (some of which predate window systems). The CDE terminal emulator behaves like a DEC VT220 terminal with minor changes consistent with ANSI and ISO standards. Full cut and paste behavior with the rest of the desktop is built in. The core feature of this emulator traces its ancestry back to HP's Integral Personal Computer, which had HP's first windowing system and thus HP's first terminal emulator for the UNIX operating system.

#### Software Developer's View of CDE

To the software developer, CDE is composed of two distinct components: the X/Open<sup>®</sup> standard and CDE product implementations. The X/Open standard defines the components that must be present on any system that claims to be CDE-compliant. HP's CDE product, like CDE products from other vendors, must support the interfaces defined by the X/Open CDE standard, but may contain additional functionality. For example, many vendors have enhanced CDE to provide backward compatibility with previous proprietary products. Software developers should be cautious when using features of a CDE product that are not part of the X/Open standard because they may not be portable to all CDE systems.

The major benefits that CDE provides to the developer are:

- A single GUI toolkit (OSF/Motif) that is supported by all major UNIX vendors
- Tools and libraries to help build an application
- Mechanisms to integrate an application with the desktop environment
- Mechanisms to integrate applications with each other.

Table II lists the components available in CDE that enable developers to integrate their applications into CDE. Appendix A, on page 11, contains a complete list of all the CDE APIs, which enable developers to build applications based on CDE.

CDE defines three levels of application integration from which the developer can choose: basic, recommended, and optional. Basic integration consists of the minimal integration steps that allow a user to access an application from the desktop environment instead of a command prompt in a terminal window. Recommended integration requires more effort by the developer but allows the application to be fully consistent with CDE and other CDE applications. The final level, optional integration, is not necessary for most applications but is useful for applications that need to perform specialized tasks.

#### Basic Integration

Basic integration allows an application and its data files to be managed by CDE. This management includes:

- Finding the application and invoking it using an icon in the application manager
- Identifying the application's data files with a unique icon
- Loading a data file into the application by dragging and dropping the file icon on the application icon
- Invoking the application to print a data file by dragging and dropping the file icon on a printer icon
- Using the style manager to specify colors and fonts for the application

Table II  
Developer Components

Component	Purpose
Help System	Viewer, API, and administration tools
Motif Toolkit	OSF/Motif version 1.2.3 plus some 1.2.4 repairs
Custom Widgets	SpinButton and ComboBox (taken from Motif 2.0)
Terminal Widget	For adding terminal emulation to an application
Dtksh	A GUI dialoging and scripting facility
Data Interchange	Drag and drop conventions, protocols, and APIs
ToolTalk <sup>®</sup>	A standard general-purpose message passing service that enables tight integration between separate applications and CDE components
Data Typing	API for access to the desktop engine typing services
Actions	API for access to the desktop invocation services
Font Guidelines	Conventions for standard font interactions
Internationalization Guidelines	Overview and reconciliation of relevant standards and style guides
Client/Server Guidelines	Network execution and distribution model

- Locating information about the application in the help manager.

Basic integration can be accomplished without any modifications to the application's source or executable files. The steps for performing basic integration include:

- Defining an application group for the application manager that will hold the application
- Defining the application's icons and giving them the correct double click and drag and drop behavior by creating new CDE actions and data types
- Removing color and font specifications from the application's defaults file so that it will use the default colors and fonts specified by the CDE style manager
- Installing configuration files for the application in the standard file system locations and registering it with the desktop using the dtappintegrate command (This command is typically invoked by the application's installation script.)
- Creating and installing any appropriate application information as desktop help files.

#### Recommended Integration

Recommended integration includes additional steps that are necessary to make the application fully integrated into CDE and consistent with other applications. This level of integration requires modifications to the application's source code, but in return it provides the following benefits:

- The user can access context-sensitive online help from within the application using the CDE help system. To achieve this the application must use the help system API.



- The application can achieve tight integration with other applications using ToolTalk messages. For example, an editor application that supports the media exchange message suite can be used by other applications for editing data objects. To achieve this the application must use the ToolTalk messaging API and support one or more of the standard message suites.
- The user can log out with the application running and upon login the application will be automatically restarted and restored to its previous state. To achieve this the application must be able to read and write session files that define the application's state, and it must use the session management API for controlling this behavior.
- The user can move data into or out of a running application using the drag and drop facility. To achieve this the application must use the drag and drop API.
- The application user interface can be translated into other languages without modifying the source code for the application. To achieve this the application must follow the internationalization guidelines.
- The application can be displayed on a remote workstation or an X terminal and be assured of getting the expected fonts. To achieve this the application must access its fonts using the standard font names defined in the font guidelines.

#### Optional Integration

Applications with unique needs may choose to use the optional CDE integration facilities. Applications are not required or expected to use any of these facilities, but some applications will find them useful. These facilities include:

- Additional Motif widgets such as SpinBox and ComboBox
- Data typing functions that enable an application to determine the type and attributes of files and other data items in a manner consistent with CDE and other applications
- Action invocation functions that enable an application to invoke other applications
- Monitor and control functions for the placement of applications in the user's workspaces
- A terminal emulator widget that can be used to add a conventional UNIX command window to the application
- A text editor widget that allows adding a text editing window to the application, which is more powerful than the standard Motif text editor widget
- An API to access calendar and scheduling capabilities, which is an implementation of the X.400 association calendaring and scheduling API 1.0
- An enhanced version of Korn shell which provides access to CDE APIs from an interpreted script language.

More information about these integration techniques can be found in references 3 and 4.

#### System Administrator's View of CDE

CDE greatly simplifies the burden of a UNIX system administrator because it provides a consistent set of capabilities and configuration mechanisms across virtually all UNIX systems. Tasks that an administrator of a CDE system might perform include configuring the behavior of CDE, administering CDE in a networked environment, and administering applications.

Configuring CDE. CDE is a highly configurable environment. Many of the customizations that a user can choose to do to

configure a personal environment can also be done by a system administrator for all users. Some examples of possible configuration changes include the ability to:

- Customize the appearance of the login screen
- Modify the set of applications that get automatically started when a user first logs in
- Add or remove printer icons from the print manager
- Customize the contents of the front panel
- Lock all or portions of the front panel so that they cannot be modified by the user
- Customize the set of controls embedded in window frames and modify their behavior
- Modify the menus available from the root window of the display
- Modify the keyboard bindings and accelerator keys used by applications
- Customize the default fonts, colors, and backdrops used by CDE and applications.

For more information on any of these tasks see reference 4.

**Administering CDE in a Networked Environment.** CDE is designed to work well in a highly networked environment. The architecture of the desktop lets system administrators distribute computing resources throughout the network, including applications, data files for applications, desktop session services (desktop applications such as the login manager and file manager), and help services. Help data files can be put on a central help server.

Typical tasks performed by the administrator of a network running CDE include:

- Installing the operating system and CDE on a network of systems, some of which might perform specialized tasks such as act as an application server
- Configuring the login manager so that workstations or X terminals have login access to the appropriate set of systems
- Configuring the distributed file system so that all systems have access to the necessary set of data files
- Installing and configuring devices such as printers so that they are accessible from the desktop environment
- Configuring application servers that run applications on behalf of other systems in the network
- Configuring other servers such as database servers or help servers.

CDE includes a number of daemons. System administrators often do not need to be aware of these daemons because they are installed and configured automatically when CDE is installed. However, in some situations system administrators may need to use the information in the manuals and man pages to create some nontypical configurations.

These daemons include:

- `dtlogin`. The login manager, which provides login services to the workstation or X terminal
- `dtspcd`. The subprocess control daemon, which provides remote command invocation
- `rpc.ndbserver`. The ToolTalk database server, which is used by the ToolTalk messaging system and performs filename mapping
- `ntsession`. The ToolTalk message server, which provides message passing

- `rpc.cmsd`. The calendar daemon, which manages the calendar databases.

More information about these daemons can be found in reference 3.

**Administering Applications.** The networking capabilities of the HP-LX\* operating system, the X Window System, and CDE can be used to create many different application-execution configurations. The simplest configuration is local application execution in which applications are installed on the local disk of a workstation and executed locally.

A variation of this configuration is to install applications on a disk on a central file server and then mount that disk on other workstations. Each workstation accesses the application's executable and configuration files across the network, but executes them locally. This configuration reduces the total amount of required disk space because multiple workstations are sharing a single copy of the application files.

Another approach is to use centralized application servers. This configuration uses the client/server capabilities of the X Window System to execute the application on one system and display its user interface on another workstation or X terminal.

Application servers are a good solution to the problem of giving users access to applications that have special run-time requirements. For example, if users need access to an application that only runs on HP-LX 8.0, an HP-LX 8.0 application server can be created and accessed from workstations running HP-LX 9.0.

CDE makes these distributed application environments simple to use by representing all applications as icons in the application manager. The user does not need to know or care whether the application is installed locally or on a remote application server.

CDE also makes these distributed configurations easy to create and administer. Applications are installed the same

way whether they will be used locally or accessed remotely. When a workstation is configured to access another system as an application server, all of the applications on that system that have been registered with CDE automatically become available. The article on page 15 provides a more detailed discussion about CDE application administration tools.

#### Summary

The HP VUE user will find much to appreciate in CDE. CDE retains the best end-user features of HP VUE, such as workspaces and the iconic desktop behavior. CDE adds many new end-user services, such as an integrated mailer and a calendar system. The system administrator gets a rich and new standard set of configuration options that also shares much of the HP VUE approach. A software developer has optional access to a new programming framework to take advantage of deep environment integration. Other than the help facility, these programming services were not available as part of HP VUE.

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3. *CDE Programmer's Overview*, Hewlett-Packard, Part Number B1171-90105, January 1996.
4. *CDE Advanced User's and System Administrator's Guide*, Hewlett-Packard, Part Number B1171-90102, January 1996.

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## Appendix A: CDE Application Programming Interfaces

This appendix lists the CDE libraries and header files that contain the CDE APIs.

### Desktop Services Library (libDtSvc)

**Desktop Initialization APIs.** The desktop services library must be initialized with `DtAppInitialize()` or `DtInitialize()` before an application can use the APIs for action invocation, data typing, drag and drop, screen saving, session management, or workspace management.

- `#include <Dt/Dt.h>`
- `Dt(5)`. Miscellaneous desktop definitions.
- `DtAppInitialize(3)`, `DtInitialize(3)`. Desktop services library initialization functions.

**Action Invocation APIs.** These APIs provide applications access to the desktop action database to query action attributes and to invoke actions. The `DtActionInvoke()` function selects the correct desktop action to invoke based on its arguments and actions in the database. The `DtDbLoad()` and `DtDbReloadNotify()` functions apply to the shared database for actions and data types.

- `#include <Dt/Action.h>`
- `DtAction(5)`. Action service definitions.
- `DtActionCallbackProc(3)`. Notifies application that the status of an action has changed.
- `DtActionDescription(3)`. Obtains the descriptive text for a given action.
- `DtActionExists(3)`. Determines if a string corresponds to an action name.
- `DtActionIcon(3)`. Gets the icon information for an action.
- `DtActionInvoke(3)`. Invokes a CDE action.
- `DtActionLabel(3)`. Gets the localizable label string for an action.
- `DtDbLoad(3)`. Loads the actions and data types database.
- `DtDbReloadNotify(3)`. Registers callbacks for changes to actions and data types database.

**Data Typing APIs.** Data typing APIs provide applications with access to the desktop data type database to query data type attributes and to determine the data type of files, buffers, and data.

- `#include <Dt/Dts.h>`
  - `DtDts(5)`. Provides data typing definitions.
-

- `DtDtsBufferToAttributeList(3)`: Gets a list of data attributes for a byte stream
- `DtDtsBufferToAttributeValue(3)`: Gets a single data attribute value for a byte stream
- `DtDtsBufferToDataType(3)`: Gets the data type for a byte stream
- `DtDtsDataToDataType(3)`: Gets the data type for a set of data
- `DtDtsDataTypesAction(3)`: Determines if the data type is an action
- `DtDtsDataTypeNames(3)`: Gets a list of available data types
- `DtDtsDataTypeToAttributeList(3)`: Gets a list of attributes for a data type
- `DtDtsDataTypeToAttributeValue(3)`: Gets an attribute value for a specified data type
- `DtDtsFileToAttributeList(3)`: Gets a list of attributes for a file
- `DtDtsFileToAttributeValue(3)`: Gets a specified attribute value for a file
- `DtDtsFileToDataType(3)`: Gets a data type for a file
- `DtDtsFindAttribute(3)`: Gets a specified list of data types
- `DtDtsFreeAttributeList(3)`: Frees a list of data attributes
- `DtDtsFreeAttributeValue(3)`: Frees a data attribute value
- `DtDtsFreeDataType(3)`: Frees a data type pointer to memory
- `DtDtsFreeDataTypeNames(3)`: Frees a list of data type names
- `DtDtsIsTrue(3)`: Returns a Boolean value associated with a string
- `DtDtsLoadDataTypes(3)`: Loads and initializes the data types database
- `DtDtsRelease(3)`: Frees memory associated with the data types database
- `DtDtsSetDataType(3)`: Sets the data type of a directory

**Drag and Drop APIs.** The drag and drop APIs are a convenience and policy layer on top of Motif 1.2 drag and drop. The drag and drop APIs manage the configuration and appearance of drag icons, define a transfer protocol for buffers, enable animation upon drop, provide enumeration of targets for text and file transfers, allow dual registration of text widgets for text and other data, and provide prioritized drop formats.

- `#include <Dt/Dnd.h>`
- `DtDnd(5)`: Provides drag and drop definitions
- `DtDndCreateSourceIcon(3)`: Creates a drag source icon
- `DtDndDragStart(3)`: Initiates a drag
- `DtDndDropRegister(3)`: Specifies a drop site
- `DtDndDropUnregister(3)`: Deactivates a drop site.

#### Screen Saver APIs.

- `#include <Dt/Saver.h>`
- `DtSaver(5)`: Provides screen saver definitions
- `DtSaverGetWindows(3)`: Gets the list of windows for drawing by a screen saver application

#### Session Management APIs.

- `#include <Dt/Session.h>`
- `DtSession(5)`: Provides session management services definitions
- `DtSessionRestorePath(3)`: Gets a path name for the application's state information file
- `DtSessionSavePath(3)`: Gets a path name for saving application state information

**Workspace Management APIs.** The workspace management APIs provide functions to access and modify workspace attributes and to request notification of workspace changes

- `#include <Dt/Wsm.h>`
- `DtWsm(5)`: Workspace manager definitions
- `DtWsmAddCurrentWorkspaceCallback(3)`: Adds a callback to be called when the current workspace changes
- `DtWsmAddWorkspaceFunctions(3)`: Adds workspace functions for a window

- `DtWsmAddWorkspaceModifiedCallback(3)`: Adds a callback to be called when any workspace is changed
- `DtWsmFreeWorkspaceInfo(3)`: Frees workspace information
- `DtWsmGetCurrentBackdropWindow(3)`: Gets the backdrop window for the current workspace
- `DtWsmGetCurrentWorkspace(3)`: Gets the current workspace
- `DtWsmGetWorkspaceInfo(3)`: Gets detailed workspace information
- `DtWsmGetWorkspaceList(3)`: Gets the names of the currently defined workspaces
- `DtWsmGetWorkspacesOccupied(3)`: Gets the workspaces in which a window resides
- `DtWsmOccupyAllWorkspaces(3)`: Puts a window into all workspaces
- `DtWsmRemoveWorkspaceCallback(3)`: Removes a workspace callback
- `DtWsmRemoveWorkspaceFunctions(3)`: Removes a window's workspace function
- `DtWsmSetCurrentWorkspace(3)`: Sets the current workspace
- `DtWsmSetWorkspacesOccupied(3)`: Sets the workspaces in which a window resides

#### Help Widget Library (libDtHelp)

**Help Utility APIs.** These APIs are used to manage application help

- `#include <Dt/Help.h>`
- `DtHelp(5)`: Help services definitions
- `DtHelpReturnSelectedWidgetId(3)`: Selects a widget or gadget
- `DtHelpSetCatalogName(3)`: Assigns the name of the message catalog to use for help services

**HelpDialog Widget API.** The `DtHelpDialog` widget provides users with the functionality for viewing and navigating structured online information (CDE help volumes). This functionality includes text and graphics rendering, embedded hypertext links, and various navigation methods to move through online help information. The widget supports rendering of CDE help volumes, system manual pages, text files, and character string values

- `#include <Dt/HelpDialog.h>`
- `DtHelpDialog(5)`: `DtHelpDialog` definitions
- `DtCreateHelpDialog(3)`: Creates a general `DtHelpDialog` widget
- `DtHelpDialog(3)`: The `DtHelpDialog` widget class

**HelpQuickDialog Widget APIs.** The `DtHelpQuickDialog` widget provides users with the same functionality as the `DtHelpDialog` widget. The difference here is that the functionality is for the quick dialog widget

- `#include <Dt/HelpQuickD.h>`
- `DtHelpQuickD(5)`: `DtHelpQuickDialog` definitions
- `DtCreateHelpQuickDialog(3)`: Creates a `DtHelpQuickDialog` widget
- `DtHelpQuickDialog(3)`: The `DtHelpQuickDialog` widget class
- `DtHelpQuickDialogGetChild(3)`: Gets the child of a `DtHelpQuickDialog` widget

#### Terminal Widget Library (libDtTerm)

**Terminal Widget APIs.** The `DtTerm` widget provides the core set of functionality needed to emulate an ANSI X3.64-1979- and ISO 6429 1992(E)-style terminal, such as the DEC VT220. This functionality includes text rendering, scrolling, margin and tab support, escape sequence parsing, and the low-level, operating-system-specific interface required to allocate and configure a pty or streams pseudoterminal device and write to the system's utmp device.

- `#include <Dt/Term.h>`
- `DtTerm(5)`: `DtTerm` widget definitions
- `DtCreateTerm(3)`: Creates a `DtTerm` widget

- DtTerm(3): DtTerm widget class
- DtTermDisplaySend(3): Sends data to a DtTerm widget's display
- DtTermInitialize(3): Prevents accelerators from being installed on a DtTerm widget
- DtTermSubprocReap(3): Allows a DtTerm widget to clear up after subprocess termination
- DtTermSubprocSend(3): Sends data to a DtTerm widget's subprocess.

### Desktop Widget Library (libDtWidget)

**Editor Widget APIs.** The DtEditor widget supports creating and editing text files. It gives applications running in the desktop environment a consistent method for editing text data. The widget consists of a scrolled edit window for text, dialogs for finding and changing text, and an optional status line. Editing operations include finding and changing text, simple formatting, spell checking, and undoing the previous editing operation.

- #include <Dt/Editor.h>
  - DtEditor(5): Editor widget definitions
  - DtCreateEditor(3): Creates a DtEditor widget
  - DtEditor(3): DtEditor widget class
  - DtEditorAppend(3): Appends data to a DtEditor widget
  - DtEditorAppendFromFile(3): Appends data from a file into a DtEditor widget
  - DtEditorChange(3): Changes one or all occurrences of a string in a DtEditor widget
  - DtEditorCheckForUnsavedChanges(3): Reports whether text has been edited
  - DtEditorClearSelection(3): Clears the primary selection in a DtEditor widget
  - DtEditorCopyToClipboard(3): Copies the primary selection in a DtEditor widget to the clipboard
  - DtEditorCutToClipboard(3): Copies the primary selection in a DtEditor widget to the clipboard and deletes the selected text
  - DtEditorDeleteSelection(3): Deletes the primary selection in the DtEditor widget
  - DtEditorDeselect(3): Deselects the current selection in a DtEditor widget
  - DtEditorDisableRedisplay(3): Temporarily prevents visual update of a DtEditor widget
  - DtEditorEnableRedisplay(3): Forces the visual update of a DtEditor widget
  - DtEditorFind(3): Searches for the next occurrence of a string in a DtEditor widget
  - DtEditorFormat(3): Formats all or part of the contents of a DtEditor widget
  - DtEditorGetContents(3): Retrieves the contents of a DtEditor widget
  - DtEditorGetInsertionPosition(3): Retrieves the position of the insert cursor in a DtEditor widget
  - DtEditorGetLastPosition(3): Retrieves the position of the last character in a DtEditor widget
  - DtEditorGetMessageTextFieldID(3): Retrieves the widget ID of the message text field in the DtEditor status line
  - DtEditorGetSizeHints(3): Retrieves sizing information from a DtEditor widget
  - DtEditorGoToLine(3): Moves the insert cursor for a DtEditor widget to a specified line
  - DtEditorInsert(3): Inserts data into a DtEditor widget
  - DtEditorInsertFromFile(3): Inserts data from a file into a DtEditor widget
  - DtEditorInvokeFindChangeDialog(3): Displays the DtEditor widget dialog for searching and replacing text
  - DtEditorInvokeFormatDialog(3): Displays the DtEditor widget dialog for choosing formatting options
  - DtEditorInvokeSpellDialog(3): Displays the DtEditor widget dialog for checking text for spelling errors
  - DtEditorPasteFromClipboard(3): Inserts the clipboard selection into a DtEditor widget
  - DtEditorReplace(3): Replaces a portion of the contents of a DtEditor widget
  - DtEditorReplaceFromFile(3): Replaces a portion of the contents of a DtEditor widget with the contents of a file
  - DtEditorReset(3): Resets a DtEditor widget to its default state
  - DtEditorSaveContentsToFile(3): Saves the contents of a DtEditor widget to a file
  - DtEditorSelectAll(3): Selects all the text in a DtEditor widget
  - DtEditorSetContents(3): Places data into a DtEditor widget
  - DtEditorSetContentsFromFile(3): Loads data from a file into a DtEditor widget
  - DtEditorSetInsertionPosition(3): Sets the position of the insert cursor in a DtEditor widget
  - DtEditorTraverseToEditor(3): Sets keyboard traversal to the edit window of a DtEditor widget
  - DtEditorUndoEdit(3): Undoes the last edit made to the text in a DtEditor widget.
- ComboBox Widget APIs.** The DtComboBox widget is a combination of a TextField and a List widget that provides a list of valid choices for the TextField. Selecting an item from this list automatically fills in the TextField with that list item.
- #include <Dt/ComboBox.h>
  - DtComboBox(5): DtComboBox widget definitions
  - DtCreateComboBox(3): Creates a DtComboBox widget
  - DtComboBox(3): DtComboBox widget class
  - DtComboBoxAddItem(3): Adds an item to the ComboBox widget
  - DtComboBoxDeletePos(3): Deletes a DtComboBox item
  - DtComboBoxSelectItem(3): Selects a DtComboBox item
  - DtComboBoxSetItem(3): Sets an item in the DtComboBox list.
- MenuButton Widget APIs.** The DtMenuButton widget is a command widget that provides the menu cascading functionality of an XmCascadeButton widget. DtMenuButton can only be instantiated outside a menu pane.
- #include <Dt/MenuButton.h>
  - DtMenuButton(5): DtMenuButton widget definitions
  - DtCreateMenuButton(3): Creates a DtMenuButton widget
  - DtMenuButton(3): DtMenuButton widget class
- SpinBox Widget APIs.** The DtSpinBox widget is a user interface control for incrementing and decrementing an associated TextField. For example, it can be used to cycle through the months of the year or days of the month.
- #include <Dt/SpinBox.h>
  - DtSpinBox(5): DtSpinBox widget definitions
  - DtCreateSpinBox(3): Creates a DtSpinBox widget
  - DtSpinBox(3): DtSpinBox widget class
  - DtSpinBoxAddItem(3): Adds an item to the DtSpinBox
  - DtSpinBoxDeletePos(3): Deletes a DtSpinBox item
  - DtSpinBoxSetItem(3): Sets an item in the DtSpinBox list
- Calendar Library (libcsa)**
- Calendar APIs.** The Calendar APIs include functions for inserting, deleting, and modifying entries, functions for browsing and finding entries, and functions for calendar administration
- #include <csa/csa.h>
  - csacsa(5): Calendar and appointment services definitions
  - csa\_add\_calendar(3): Adds a calendar to the calendar service
  - csa\_add\_entry(3): Adds an entry to the specified calendar

- `csa_call_callbacks(3)`: Forces the invocation of the callback functions associated with the specified callback lists
- `csa_delete_calendar(3)`: Deletes a calendar from the calendar service
- `csa_delete_entry(3)`: Deletes an entry from a calendar
- `csa_free(3)`: Frees memory allocated by the calendar service
- `csa_free_time_search(3)`: Searches one or more calendars for available free time
- `csa_list_calendar_attributes(3)`: Lists the names of the calendar attributes associated with a calendar
- `csa_list_calendars(3)`: Lists the calendars supported by a calendar service
- `csa_list_entries(3)`: Lists the calendar entries that match all the attribute search criteria
- `csa_list_entry_attributes(3)`: Lists the names of the entry attributes associated with the specified entry
- `csa_list_entry_sequence(3)`: Lists the recurring calendar entries that are associated with a calendar entry
- `csa_logoff(3)`: Terminates a session with a calendar
- `csa_logon(3)`: Logs on to the calendar service and establishes a session with a calendar
- `csa_look_up(3)`: Looks up calendar information
- `csa_query_configuration(3)`: Determines information about the installed CSA configuration
- `csa_read_calendar_attributes(3)`: Reads and returns the calendar attribute values for a calendar
- `csa_read_entry_attributes(3)`: Reads and returns the calendar entry attribute values for a specified calendar entry
- `csa_read_next_reminder(3)`: Reads the next reminder of the given type in the specified calendar relative to a given time
- `csa_register_callback(3)`: Registers the callback functions to be invoked when the specified type of update occurs in the calendar
- `csa_restore(3)`: Restores calendar entries from an archive file
- `csa_save(3)`: Saves calendar entries into an archive file
- `csa_unregister_callback(3)`: Unregisters the specified callback functions
- `csa_update_calendar_attributes(3)`: Updates the calendar attributes values for a calendar
- `csa_update_entry_attributes(3)`: Updates the calendar entry attributes
- `csa_x_process_updates(3)`: Invokes a calendar application's calendar event handler.

#### ToolTalk Messaging Library (libtt)

**ToolTalk Messaging API.** This API provides functions for managing all aspects of ToolTalk messaging.

- `#include <TtM_c.h>`
- `TtM_c(5)`: ToolTalk messaging definitions.

**ToolTalk Toolkit APIs.** The ToolTalk toolkit APIs are a set of higher-level interfaces to the ToolTalk messaging APIs. The ToolTalk toolkit APIs facilitate use of the desktop message set and the media exchange message set.

- `#include <TtMk.h>`
- `TtMk(5)`: ToolTalk toolkit definitions
- `ttm_Get_Modified(3)`: Asks if any ToolTalk client has changes pending on a file
- `ttm_Revert(3)`: Requests a ToolTalk client to revert a file
- `ttm_Save(3)`: Requests a ToolTalk client to save a file
- `ttm_Close(3)`: Destroys a ToolTalk communication endpoint
- `ttm_File_Event(3)`: Uses ToolTalk to announce an event about a file
- `ttm_File_Join(3)`: Registers to observe ToolTalk events on a file
- `ttm_File_Notice(3)`: Creates and sends a standard ToolTalk notice about a file
- `ttm_File_Quit(3)`: Unregisters interest in ToolTalk events about a file
- `ttm_File_Request(3)`: Creates and sends a standard ToolTalk request about a file
- `ttm_Message_Accept(3)`: Accepts a contract to handle a ToolTalk request
- `ttm_Open(3)`: Creates a ToolTalk communication endpoint
- `ttm_Sender_Imprint_On(3)`: Acts like a child of the specified tool
- `ttm_Session_Join(3)`: Joins a ToolTalk session
- `ttm_Session_Quit(3)`: Quits a ToolTalk session
- `ttm_Subcontract_Manage(3)`: Manages an outstanding request

#### Motif Toolkit Libraries (libXm, libMrm, libUil)

**Motif Widget API.** The CDE Motif Widget API (Xm) consists of the Motif 1.2 widget library (libXm) with enhancements to existing functionality and bug fixes. The CDE Motif widget API maintains source compatibility and binary compatibility with Motif 1.2 applications.

- `#include <Xm/XmAll.h>`

**Motif Resource Manager API.** The Motif resource manager API (Mrm) creates widgets based on definitions contained in user interface definition files created by the user interface language (UIL) compiler. The Motif resource manager interprets the output of the UIL compiler and generates the appropriate argument lists for widget creation functions.

- `#include <Mrm/MrmAppl.h>`
- `#include <Mrm/MrmDecls.h>`
- `#include <Mrm/MrmPublic.h>`

**Motif User Interface Language (UIL) API.** The Motif UIL is a specification language for describing the initial user interface of a Motif application.

- `#include <uil/Uil.h>`
- `#include <uil/UilDBDef.h>`
- `#include <uil/UilSymDef.h>`
- `#include <uil/UilSymGI.h>`

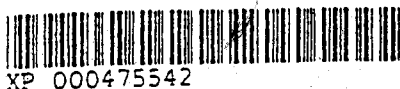
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## Administration of Graphic User Interface and Multimedia Objects using Cooperative Processing



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Disclosed is a method which addresses the problem of easily managing which functions the user can perform using Cooperative Processing-based solutions. This method provides an easy and centrally located method of allowing different users different capabilities based on their characteristics that is defined on the server portion of this cooperative application.

Typical midrange based applications integrate with the platforms' security mechanism to determine what functions the user may perform. This is typically information provided in the user profile on the platform. This is similar to controlling access to menus by changing the user class in the OS/400\* user profile. The user class determines (among other things) what options are available on OS/400 menus.

One of the problems with Cooperative Processing solutions is that this level of user authority is not generally available on the Programmable Work Station (PWS). So although the application may provide functions that system administrators will not want some users to be able to perform, there is no mechanism on the PWS that can be used to tailor these options. Therefore, the user on a PWS may have additional capability they would not have if they used the server platform directly, this is a security problem.

Administrators need to be able to control access to the Graphic User Interface (GUI) or multimedia application from a centralized point. One of the significant challenges of a Cooperative Processing solution is management of each user's PWS. Since the PWSs are distributed across a potentially large area, the management of user capabilities to these GUI and multimedia programs needs to be controlled from a central location; otherwise, considerable time is spent managing these capabilities at each user's PWS.

This method provides a function for controlling access to functions of a GUI or multimedia interface.

The best place to do this is from the server itself. This gives administrators the capability to manage user capabilities from a central location instead of each and every user's PWS. This would be a nontrivial task in large corporations where there may be many PWSs located in many different locations.

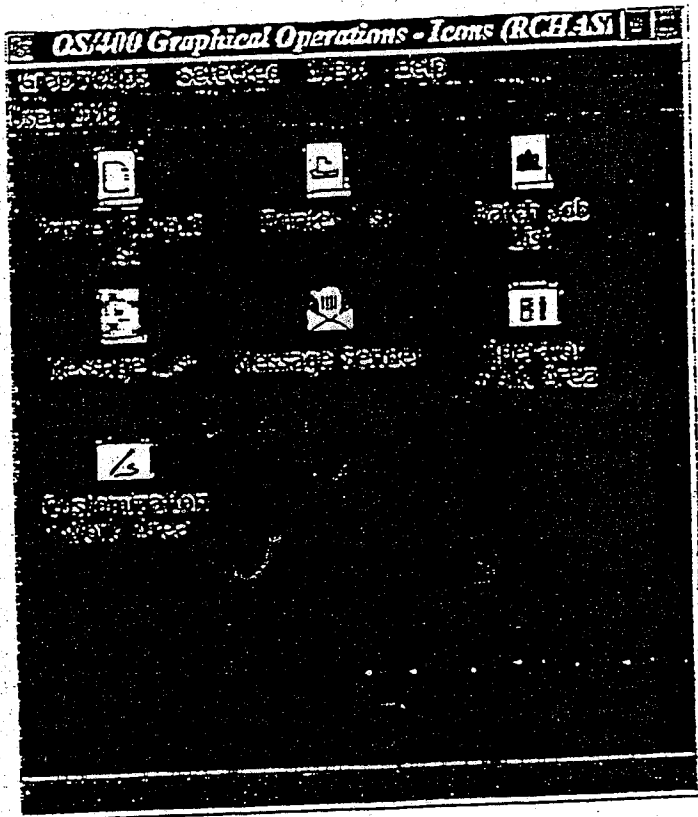
The technique used by this method is based on a combination of user class settings and user authorities to specific server objects. This information is downloaded to the PWS when the user starts the cooperative application. A user profile is required as input when a cooperative processing job is started on the server. This user profile is used to retrieve the user class from the user profile and used to check user authorities to these specific server objects. These objects are used only as a representative authority level (surrogate objects) to specific functions of the cooperative application.

Administration of Graphic User Interface and Multimedia Objects using Cooperative Processing —  
Continued

The remainder of this section describes the implementation used for this OS/400 cooperative application. Although this description is specific to the OS/400, it can be used in a more general manner.

For purposes of administration, the invention is broken down into the following manageable categories:

1. Work areas
2. Templates and links
3. Other UI and Multimedia objects



Work areas, templates and objects - Work areas can be viewed as analogous to OS/400 menus in that they contain options or actions a user can select to perform a task. Templates, links, and 'other UI and multimedia objects' support those options or actions within the work area. For example, in the figure, the work area is the rectangle with the title 'OS/400 Graphical Operations - Icons (RCHASLFI)'. This work area is analogous to the main menu of a standard character based application. Within this work area are other work areas (Operator, Customization and AS/400\* Objects) and User Interface (UI) or multimedia objects (Messages, Message Sender...). The administrator must be able to control which users have capability to perform tasks using these work areas or objects. For example, many administrators would not want all their users to have the capability of using the Operator work area since they could inadvertently (or advertently) downgrade system performance by changing values incorrectly. In other cases, the administrator may want the user to perform some Operator tasks (such as displaying

status) without having the capability of changing these values. This level of control is required to fix this problem in this environment.

Access to work areas is controlled by the user class value in the OS/400 user profile. This information is retrieved based on the user profile that was used to start the Cooperative Processing application. This information is accessed through an existing OS/400 Application Program Interface (API). For example, this is the way an administrator would control which users are capable of seeing the System Status work area.

Templates, links and 'other objects' - Templates and other objects are controlled based on user authorities to specific OS/400 data areas. These data areas are stored in QUSRSYS. There is one OS/400 data area for each template and object that needs to be controlled by an administrator. Administrators can use standard OS/400 security mechanisms, such as group profiles, authorization lists, or authority based on a user profile, to manage authority to these objects. If the objects do not exist, the authority is treated as \*EXCLUDE.

Authority levels - Authorization is based on the user's level of authority to the data areas, as summarized by the following tables.

Authority definitions -

Authority	Allowable actions
*EXCLUDE	Links and templates are not displayed in the work areas. User has no access. Link menu choices cannot be taken.
*USE	Links are displayed and link menu choices can be taken (used).
*CHANGE	Links and templates are displayed. Settings views can be opened and settings can be changed for both. New instances can be created from the templates.
Note: Users with *ALLOBJ authority are automatically authorized to ALL objects.	

Authority	Allowable actions
*EXCLUDE	Object is not displayed and cannot be used.
*USE	Object is displayed and can be used but cannot be changed or deleted.
*CHANGE	Settings view can be opened and object can be used, changed and deleted.
Note: Users with *ALLOBJ authority are automatically authorized to ALL objects.	

Administration object identifiers - All UI and multimedia objects have a key associated with them for purposes of administration. This key is used in the UI and multimedia objects as an



administration handle. This handle is the name of the OS/400 data area that can have its authority modified to control the PWS application. Therefore, the OS/400 data area is a 'representative' or surrogate for authority of the UI or multimedia objects

Some examples - Before the work area is displayed to the user the handle of that object is used to determine the user's capabilities. Then the appropriate information can be displayed to the user. For instance, if a user's class was '\*USER' and the 'System Status' work area in the figure was assigned the handle '\*SYSOPR', then the 'System Status' work area would not be displayed when the user opened the main 'AS/400 System' work area.

As another example, if a user had no authority to the OS/400 data area 'QGYUSENDER' and the object 'Message Sender' was assigned the handle 'QGYUSENDER', then the 'Message Sender' object would not be displayed when the user opened the main 'AS/400 System' work area. If the user had '\*USE' authority to the OS/400 data area 'QGYUSENDER' then the 'Message Sender' object would be displayed when the user opened the main 'AS/400 System' work area but they could not delete it or change its characteristics. If, however, the user had '\*CHANGE' authority to the OS/400 data area 'QGYUSENDER' then the 'Message Sender' object would be displayed when the user opened the main 'AS/400 System' work area and they could delete it or change its characteristics.

As can be seen by the examples, the user's capabilities can be controlled to a very fine level.

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