

06-7684

SOLICITUD
PATENTE DE INVENCION

EXPEDIENTE N° 06-7684

TITULO: ARQUITECTURA DE LICENCIAMIENTO
FLEXIBLE PARA LA APLICACIÓN DIGITAL DE
LICENCIAMIENTO.

CLASIFICACION INTERNACIONAL: G06F 17/60

SOLICITANTE: MICROSOFT CORPORATION

DOMICILIO: REDMOND, WASHINGTON, ESTADOS
UNIDOS DE AMERICA

APODERADO: DARIO CARDENAS NAVAS

BOGOTÁ, D.C. _____

PETITORIO

Industria y Comercio
SUPERINTENDENCIA

FORMULARIO UNICO DE S.
2000-3

Superindustria y Comercio
Radicación: 06007644 00000000
Fecha (UMB): 2006-01-27 16:23:44

Folios: 150

Trámite: 002 PATENTES D 1 REGISTRO/ 411 PRESENTAC
Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

1

SOLICITUD DE:

X

Patente de Invención

Patente de Modelo de Utilidad

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(71)

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Lugar de Constitución: Estado de Washington, Estados Unidos de América
Domicilio: REDMOND, WASHINGTON, ESTADOS UNIDOS DE AMERICA.

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C.E. ☐ Otro ☒

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O APODERADO
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C.E. ☐ Otro ☐

Número 17.086.629 BTA

TP 1.250 C.S.J.

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4. REDMOND, WASHINGTON, ESTADOS UNIDOS DE AMERICA.

IDENTIFICACION

C.C. ☐ NIT ☐

C.E. ☐ Otro ☒

Título(54):

2

ARQUITECTURA DE LICENCIAMIENTO FLEXIBLE PARA LA APLICACION DIGITAL DE LICENCIAMIENTO

6

Prioridad

SI ☒

NO ☐

(33) País de Origen

U.S.A.

(32) Fecha

Febrero 4, 2005

(31) N° de Solicitud

11/051,162

5

Para publicar a partir de la fecha de la presente solicitud a los:

☐

6 meses

☐

12 meses

☐

18 meses

☐

Otro

ANEXOS

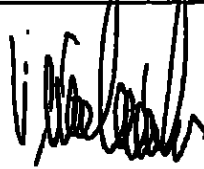
2

- ☒ Comprobante de pago de la tasa de presentación de la solicitud. (No. 06-2,722)
- ☐ Comprobante de pago de la tasa por concepto de excedente de palabras en la publicación.
- ☒ Comprobante de pago de la tasa por concepto de reivindicación de prioridad. (No. 06-2,725)
- ☒ Poderes, si fuere el caso. (Protocolo No 16.069)
- ☒ Certificado de existencia y representación legal cuando el solicitante sea persona jurídica. Protocolo No 16.069)
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- ☐ De ser el caso, certificado de depósito del material biológico.
- ☒ Arte final 12x12 y 6x6 cm.
- ☒ Resumen y extracto para publicación.

10

NOMBRE: DARIO CARDENAS NAVAS

FIRMA:



C.C. 17.006.629 BTA

TP. 1.250 ~~1.250~~
C.S.J.

2

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

RECIBO OFICIAL DE CAJA : 06 - 2,722
FECHA : ENERO 13 DE 2006

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
Radicación : 06007604 00000000 Folios: 150
Fecha (AMH): 2006-01-27 16:23:48
Trámite : 002 PATENTES D 1 REGISTRO/ 411 PRESENTAC
Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PAGO	Vr. PAGO
CARDENAS Y CARDENAS P.I. CONSIGNACION		BANCO POPULAR	050-00110-6	27542973	13/01/2006	2,244,000.00

***** C O N C E P T O *****

CANT. RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1 50005-01-01 SOLICITUDES	1 TRAMITES DE SOL. DE PATENTE DE IN	463,000.00
	TOTAL :	\$ 463,000.00

SON: CUATROCIENTOS SESENTA Y TRES MIL PESOS

RESPONSABLE : _____

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

Arquitectura de licenciamiento
flexible para la aplicación digital
de licenciamiento.

Microsoft Corporation

CARDENAS & CARDENAS
ABOGADOS

11200000

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

RECIBO OFICIAL DE CAJA : 06 - 2,725
FECHA : ENERO 13 DE 2006

SUPERINDUSTRIA Y COMERCIO
Radicacion : 06007604 00000000
Fecha (MM): 2006-01-27 16:23:48
Tramite : 002 PATENTES D 1 REGISTRAR/ 411 PRESENTAR
Dependencia: 2020 DIVISION DE NUEVAS CREACIONES
Folios: 150

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
CARDENAS Y CARDENAS P.I. CONSIGNACION		BANCO POPULAR	050-00110-6	27542973	13/01/2006	2,244,000.00

***** C O N C E P T O *****

CANT. RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1 50005-01-01 SOLICITUDES	82 INVOCACION DE UNA PRIORIDAD EN NU	130,000.
	TOTAL :	130,000.00

SOM: CIENTO TREINTA MIL PESOS

RESPONSABLE : _____

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

Arquitectura de licenciamiento
flexible para la aplicación
digital de licenciamiento

CARDENAS & CARDENAS
ABOGADOS

ARTI FINA

5

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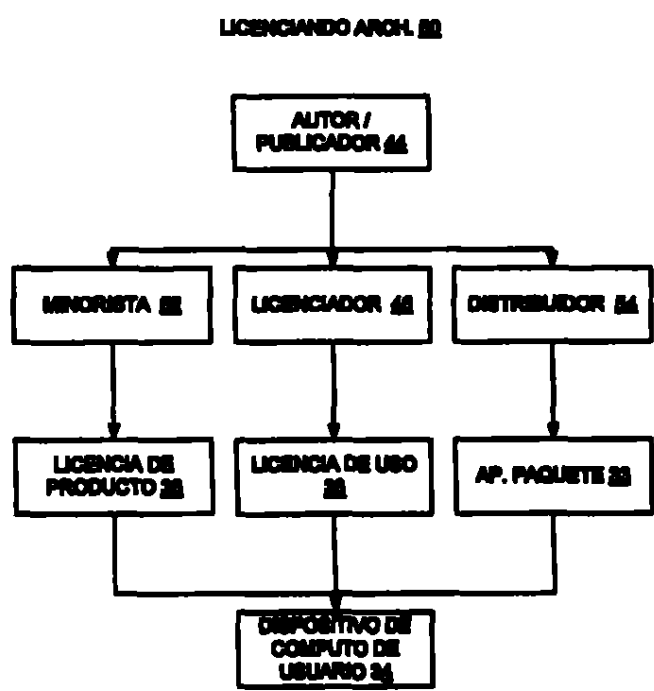


Fig. 4



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APPL NO.	FILING OR 371 DATE	ART UNIT	PL FEE RECD	ATTY DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
11/051,162	02/04/2005	3821	1000	MSFT-4580	7	12	2

MS# 310550.01

CONFIRMATION NO. 1214

41505
WOODCOCK WASHBURN LLP
ONE LIBERTY PLACE - 45TH FLOOR
PHILADELPHIA, PA 19103

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FILING RECEIPT



OC000000015426516

Woodcock Washburn

Date Mailed: 03/11/2005

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Filing Receipt Corrections, facsimile number 703-746-9195. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

Cedl Ray Brooks, Mill Creek, WA;
Jay Robert Grotto, Kirkland, WA;
Caglar Gunyaldi, Sammamish, WA;
Todd Haugen, Clyde Hill, WA;

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DOCKET DEPT.
WVW:MAN

Assignment For Published Patent Application

Microsoft Corporation, Redmond, WA

Power of Attorney: The patent practitioners associated with Customer Number 41505.

Domestic Priority data as claimed by applicant

Foreign Applications

If Required, Foreign Filing License Granted: 03/10/2005

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US11/051,162**

Projected Publication Date: 08/10/2008

Non-Publication Request: No

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MAR 1 7 2005

Mary Ann Davine
Woodcock Washburn

Early Publication Request: No

Title

Flexible licensing architecture for licensing digital application

Preliminary Class

705

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Title 37, Code of Federal Regulations, 5.11 & 5.15**

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MSFT-4560

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RECORDATION DATE: 04/04/2005

REEL/FRAME: 015854/0718
NUMBER OF PAGES: 2

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

BROOKS, CECIL RAY

DOC DATE: 02/02/2005

ASSIGNOR:

GIROTTI, JAY ROBERT

DOC DATE: 02/02/2005

ASSIGNOR:

GUNYAKTI, CAGLAR

DOC DATE: 02/02/2005

ASSIGNOR:

HAUGEN, TODD

DOC DATE: 02/02/2005

ASSIGNEE:

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APR 6 2005

Mary Ann Devine
Woodcock Washburn

015854/0718 PAGE 2

SERIAL NUMBER: 11051162

FILING DATE: 02/04/2005

PATENT NUMBER:

ISSUE DATE:

TITLE: FLEXIBLE LICENSING ARCHITECTURE FOR LICENSING DIGITAL APPLICATION

LAZENA MARTIN, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

PATENT ASSIGNMENT

Electronic Version v1.1
Stylesheet Version v1.1

04/04/2005
500025972

SUBMISSION TYPE:	NEW ASSIGNMENT										
NATURE OF CONVEYANCE:	ASSIGNMENT										
CONVEYING PARTY DATA											
<table border="1"><thead><tr><th>Name</th><th>Execution Date</th></tr></thead><tbody><tr><td>Cecil Ray Brooks</td><td>02/02/2005</td></tr><tr><td>Jay Robert Grotto</td><td>02/02/2005</td></tr><tr><td>Caglar Gunaydli</td><td>02/02/2005</td></tr><tr><td>Todd Haugen</td><td>02/02/2005</td></tr></tbody></table>		Name	Execution Date	Cecil Ray Brooks	02/02/2005	Jay Robert Grotto	02/02/2005	Caglar Gunaydli	02/02/2005	Todd Haugen	02/02/2005
Name	Execution Date										
Cecil Ray Brooks	02/02/2005										
Jay Robert Grotto	02/02/2005										
Caglar Gunaydli	02/02/2005										
Todd Haugen	02/02/2005										
RECEIVING PARTY DATA											
<table border="1"><tr><td>Name:</td><td>Microsoft Corporation</td></tr><tr><td>Street Address:</td><td>One Microsoft Way</td></tr><tr><td>City:</td><td>Redmond</td></tr><tr><td>State/Country:</td><td>WASHINGTON</td></tr><tr><td>Postal Code:</td><td>98062</td></tr></table>		Name:	Microsoft Corporation	Street Address:	One Microsoft Way	City:	Redmond	State/Country:	WASHINGTON	Postal Code:	98062
Name:	Microsoft Corporation										
Street Address:	One Microsoft Way										
City:	Redmond										
State/Country:	WASHINGTON										
Postal Code:	98062										
PROPERTY NUMBERS Total: 1											
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Property Type	Number										
Application Number:	11051182										
CORRESPONDENCE DATA											
Fax Number: (215)588-3439 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>											
Phone: 215-588-3100											
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NAME OF SUBMITTER:	Joanne Gallagher										
Total Attachments: 1 source=310550.01#page1.tif											

CH 340 00 1105-16

12

PATENT ASSIGNMENT

WE, Cecil Ray Brooks, Jay Robert Grotto, Caglar Gunyakti, and Todd Haugen ("ASSIGNOR"), residing at 16219 24th Drive SE, Mill Creek, Washington 98012, 11108 NE 65th Street, Kirkland, Washington 98033-7116, 440 226th Lane NE, Sammamish, Washington 98074 and 2611 93rd Place NE, Clyde Hill, Washington 98004, have invented subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "Flexible Licensing Architecture for Licensing Digital Application" ("APPLICATION"), which:

☒ will be filed without this executed PATENT ASSIGNMENT. ASSIGNOR hereby authorizes, and requests, ASSIGNEE'S legal representatives, of Woodcock Washburn, LLP, 1650 Market Street, Philadelphia, PA 19103, who are associated with customer number 41505, to insert here in parenthesis (U.S. Serial No. _____, filed _____) this APPLICATION'S U.S. Serial Number and filing date, when known:

☐ was filed on _____ and was given U.S. Serial No. _____ ;
☐ is filed concurrently herewith;

Microsoft Corporation, a Washington Corporation, on behalf of itself and its successors and assigns ("ASSIGNEE"), is entitled to, and is desirous of acquiring, the entire and exclusive rights, title and interest in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as continuing applications, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

For good and valuable consideration, the receipt of which is hereby acknowledged by the ASSIGNOR, the ASSIGNOR hereby sells, assigns and transfers to the ASSIGNEE, the entire and exclusive rights, title and interest in the INVENTION and the APPLICATION (and APPLICATION DERIVATIVES);

ASSIGNOR agrees to execute all instruments and documents required for the making and prosecution of the APPLICATION (and APPLICATION DERIVATIVES), for litigation regarding letters patent derived therefrom, and for the purpose of protecting and perfecting title to the APPLICATION (and APPLICATION DERIVATIVES).

2/2/05
DATE

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DATE

2/2/05
DATE

Cecil Ray Brooks
Cecil Ray Brooks

Jay Robert Grotto
Jay Robert Grotto

Caglar Gunyakti
Caglar Gunyakti

Todd Haugen
Todd Haugen

USPS EXPRESS MAIL MAILING LABEL NO. EL _____ US

TITLE OF THE INVENTION**Flexible Licensing Architecture for Licensing Digital Application****TECHNICAL FIELD**

[0001] The present invention relates to a licensing architecture for providing a license to operate a digital application on a computing device or the like. More particularly, the invention relates to such a licensing architecture where only one version of the digital application need be released with multiple available features, and where a particular license issued to a particular user specifies which available features may be employed by the user. Thus, the publisher of the application need not release multiple versions of the same application, and the user in obtaining the license can select which of the multiple available features are to be licensed.

BACKGROUND OF THE INVENTION

[0002] Rights management and enforcement is highly desirable in connection with digital content such as a digital application or the like, where such digital application is to be distributed to one or more users. Typical modes of

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14.

distribution include tangible devices such as a magnetic (floppy) disk, a magnetic tape, an optical (compact) disk (CD), etc., and intangible media such as an electronic bulletin board, an electronic network, the Internet, etc. Upon being received by the user on a computing device thereof, such user can activate the application with the aid of an appropriate operating system on the computing device.

[0003] Typically, an author and/or publisher of the application wishes to distribute such application to each of many users or recipients in exchange for a license fee or some other consideration. In such scenario, then, the application may be a word processing application, a spreadsheet application, a browser application, a gaming application, a media player application, a combination thereof, and the like. Such author / publisher or other similar entity (hereinafter, "publisher"), given the choice, would likely wish to restrict what each user can do with such published application. For example, the publisher would like to restrict the user from copying and re-distributing such application to a second user, at least in a manner that denies the publisher a license fee from such second user.

[0004] However, after publication has occurred, such publisher has very little if any real control over the application. This is especially problematic in view of the fact that practically every personal computer includes the software and hardware necessary to make an exact digital copy of such application, and to download such exact digital copy to a write-able magnetic or optical disk, or to send such exact digital copy over a network such as the Internet to any destination.

[0005] Of course, as part of a transaction wherein the application is distributed, the publisher may require the user / recipient of the application to promise not to re-distribute such application in an unwelcome manner. However, such a promise is easily made and easily broken. A publisher may attempt to prevent such re-distribution through any of several known security devices, usually involving encryption and decryption. However, there is likely very little that

prevents a mildly determined user from decrypting an encrypted application, saving such application in an un-encrypted form, and then re-distributing same.

[0006] In addition, the publisher may wish to provide the user with the flexibility to purchase different types or editions of the application. For example, the publisher may wish to provide a full-featured edition at a higher price and a rudimentary edition at a lower price. Likewise, the publisher may wish to offer a business edition and a home edition, a student edition and a teacher edition, or the like. Note, though, that in the prior art, each such edition of the application would require that the publisher distribute a separate set of operating code. Thus, and as should be appreciated, offering multiple editions of the same application requires that a publisher maintain, package, and sell each such edition separately, with considerable expense. Moreover, each such edition likely is supported separately, updated separately, and debugged separately, with even more considerable expense. Also, when errors or bugs in the application are found, each such edition likely must be separately reviewed and corrected, if in fact the error exists in all such editions, one again with considerable expense.

[0007] To provide the user with the flexibility to purchase different editions of an application, a publisher may offer different types of use licenses at different license fees, while at the same time holding the user to the terms of whatever type of license is in fact purchased. For example, and in the case where the application includes multiple available features, the publisher may wish to offer a user menus of such available features / editions to be licensed, or even allow a user to select particular ones of the available features to be licensed. Thus, the user in purchasing such a license would be able to employ the available features of the application that are enabled by the license, and would be restricted from employing the available features of the application that are not enabled by the license. Presumably, fees for licenses would vary based on the available features enabled thereby.

[0008] Significantly, by offering multiple types of licenses for the application or by offering customized licenses for the application, the publisher can avoid having to distribute multiple distinct editions of the application, each tailored

to a particular set of available features. Instead, the publisher need only distribute a single base copy of the application with all available features, and then provide a license that enables only a certain subset of all such available features. As may be appreciated, if the single base copy of the application is distributed in a form such that the application is inoperable without a valid license, such application may be freely distributed and re-distributed, yet may only be operated by a user if such user obtains a license from the publisher or an agent thereof.

[0009] Rights Management (RM) and enforcement architectures and methods have previously been provided to allow the controlled operation of arbitrary forms of digital applications, where such control is flexible and definable by the publisher of such application. Typically, a digital license is provided to operate the application, where the application cannot be actuated in a meaningful manner without such license. For example, it may be the case that at least a portion of the application is encrypted and the license includes a decryption key for decrypting such encrypted portion. In addition, it may be the case that the license is tied to a user or a computing device thereof, and such computing device includes a security feature that ensures that the terms of the license are honored.

[0010] However, such RM architectures have not heretofore been employed to effectuate a licensing architecture where only one copy of a digital application need be released with multiple available features or editions such that a particular license issued to a particular user specifies which available features / edition may be employed by the user. Accordingly, a need exists for such a licensing architecture, whereby a publisher of an application need not release multiple editions of the same application, and a user in obtaining a license can select which of the multiple available features / editions are to be licensed.

SUMMARY OF THE INVENTION

[0011] The aforementioned needs are satisfied at least in part by the present invention in which a method is provided to obtain a use license for using an application on a computing device, where the application includes a plurality of features. In the method a transaction is engaged with a retailer to

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obtain a product license corresponding to the application from such retailer, where the product license defines at least one feature of the application that may be employed based on such product license. In addition, a base copy of the application is obtained from a distributor and is actuated. The use license corresponds to the product license and is acquired from a licensor by way of the actuated application sending the product license to the licensor along with an identification of at least one of a user, the computing device, and a trusted component operating on the computing device, where the use license includes feature policy granting rights to employ each feature defined in the product license.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] The foregoing summary, as well as the following detailed description of the embodiments of the present invention, will be better understood when read in conjunction with the appended drawings. For the purpose of illustrating the invention, there are shown in the drawings embodiments which are presently preferred. As should be understood, however, the invention is not limited to the precise arrangements and instrumentalities shown. In the drawings:

[0013] Fig. 1 is a block diagram representing an exemplary non-limiting computing environment in which the present invention may be implemented;

[0014] Fig. 2 is a block diagram representing an exemplary network environment having a variety of computing devices in which the present invention may be implemented;

[0015] Fig. 3 is a block diagram showing an enforcement architecture of an example of a trust-based system, including a digital license in accordance with one embodiment of the present invention;

[0016] Fig. 4 is a block diagram showing a licensing architecture for issuing a use license to employ an edition of the application of Fig. 3 in accordance with one embodiment of the present invention;

[0017] Fig. 5 is a flow diagram showing key steps performed during obtaining the use license of Figs. 3 and 4 in accordance with one embodiment of the present invention;

[0018] Fig. 6 is a flow diagram showing key steps performed when obtaining the use license of Figs. 3 and 4 to use the application of Fig. 3 in accordance with one embodiment of the present invention; and

[0019] Fig. 7 is a flow diagram showing key steps performed when returning or transferring the use license of Figs. 3 and 4 in accordance with one embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

COMPUTER ENVIRONMENT

[0020] Fig. 1 and the following discussion are intended to provide a brief general description of a suitable computing environment in which the invention may be implemented. It should be understood, however, that handheld, portable, and other computing devices of all kinds are contemplated for use in connection with the present invention. While a general purpose computer is described below, this is but one example, and the present invention requires only a thin client having network server interoperability and interaction. Thus, the present invention may be implemented in an environment of networked hosted services in which very little or minimal client resources are implicated, e.g., a networked environment in which the client device serves merely as a browser or interface to the World Wide Web.

[0021] Although not required, the invention can be implemented via an application programming interface (API), for use by a developer, and/or included within the network browsing software which will be described in the general context of computer-executable instructions, such as program modules, being executed by one or more computers, such as client workstations, servers, or other devices. Generally, program modules include routines, programs, objects, components, data structures and the like that perform particular tasks or

implement particular abstract data types. Typically, the functionality of the program modules may be combined or distributed as desired in various embodiments. Moreover, those skilled in the art will appreciate that the invention may be practiced with other computer system configurations. Other well known computing systems, environments, and/or configurations that may be suitable for use with the invention include, but are not limited to, personal computers (PCs), automated teller machines, server computers, hand-held or laptop devices, multi-processor systems, microprocessor-based systems, programmable consumer electronics, network PCs, minicomputers, mainframe computers, and the like. The invention may also be practiced in distributed computing environments where tasks are performed by remote processing devices that are linked through a communications network or other data transmission medium. In a distributed computing environment, program modules may be located in both local and remote computer storage media including memory storage devices.

[0022] Fig. 1 thus illustrates an example of a suitable computing system environment 100 in which the invention may be implemented, although as made clear above, the computing system environment 100 is only one example of a suitable computing environment and is not intended to suggest any limitation as to the scope of use or functionality of the invention. Neither should the computing environment 100 be interpreted as having any dependency or requirement relating to any one or combination of components illustrated in the exemplary operating environment 100.

[0023] With reference to Fig. 1, an exemplary system for implementing the invention includes a general purpose computing device in the form of a computer 110. Components of computer 110 may include, but are not limited to, a processing unit 120, a system memory 130, and a system bus 121 that couples various system components including the system memory to the processing unit 120. The system bus 121 may be any of several types of bus structures including a memory bus or memory controller, a peripheral bus, and a local bus using any of a variety of bus architectures. By way of example, and not limitation, such architectures include Industry Standard Architecture (ISA) bus,

Micro Channel Architecture (MCA) bus, Enhanced ISA (EISA) bus, Video Electronics Standards Association (VESA) local bus, and Peripheral Component Interconnect (PCI) bus (also known as Mezzanine bus).

[0024] Computer 110 typically includes a variety of computer readable media. Computer readable media can be any available media that can be accessed by computer 110 and includes both volatile and nonvolatile media, removable and non-removable media. By way of example, and not limitation, computer readable media may comprise computer storage media and communication media. Computer storage media includes both volatile and nonvolatile, removable and non-removable media implemented in any method or technology for storage of information such as computer readable instructions, data structures, program modules or other data. Computer storage media includes, but is not limited to, RAM, ROM, EEPROM, flash memory or other memory technology, CDROM, digital versatile disks (DVD) or other optical disk storage, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or any other medium which can be used to store the desired information and which can be accessed by computer 110. Communication media typically embodies computer readable instructions, data structures, program modules or other data in a modulated data signal such as a carrier wave or other transport mechanism and includes any information delivery media. The term "modulated data signal" means a signal that has one or more of its characteristics set or changed in such a manner as to encode information in the signal. By way of example, and not limitation, communication media includes wired media such as a wired network or direct-wired connection, and wireless media such as acoustic, RF, infrared, and other wireless media. Combinations of any of the above should also be included within the scope of computer readable media.

[0025] The system memory 130 includes computer storage media in the form of volatile and/or nonvolatile memory such as read only memory (ROM) 131 and random access memory (RAM) 132. A basic input/output system 133 (BIOS), containing the basic routines that help to transfer information between elements within computer 110, such as during start-up, is typically stored in ROM

131. RAM 132 typically contains data and/or program modules that are immediately accessible to and/or presently being operated on by processing unit 120. By way of example, and not limitation, Fig. 1 illustrates operating system 134, application programs 135, other program modules 136, and program data 137.

[0026] The computer 110 may also include other removable/non-removable, volatile/nonvolatile computer storage media. By way of example only, Fig. 1 illustrates a hard disk drive 141 that reads from or writes to non-removable, nonvolatile magnetic media, a magnetic disk drive 151 that reads from or writes to a removable, nonvolatile magnetic disk 152, and an optical disk drive 155 that reads from or writes to a removable, nonvolatile optical disk 156, such as a CD ROM or other optical media. Other removable/non-removable, volatile/nonvolatile computer storage media that can be used in the exemplary operating environment include, but are not limited to, magnetic tape cassettes, flash memory cards, digital versatile disks, digital video tape, solid state RAM, solid state ROM, and the like. The hard disk drive 141 is typically connected to the system bus 121 through a non-removable memory interface such as interface 140, and magnetic disk drive 151 and optical disk drive 155 are typically connected to the system bus 121 by a removable memory interface, such as interface 150.

[0027] The drives and their associated computer storage media discussed above and illustrated in Fig. 1 provide storage of computer readable instructions, data structures, program modules and other data for the computer 110. In Fig. 1, for example, hard disk drive 141 is illustrated as storing operating system 144, application programs 145, other program modules 146, and program data 147. Note that these components can either be the same as or different from operating system 134, application programs 135, other program modules 136, and program data 137. Operating system 144, application programs 145, other program modules 146, and program data 147 are given different numbers here to illustrate that, at a minimum, they are different copies. A user may enter commands and information into the computer 110 through input devices such as a keyboard 162 and pointing device 161, commonly referred to as a mouse,

trackball or touch pad. Other input devices (not shown) may include a microphone, joystick, game pad, satellite dish, scanner, or the like. These and other input devices are often connected to the processing unit 120 through a user input interface 160 that is coupled to the system bus 121, but may be connected by other interface and bus structures, such as a parallel port, game port or a universal serial bus (USB).

[0028] A monitor 191 or other type of display device is also connected to the system bus 121 via an interface, such as a video interface 190. A graphics interface 182, such as Northbridge, may also be connected to the system bus 121. Northbridge is a chipset that communicates with the CPU, or host processing unit 120, and assumes responsibility for accelerated graphics port (AGP) communications. One or more graphics processing units (GPUs) 184 may communicate with graphics interface 182. In this regard, GPUs 184 generally include on-chip memory storage, such as register storage and GPUs 184 communicate with a video memory 186. GPUs 184, however, are but one example of a coprocessor and thus a variety of co-processing devices may be included in computer 110. A monitor 191 or other type of display device is also connected to the system bus 121 via an interface, such as a video interface 190, which may in turn communicate with video memory 186. In addition to monitor 191, computers may also include other peripheral output devices such as speakers 197 and printer 196, which may be connected through an output peripheral interface 195.

[0029] The computer 110 may operate in a networked environment using logical connections to one or more remote computers, such as a remote computer 180. The remote computer 180 may be a personal computer, a server, a router, a network PC, a peer device or other common network node, and typically includes many or all of the elements described above relative to the computer 110, although only a memory storage device 181 has been illustrated in Fig. 1. The logical connections depicted in Fig. 1 include a local area network (LAN) 171 and a wide area network (WAN) 173, but may also include other

networks. Such networking environments are commonplace in offices, enterprise-wide computer networks, intranets and the Internet.

[0030] When used in a LAN networking environment, the computer 110 is connected to the LAN 171 through a network interface or adapter 170. When used in a WAN networking environment, the computer 110 typically includes a modem 172 or other means for establishing communications over the WAN 173, such as the Internet. The modem 172, which may be internal or external, may be connected to the system bus 121 via the user input interface 160, or other appropriate mechanism. In a networked environment, program modules depicted relative to the computer 110, or portions thereof, may be stored in the remote memory storage device. By way of example, and not limitation, Fig. 1 illustrates remote application programs 185 as residing on memory device 181. It will be appreciated that the network connections shown are exemplary and other means of establishing a communications link between the computers may be used.

[0031] One of ordinary skill in the art can appreciate that a computer 110 or other client device can be deployed as part of a computer network. In this regard, the present invention pertains to any computer system having any number of memory or storage units, and any number of applications and processes occurring across any number of storage units or volumes. The present invention may apply to an environment with server computers and client computers deployed in a network environment, having remote or local storage. The present invention may also apply to a standalone computing device, having programming language functionality, interpretation and execution capabilities.

[0032] Distributed computing facilitates sharing of computer resources and services by direct exchange between computing devices and systems. These resources and services include the exchange of information, cache storage, and disk storage for files. Distributed computing takes advantage of network connectivity, allowing clients to leverage their collective power to benefit the entire enterprise. In this regard, a variety of devices may have

applications, objects or resources that may interact to implicate authentication techniques of the present invention for trusted graphics pipeline(s).

[0033] Fig. 2 provides a schematic diagram of an exemplary networked or distributed computing environment. The distributed computing environment comprises computing objects 10a, 10b, etc. and computing objects or devices 110a, 110b, 110c, etc. These objects may comprise programs, methods, data stores, programmable logic, etc. The objects may comprise portions of the same or different devices such as PDAs, televisions, MP3 players, televisions, personal computers, etc. Each object can communicate with another object by way of the communications network 14. This network may itself comprise other computing objects and computing devices that provide services to the system of Fig. 2. In accordance with an aspect of the invention, each object 10 or 110 may contain an application that might request the authentication techniques of the present invention for trusted graphics pipeline(s).

[0034] It can also be appreciated that an object, such as 110c, may be hosted on another computing device 10 or 110. Thus, although the physical environment depicted may show the connected devices as computers, such illustration is merely exemplary and the physical environment may alternatively be depicted or described comprising various digital devices such as PDAs, televisions, MP3 players, etc., software objects such as interfaces, COM objects and the like.

[0035] There are a variety of systems, components, and network configurations that support distributed computing environments. For example, computing systems may be connected together by wireline or wireless systems, by local networks or widely distributed networks. Currently, many of the networks are coupled to the Internet, which provides the infrastructure for widely distributed computing and encompasses many different networks.

[0036] In home networking environments, there are at least four disparate network transport media that may each support a unique protocol such as Power line, data (both wireless and wired), voice (e.g., telephone) and entertainment media. Most home control devices such as light switches and

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appliances may use power line for connectivity. Data Services may enter the home as broadband (e.g., either DSL or Cable modem) and are accessible within the home using either wireless (e.g., HomeRF or 802.11b) or wired (e.g., Home PNA, Cat 5, even power line) connectivity. Voice traffic may enter the home either as wired (e.g., Cat 3) or wireless (e.g., cell phones) and may be distributed within the home using Cat 3 wiring. Entertainment media may enter the home either through satellite or cable and is typically distributed in the home using coaxial cable. IEEE 1394 and DVI are also emerging as digital interconnects for clusters of media devices. All of these network environments and others that may emerge as protocol standards may be interconnected to form an intranet that may be connected to the outside world by way of the Internet. In short, a variety of disparate sources exist for the storage and transmission of data, and consequently, moving forward, computing devices will require ways of protecting content at all portions of the data processing pipeline.

[0037] The 'Internet' commonly refers to the collection of networks and gateways that utilize the TCP/IP suite of protocols, which are well-known in the art of computer networking. TCP/IP is an acronym for "Transport Control Protocol/Interface Program." The Internet can be described as a system of geographically distributed remote computer networks interconnected by computers executing networking protocols that allow users to interact and share information over the networks. Because of such wide-spread information sharing, remote networks such as the Internet have thus far generally evolved into an open system for which developers can design software applications for performing specialized operations or services, essentially without restriction.

[0038] Thus, the network infrastructure enables a host of network topologies such as client/server, peer-to-peer, or hybrid architectures. The "client" is a member of a class or group that uses the services of another class or group to which it is not related. Thus, in computing, a client is a process, i.e., roughly a set of instructions or tasks, that requests a service provided by another program. The client process utilizes the requested service without having to "know" any working details about the other program or the service itself. In a client/server architecture,

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particularly a networked system, a client is usually a computer that accesses shared network resources provided by another computer e.g., a server. In the example of Fig. 2, computers 110a, 110b, etc. can be thought of as clients and computer 10a, 10b, etc. can be thought of as the server where server 10a, 10b, etc. maintains the data that is then replicated in the client computers 110a, 110b, etc.

[0039] A server is typically a remote computer system accessible over a remote network such as the Internet. The client process may be active in a first computer system, and the server process may be active in a second computer system, communicating with one another over a communications medium, thus providing distributed functionality and allowing multiple clients to take advantage of the information-gathering capabilities of the server.

[0040] Client and server communicate with one another utilizing the functionality provided by a protocol layer. For example, Hypertext-Transfer Protocol (HTTP) is a common protocol that is used in conjunction with the World Wide Web (WWW). Typically, a computer network address such as a Universal Resource Locator (URL) or an Internet Protocol (IP) address is used to identify the server or client computers to each other. The network address can be referred to as a Universal Resource Locator address. For example, communication can be provided over a communications medium. In particular, the client and server may be coupled to one another via TCP/IP connections for high-capacity communication.

[0041] Thus, Fig. 2 illustrates an exemplary networked or distributed environment, with a server in communication with client computers via a network/bus, in which the present invention may be employed. In more detail, a number of servers 10a, 10b, etc., are interconnected via a communications network/bus 14, which may be a LAN, WAN, intranet, the Internet, etc., with a number of client or remote computing devices 110a, 110b, 110c, 110d, 110e, etc., such as a portable computer, handheld computer, thin client, networked appliance, or other device, such as a VCR, TV, oven, light, heater and the like in accordance with the present invention. It is thus contemplated that the present

invention may apply to any computing device in connection with which it is desirable to process, store or render secure content from a trusted source.

[0042] In a network environment in which the communications network/bus 14 is the Internet, for example, the servers 10 can be Web servers with which the clients 110a, 110b, 110c, 110d, 110e, etc. communicate via any of a number of known protocols such as HTTP. Servers 10 may also serve as clients 110, as may be characteristic of a distributed computing environment. Communications may be wired or wireless, where appropriate. Client devices 110 may or may not communicate via communications network/bus 14, and may have independent communications associated therewith. For example, in the case of a TV or VCR, there may or may not be a networked aspect to the control thereof. Each client computer 110 and server computer 10 may be equipped with various application program modules or objects 135 and with connections or access to various types of storage elements or objects, across which files may be stored or to which portion(s) of files may be downloaded or migrated. Thus, the present invention can be utilized in a computer network environment having client computers 110a, 110b, etc. that can access and interact with a computer network/bus 14 and server computers 10a, 10b, etc. that may interact with client computers 110a, 110b, etc. and other devices 111 and databases 20.

Rights Management (RM) Overview

[0043] As is known, and referring now to Fig. 3, rights management (RM) and enforcement is highly desirable in connection with a digital application 32 that is to be distributed to users. Upon being received by the user, such user instantiates the application 32 with the aid of an appropriate computing device 34 or the like.

[0044] Typically, an application author or publisher (hereinafter 'publisher') 44 distributing such digital application 32 wishes to restrict what the user can do with such distributed application 32. For example, the publisher 44 may wish to restrict the user from copying and re-distributing such application 32

to a second user, or may wish to allow distributed application 32 to be actuated only a limited number of times, only for a certain total time, only on a certain type of machine, only on a certain type of rendering platform, only by a certain type of user, etc.

[0045] However, after distribution has occurred, such publisher 44 has very little if any control over the application 32. An RM system 30, then, allows the controlled actuating of an application 32, where such control is flexible and definable by the publisher 44 of such application 32. Typically, the application 32 is distributed to the user in the form of a package 33 by way of any appropriate distribution channel. The package 33 as distributed may include the application 32 or a portion thereof encrypted with a symmetric encryption / decryption key (KD), (i.e., (KD(AP))), as well as other information identifying the application 32, how to acquire a license for such application 32, etc.

[0046] The trust-based RM system 30 allows the publisher 44 of the application 32 to specify license rules that must be satisfied before such application 32 is allowed to be actuated on a user's computing device 34. Such license rules can include the aforementioned temporal requirement, and may be embodied within a digital license or use document (hereinafter 'license') 36 that the user / user's computing device 34 (such terms being interchangeable unless circumstances require otherwise) must obtain from the publisher 44 or an agent thereof. Such license 36 also includes the decryption key (KD) for decrypting the encrypted portion of the application 32, perhaps encrypted according to a key decryptable by the user's computing device 34. As seen in Fig. 3, such encrypting key may be a public key of the user's computing device 34 (PU-BB), and the user's computing device 34 presumably has the corresponding private key (PR-BB) by which (PU-BB(KD)) may be decrypted.

[0047] The publisher 44 for the application 32 must trust that the user's computing device 34 will abide by the rules and requirements specified by such publisher 44 in the license 36, i.e. that the application 32 will not be actuated unless the rules and requirements within the license 36 are satisfied. Preferably, then, the user's computing device 34 is provided with a trusted component or

mechanism 38 that will not actuate the application 32 except according to the license rules embodied in the license 36 associated with the application 32 and obtained by the user.

[0048] The trusted component 38 typically has a license evaluator 40 that determines whether the license 36 is valid, reviews the license rules and requirements in such valid license 36, and determines based on the reviewed license rules and requirements whether the requesting user has the right to actuate the corresponding application 32 in the manner sought, among other things. As should be understood, the license evaluator 40 is trusted in the RM system 30 to carry out the wishes of the publisher 44 of the application 32 according to the rules and requirements in the license 36, and the user should not be able to easily alter such trusted element for any purpose, nefarious or otherwise.

[0049] As should be understood, the rules and requirements in the license 36 can specify whether the user has rights to actuate the application 32 based on any of several factors, including who the user is, where the user is located, what type of computing device 34 the user is using, what operating system is calling the RM system 30, the date, the time, etc. In addition, the rules and requirements of the license 36 may limit the license 36 to a pre-determined number of actuations, or pre-determined operating time, for example. Thus, the trusted component 38 may need to refer to a clock 42 on the computing device 34.

[0050] The rules and requirements may be specified in the license 36 according to any appropriate language and syntax. For example, the language may simply specify attributes and values that must be satisfied (DATE must be later than X, e.g.), or may require the performance of functions according to a specified script (IF DATE greater than X, THEN DO . . . , e.g.).

[0051] Upon the license evaluator 40 determining that the license 36 is valid and that the user satisfies the rules and requirements therein, the application 32 can then be actuated. In particular, to actuate the application 32, the decryption key (KD) is obtained from the license 36 and is applied to (KD(AP))

from the package 33 to result in the actual application 32, and the actual application 32 is then in fact actuated in the manner set forth in the license 36.

[0052] As set forth above, the license 36 with (PU-BB(KD)) in effect authorizes an entity in possession of (PR-BB) to access (KD) and thereby access the application 32 encrypted according to such (KD), presuming of course that the entity abides by all conditions as set forth in the license 36. As should be appreciated, though, other types of licenses 36 may exist within the RM system 30.

[0053] For example, it may be appreciated that in one scenario the publisher 44 of the application 32 may authorize one or more particular licensors 46 to issue a license 36 for the application 32 by providing the licensor 46 with a publishing license 36p. As may be appreciated, such publishing license 36p is similar to the license 36 in that such publishing license 36p likely includes the decryption key (KD) for decrypting the application 32, here encrypted according to a public key of the licensor 46 (PU-BB). Likewise, the publishing license 36p likely includes the rules and requirements for rendering the content 32. Here, however, such rules and requirements are to be inserted into the license 36 as issued by the licensor 46, and are not especially applicable to such licensor 46.

[0054] Note, though, that the publishing license 36p may indeed include other rules and requirements that are indeed applicable to the licensor 46. Accordingly, the licensor 46 should include a trusted component 38 with a license evaluator 40 in a manner akin to the user's computing device 34. Significantly, each type of license 36, 36p, etc. (hereinafter, 'license 36') as proffered typically includes a digital signature for authentication / verification purposes, and each digital signature is validated by the trusted component 38 before the license 36 is honored. Of course, if any validation fails, the process ends and the license 36 is not honored.

Flexible Licensing Architecture for Licensing Digital Application

[0055] As was set forth above, a publisher 44 may wish to provide a user with the flexibility to purchase different types or editions of an application 32. For example, and again, the publisher 44 may wish to provide a full-featured edition, a rudimentary edition, a business edition, a home edition, etc. However, according to the prior art, each such edition of the application 32 would be separately issued as a code set (i.e., computer file or series of such files or the like). As should be evident, supporting, maintaining, marketing, and distributing each such separately issued code set could be greatly complicated, especially as compared to performing such chores with regard to a single commonly issued code set.

[0056] Thus, in one embodiment of the present invention, a publisher in fact issues a common code set for the application 32, but differentiates between editions of the application 32 by issuing differing corresponding RM licenses 36. Significantly, the application 32 as set forth within the common code set is defined to have a plurality of features or the like, and each license 36 is defined to enable certain ones of the defined features and/or disable certain ones of the defined features. Constructing and employing such a license 36 for the application 32 within the RM architecture 30 is known or should be apparent to the relevant public and therefore need not be set forth herein in any detail. Accordingly, any such method of constructing and employing such a license 36 may be used without departing from the spirit and set forth in connection with the present invention.

[0057] For example, it maybe the case that the application 32 has an instantiation portion that instantiates same on the computing device 34, and that such instantiation portion is encrypted and decryptable according to the key (KD) from the license 36. Thus, upon an appropriate command from the user or the like, the trusted component 38 retrieves such key (KD) from the license 36 if such license 36 so allows and then employs the retrieved (KD) to decrypt the instantiation portion, and the decrypted instantiation portion is then employed to instantiate the application 32.

[0058] Similarly, it may be the case that the application 32 is defined to have several feature portions, each corresponding to a feature, and that each feature portion requires as a condition precedent to the use thereof that the trusted component 38 confirm that the license 36 so allows. Thus, and as should now be appreciated, if an application 36 has features A, B, and C, a first license 32 corresponding to a first edition of the application 32 may allow use of feature A only, a second license 32 corresponding to a second edition of the application 32 may allow use of features B and C only, a third license 32 corresponding to a third edition of the application 32 may allow use of all of features A, B, and C, and the like. Note here that editions may be defined by the publisher 44 by offering only certain types of corresponding licenses 36, or may be customized by a user in the course of obtaining a particular license 36, presuming that the publisher in fact offers such a customized license 36. In obtaining a particular type of license 36, a user is able to employ the available features of the application 32 that are enabled by the license 36, and is restricted from employing the available features of the application 32 that are not enabled by the license 36. Presumably, in the case where a license 36 is obtained as a purchase based on a fee, such fee would vary based on the available features in the application 32 enabled thereby.

[0059] Significantly, although the application 32 may be offered in at least the three editions as set forth above if not more, all three editions may be based on a single base copy of the application 32 with all available features included therein. As should be appreciated, each feature is available to a particular user with a particular license 36 if the license enables such feature or does not disable such feature. Moreover, the single base copy may be widely distributed and re-distributed without fear of inappropriate use inasmuch as use of the application 32 can occur only with a properly-obtained license 36.

[0060] Notably, to effectuate issuing such license 36 for an application and in one embodiment of the present invention, a licensing architecture 50 such as that shown in Fig. 4 is provided. As seen in such Fig. 4, the licensing architecture 50 includes the publisher 44 and the licensor 46 of Fig. 3, and may also include a retailer 52 that retails the application 32 to a user. Of

course, the publisher 44 may also be the retailer 44 without departing from the spirit and scope of the present invention.

[0061] Presumably, such retailer 52 is a retail location that performs a retail transaction with a user to obtain the application 32 and/or to obtain a license 36 corresponding thereto. In doing so, the retailer 52 would direct the user to a distributor 54 or the like operating a distribution site or the like to obtain the application 32 itself and/or would direct the user to the licensor 46 for the license 36 itself. Presumably, although not necessarily, the retailer 52, the licensor 46, and the distributor 54 are all networked together by way of a network such as the Internet, and the user visits the retailer 52 and obtains the application 32 from the distributor 54 and the license 36 from the licensor 46 (hereinafter, 'the use license 36') by way of such network.

[0062] In one embodiment of the present invention, and as seen in Fig. 4, the application 32 as provided by the publisher 44 includes executable code by which the application 32 is instantiated and employed. Significantly, such application 32 as provided by the publisher 44 also includes a number of special licenses 36, including a definition license 36, an initial license 36, and a non-network license 36, where such special licenses 36 are distinct from the use license 36 heretofore referenced.

[0063] The definition license 36, again, is not itself a use license 36 that may be obtained from a licensor 46 to employ the application 32, but instead is a special license 36 that defines all of the features available in the application 32 by way of an appropriate use license 36. Such definition license 36 sets forth all of the features of the application 32 as available rights, then, but does not actually grant any of such rights. Instead, an obtained use license 36 in enabling a particular feature grants a corresponding right.

[0064] Thus, to continue the example from above, if an application 32 included three defined features A, B, and C, the definition license 36 would set forth each such features A, B, and C together with pertinent information relating thereto. Such pertinent features may for example include a reference to the feature in the application 32, a description, and perhaps edition information

regarding which edition of the application 32 includes such feature. Thus, a use license 36 that enables such feature may for example employ such information to allow a user to employ same. Likewise, if a use license 36 does not enable such feature, such information may nevertheless be employed to inform a user of the availability of such feature, and perhaps even direct the user to a licensor 46 to obtain another use license 36 that would enable such feature.

[0065] Unlike a definition license 36, an initial license 36, is itself akin to a use license 36 that may be used to employ the application 32. However, such use license 36 is a special license 36 in that such use license 36 can only be employed in an initial manner, such as for example to allow a user to try out the application 32 for a defined amount or length of time, for example. Note here that the use license 36 is not tied to the user or the computing device 34 thereof.

[0066] Such initial license 36 may or may not grant rights to all features of the application 32 as set forth within the definition license 36, depending upon how the publisher 44 has constructed such initial license 36. Generally, the initial license 36 may be offered to allow a prospective user a period of time to try out the application 32 without purchasing a use license 36, to allow the user to have free access to a rudimentary edition of the application 32 without the need to obtain a use license 36, or the like. In the former case, the initial license 36 may grant rights to all features, but for a relatively short period of time, while in the latter case, the initial license may grant rights to some features, but for a relatively long period of time. Thus, a user may employ the initial license 36 in a temporary manner until such user either decides to obtain a use license 36 or to not further employ the application, or may employ the initial license 36 to use a rudimentary form of the application 32, as the case may be.

[0067] Like an initial license 36, a non-network license 36 is itself akin to a use license 36 that may be used to employ the application 32. However, such non-network license 36 is a special license 36 in the event that a user does not have network access to the licensor 46 but still wishes to use the application 32. Typically, in such a case, the non-network license 36 cannot be employed unless the user obtains a confirmation code, such as for example by telephone or

mail, where such confirmation code may be obtained in exchange for a fee. Thus, with such confirmation code, the non-network license 36 enables the application 32 to be employed as if the user had obtained some sort of use license 36 from the licensor 46. Here too, the non-network license 36 is not tied to the user or the computing device 34 thereof, at least not directly, although obtaining the confirmation code does at least indirectly tie the non-networked license 36 to the user presuming the user identified itself in the course of obtaining such confirmation code.

[0068] As with the initial license 36, the non-networked license 36 may or may not grant rights to all features of the application 32 as set forth within the definition license 36, depending upon how the publisher 44 has constructed such non-networked license 36. Note that while the non-networked license 36 may grant rights to all features of the application 32, doing so may be inadvisable inasmuch as the obtained special code could be transferred by the user to others who would then be able to access all such features of the application 32.

[0069] Typically, the retailer 52 can provide the application 32 with the aforementioned special licenses 36 to the user, either directly or by way of the aforementioned distributor 54. Note, though, that the user may also obtain such application 32 from the publisher 44 or from any other source without departing from the spirit and scope of the present invention. In fact, and as set forth in more detail below, it may be that the user obtains the application 32 from an acquaintance or a third party and then obtains a use license 36 by way of the retailer 52.

[0070] In any case, and in one embodiment of the present invention, the application 32 as distributed to the user may additionally be packaged with referral information including an identification of a particular retailer 52. Thus, in the situation where the user obtains the application 32 from a source other than the retailer 52, such referral information refers such user to such retailer 52 to effectuate a transaction to obtain a use license 36 for a particular edition of such application 32. In addition, even after the user obtains the use license 36, such referral information may be employed should the user desire to

go back to the retailer 52 to return such use license 36 or to obtain a different use license 36 for another edition of such application 32.

[0071] As was set forth above, a user in possession of the single base copy of the application 32 requires a use license 36 of some sort to employ a particular corresponding edition of the application 32, unless of course the user employs the aforementioned initial license 36 or non-network license 36. However, and as should be appreciated, such a use license 36 contains the decryption key (KD) for accessing the encrypted portion of the application 32 and is tied to the user or the computing device 34 thereof and thus does not normally travel with the application 32.

[0072] In one embodiment of the present invention, then, and remembering that the application 32 includes the definition license 36 as was set forth above, the user in the course of obtaining such a use license 36 first obtains from the retailer 52 or the like a product license 36 that specifies at least some of the features as set forth in the definition license 36. In such embodiment, the product license 36 is not itself a use license 36 that can be used to employ the application 32. Instead, the product license 36 as provided by the retailer 52 or the like defines which edition of the application 32 that the user has obtained, or else the features as set forth in the definition license 36 that the user has requested, and thus is a token or authorization that the user presents to the licensor 46 during the course of a use license request transaction to signify to such licensor 46 that such user is entitled to a corresponding use license 36 for a particular edition of the application 32.

[0073] Put more simply, the user interacts with the retailer 52 to obtain the right to a use license 36 but does not in fact receive the use license 36 from such retailer 52. Instead, the user receives the product license 36 as a token that is presented to the licensor 46, and the licensor 46 in response in fact issues a corresponding use license 36 to the user that the user may in fact use to employ a corresponding edition of the application 32. The use license 36 as issued corresponds to the product license 36 in that the rights conferred in the use license 36 correspond to the edition or features set forth in the product license 36.

[0074] As may be appreciated, while the product license 36 could be dispensed with by having the user obtain the use license 36 in the course of a direct transaction with the licensor 46, the licensor 46 may prefer not to handle the retail aspects of such a direct transaction. Moreover, by employing the product license 36 in the manner set forth herein, multiple retailers 52 may be employed to effectuate retail transactions with users while still only having one or a few licensors 46, each licensor 46 being able to issue a use license 36 in connection with a transaction with any retailer 52. Finally, by separating the issuance of the use license 36 by the licensor 46 from the retail transaction with the retailer 52, the publisher 44 may exert greater control over such issuance, and also may achieve greater security.

[0075] Presumably, the product license 36 as provided by the retailer 52 to the user includes appropriate information regarding where the user may find the licensor 46 to issue the use license 36 corresponding to such product license 36. In addition, and in one embodiment of the present invention, the product license 36 as provided by the retailer 52 to the user may be packaged with referral information including an identification of the distributor 54 from which the application 32 may be obtained. Thus, in the situation where the user obtains the product license 36 prior to the application 32, such referral information refers such user to such distributor 54 to obtain the base copy of such application 32. In addition, even after the user obtains the application 32, such referral information may be employed should the user desire to go back to the distributor 54 for another copy of such base copy of such application 32, or even for a new or updated version of such base copy of such application 32.

[0076] To summarize, then, a user may obtain the application 32 before or after a product license 36 therefor. If before, the referral information packaged with the application 32 is employed to locate a particular retailer 52 from which the user can obtain the use license 36. If after, the referral information packaged with the product license 36 is employed to locate a particular distributor 54 from which the user can obtain the base copy of the application 32.

[0077] In one typical scenario, and turning now to Fig. 5, a user purchasing or otherwise obtaining the application 32 and a corresponding use license 36 would visit a retailer 52 therefor and engage therewith in a transaction by which the user would select particular features desired in the application 32 or a particular edition of the application 32 (step 501). As part of such transaction, the user may provide a fee to the retailer 52. Typically, although not necessarily, the retailer 52 controls the transaction and determines the presentation of information and options relating to the application 32 and acceptable forms of payment, and upon approval from the user executes the transaction.

[0078] Also as part of the transaction, the retailer 52 collects information from the user necessary to construct or obtain an appropriate product license 36 corresponding to the user selection and in fact constructs or obtains such product license 36 (step 503). As noted above, such product license 36 may be packaged with referral information including a particular distributor 54 from which the base copy of the application 32 may be obtained. At any rate, such product license 36 is conveyed from the retailer 52 to the user (step 505). In addition, the retailer 52 may send a transaction confirmation message to the user confirming the transaction. If so, the message may include a location at which the product license 36 may be obtained if such product license 36 is not automatically sent to the user.

[0079] Upon receiving the product license 36 from the retailer 52, the user may install same (step 507) or may save the product license 36 for later retrieval and installation. Generally, and as will be set forth below in more detail, installation includes validating the publishing license 36 including a signature thereof and storing same on the computing device 34 of the user. Although a use license 36 corresponding to the product license 36 may be obtained at this point, it may instead be advisable to first ensure that the corresponding application 32 has been installed. Note that if the product license 36 is saved for later retrieval, such product license 36 should be saved in an encrypted form, especially if the product license 36 can be taken by another user and employed thereby.

[0080] Once the product license 36 has been received, the user's computing device 34 determines whether the corresponding application 32 has been installed (step 509). Such check may for example be achieved by checking a registry on the computing device 34 for an appropriate value. If already installed, the application 32 may then be actuated to complete the process of acquiring the use license 36 (step 511). If not installed, the application 32 is acquired from the distributor 54 set forth in the referral information included with the product license 36 or is obtained from a storage medium available to the computing device 34 and the acquired application 32 is installed on such computing device 34 (step 513), and the installed application 32 is then actuated as at step 511.

[0081] Note that at this point there may already be another obtained use license 36 on the computing device 34, in which case the use license 36 to be obtained is an additional use license 34. At any rate, upon the installed application 32 being actuated and based on the presence of the product license 36, the computing device 34 acquires a use license 36 corresponding thereto (step 515). In particular, the product license 36 and perhaps the definition license 36 from the application 32 are sent to the licensor 46 as identified within the product license 36, along with an identification of the user and/or the computing device 34 thereof and/or the trusted component 38 thereof or the like (step 517).

[0082] The licensor 46 validates all licenses 36 and identifications, and assuming such validations succeed the licensor 46 constructs an appropriate use license 36 based thereon (step 519) and returns same to the requesting user (step 521). Notably, in constructing the use license 36, the licensor 46 obtains a cryptographic key from at least one of the identifications such as a public key (PU) of the user, encrypts the aforementioned decryption key (KD) for the application 32 with such (PU) to result in (PU(KD)), and includes such (PU(KD)) in the constructed and returned use license 36. Also notably, the identifications may include a hardware ID (HWID) corresponding to the user's computing device 34 and such HWID may also be included in the constructed and returned use license

36. Further notably, the licensor 46 may note in an appropriate database that the product license 36 has been submitted and that a corresponding use license 36 has been issued, and also may notify the retailer regarding same.

[0083] The user's computing device 34 may store the returned use license 36 in an appropriate location such as a license store, and such stored use license 36 may then be employed to use certain features of the application. In particular, and turning now to Fig. 6, upon a request to use a particular feature of the application 32 (step 601), such feature of the application 32 may in effect request that the trusted component 38 determine whether a use license 36 on the computing device 34 permits such use of such feature (step 603). In response, the trusted component 38 may locate an obtained use license 36 in a license store (step 605), validate same (step 607), and determine whether such validated use license 36 permits the use of the feature (step 609).

[0084] Presuming that the validated use license 36 does in fact permit the use of the feature, such trusted component 38 then retrieves (PU(KD)) from such use license 36 and applies a corresponding private key (PR) to same to reveal the decryption key (KD) (step 611), and such decryption key (KD) may then be applied in an appropriate manner to decrypt an appropriate portion of the application 32 (step 613). Thereafter, the requested feature may be used (step 615).

[0085] As may be appreciated, at some point the user after having obtained the use license 36 may decide to return same, for any of a variety of reasons. Critically, if the user is allowed to return such use license 36, such user should not be allow to retain a copy of such use license 36. Accordingly, in one embodiment of the present invention, and turning now to Fig. 7, such return is effectuated by way of a request to the retailer 52 that includes the corresponding product license 36 as provided thereby (step 701). In response, the retailer 52 returns an executable or command to the user's computing device 34 (step 703), where the executable / command in effect deletes the use license 36 from the user's computing device in a trusted manner. In particular, the trusted component 38 on such computing device 34 executes the executable / command to delete the

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use license 36 at issue (step 705), and then sends a message to the retailer 52 that the deletion was successful (step 707). Thereafter, the retailer 52 informs the licensor 46 that the corresponding product license 36 is invalid (step 709), and the licensor 46 notes same in a database thereof such that any future request for a use license 36 based on such product license 36 is not honored.

[0086] As may also be appreciated, and remembering that the use license 36 is tied to a particular computing device 34 by way of including a HWID of such computing device 34 in such use license 36, it is to be recognized that the user may wish to transfer the use license 36 to another computing device 34 thereof with a different HWID, again for any of a variety of reasons. Similar to before, if the user is allowed to transfer such use license 36 from a first device 34 to a second device 34, such user should not be allow to retain a copy of such use license 36 as tied to the first device 34. Accordingly, in one embodiment of the present invention, and turning again to Fig. 7, such transfer is effectuate in a manner similar to a return. In particular, such transfer is effectuated by way of a request to the licensor 46 that includes the corresponding product license 36 as provided by the retailer 52 (step 701). In response, the licensor 46 returns an executable or command to the user's computing device 34 (step 703), where the executable / command in effect deletes the use license 36 from the user's computing device in a trusted manner. Again, the trusted component 38 on such computing device 34 executes the executable / command to delete the use license 36 at issue (step 705), and then sends a message to the licensor 46 that the deletion was successful (step 707).

[0087] Significantly, in the context of a transfer, the licensor 46 should be able to issue another use license 36 corresponding to the product license 36, in this case to a different computing device 34 of the user. Accordingly, in the context of a transfer, the licensor 46 notes that the corresponding product license 36 can again be employed (step 709), and any future request for a use license 36 based on such product license 36 is in fact honored.

[0088] In one embodiment of the present invention, a publisher 44 may define a license 36 by way of a license file or the like and then may give the license file to a retailer 52 for sale. In addition, the publisher 44 may create the base copy of the application 32 and provide same to the distributor 54. The retailer 52 may then sell the license 36 to a user and deliver same by way of a licensor 46 operating a web page or the like. The license 36 may be packaged with information that points the user to the distributor 54 if the user needs to obtain the application 32 therefrom. The application 32 may be packaged with information that points the user to the licensor 46 if the user needs to obtain the license 36 therefrom. Thus, a user in possession of the application 32 can find the licensor 46 to obtain a license 36, and a user in possession of the license 36 can find the distributor 54 to obtain the application 32.

Conclusion

[0089] The programming necessary to effectuate the processes performed in connection with the present invention is relatively straight-forward and should be apparent to the relevant programming public. Accordingly, such programming is not attached hereto. Any particular programming, then, may be employed to effectuate the present invention without departing from the spirit and scope thereof.

[0090] In the present invention, an RM architecture 30 is employed to effectuate a licensing architecture 50 where only one copy of a digital application 32 need be released with multiple available features or editions such that a particular use license 36 issued to a particular user specifies which available features / edition may be employed by the user. Thus a publisher 44 of the application 32 need not release multiple editions of the same application 32, and a user in obtaining a use license 36 can select which of the multiple available features / editions are to be licensed.

[0091] It should be appreciated that changes could be made to the embodiments described above without departing from the inventive concepts

thereof. It should be understood, therefore, that this invention is not limited to the particular embodiments disclosed, but it is intended to cover modifications within the spirit and scope of the present invention as defined by the appended claims.

CLAIMS

1. A method of obtaining a use license for using an application on a computing device, the application including a plurality of features, the method comprising:

engaging in a transaction with a retailer to obtain a product license corresponding to the application from such retailer, the product license defining at least one feature of the application that may be employed based on such product license;

obtaining a base copy of the application from a distributor and actuating such application; and

acquiring a use license corresponding to the product license from a licensor by way of the actuated application sending the product license to the licensor along with an identification of at least one of a user, the computing device, and a trusted component operating on the computing device, the use license including feature policy granting rights to employ each feature defined in the product license.

2. The method of claim 1 comprising engaging in a transaction with a retailer to obtain a product license defining at least one feature of the application as offered by the retailer and representing an available edition of the application.

3. The method of claim 1 comprising engaging in a transaction with a retailer to obtain a product license defining at least one feature of the application as selected by an obtainer of such product license.

4. The method of claim 1 comprising engaging in a transaction with a retailer to obtain a product license packaged with referral information including a particular distributor from which the base copy of the application is obtained.

5. The method of claim 1 wherein at least a portion of the application is encrypted and decryptable according to a key (KD), the method comprising acquiring a use license including a cryptographic key from the identification encrypting the key (KD), whereby the trusted component may retrieve such key (KD) and employ same to decrypt the at least a portion of the application.

6. The method of claim 1 wherein the computing device includes a hardware ID (HWID) corresponding to the computing device 34, the method comprising acquiring a use license including the HWID, whereby the trusted component may retrieve such HWID and employ same to determine that the license is intended to be employed on the computing device having such HWID.

7. The method of claim 1 wherein at least a portion of each feature of the application is encrypted and decryptable according to a key (KD), the method comprising acquiring a use license including a cryptographic key from the identification encrypting the key (KD), the method further comprising:

- receiving a request to use a particular feature of the application;
- locating the acquired use license;
- determining that the feature policy in the located use license permits the requested use of the particular feature;
- retrieving the encrypted key (KD) from the located use license;
- decrypting the encrypted key (KD) and employing same to decrypt the at least a portion of the particular feature of the application; and

using the particular feature of the application.

8. The method of claim 7 further comprising validating the located use license.

9. The method of claim 1 further comprising after having acquired the use license returning same to reverse the transaction by which the product license was obtained, returning such use license including:

sending a return request to the retailer including the corresponding product license as provided thereby;

receiving from the retailer one of an executable and a command which deletes the use license from the computing device in a trusted manner;

executing the executable / command to delete the use license and send a message to the retailer that the deletion of the use license was successful; whereby the retailer informs the licensor that the product license is invalid and the licensor notes same in a database thereof such that any future request for a use license based on the product license is not honored.

10. The method of claim 1 wherein the acquired use license is tied to the computing device, the method further comprising after having acquired the use license returning same to acquire another use license tied to another computing device, returning such use license including:

sending a transfer request to the licensor including the corresponding product license as provided by the retailer;

receiving from the licensor one of an executable and a command which deletes the use license from the computing device in a trusted manner;

executing the executable / command to delete the use license and send a message to the licensor that the deletion of the use license was successful; whereby the product license remains valid and the licensor notes that

the product license can again be employed to obtain the another use license tied to the another computing device.

11. An application for being used on a computing device and a use license for using the application, the application having a plurality of features and comprising:

an instantiation portion for instantiating such application on the computing device, the instantiation portion being encrypted and decryptable according to a key (KD); and

a plurality of feature portions, each feature portion corresponding to a feature,

the use license comprising:

instantiation policy for determining whether the instantiation portion may be employed to instantiate the application;

feature policy for determining whether each feature of the application may be employed; and

the key (KD) encrypted and decryptable according to a key available to a trusted component of the computing device,

whereby the trusted component retrieves such key (KD) from the use license if the instantiation policy of the use license determines that the instantiation portion may in fact be employed to instantiate the application and employs the retrieved (KD) to decrypt the instantiation portion, the decrypted instantiation portion being employed to instantiate the application, and

whereby each feature portion requires as a condition precedent to the use thereof that the trusted component determine that the feature policy of the use license allows such use of such feature portion.

12. The application and use license of claim 11 wherein the computing device includes a hardware ID (HWID) corresponding to the computing device 34 and the use license includes the HWID, whereby the trusted component

may retrieve such HWID and employ same to determine that the license is intended to be employed on the computing device having such HWID.

ABSTRACT OF THE DISCLOSURE

An application includes a plurality of features. A transaction is engaged with a retailer to obtain a product license corresponding to the application. The product license defines at least one feature of the application that may be employed. A base copy of the application is obtained from a distributor and is actuated. A use license corresponding to the product license is acquired from a licensor by way of the actuated application sending the product license to the licensor along with an identification of at least one of a user, the computing device, and a trusted component operating on the computing device, where the use license includes feature policy granting rights to employ each feature defined in the product license.

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TITLE OF THE INVENTION**Flexible Licensing Architecture for Licensing Digital Application****TECHNICAL FIELD**

[0001] The present invention relates to a licensing architecture for providing a license to operate a digital application on a computing device or the like. More particularly, the invention relates to such a licensing architecture where only one version of the digital application need be released with multiple available features, and where a particular license issued to a particular user specifies which available features may be employed by the user. Thus, the publisher of the application need not release multiple versions of the same application, and the user in obtaining the license can select which of the multiple available features are to be licensed.

BACKGROUND OF THE INVENTION

[0002] Rights management and enforcement is highly desirable in connection with digital content such as a digital application or the like, where such digital application is to be distributed to one or more users. Typical modes of distribution include tangible devices such as a magnetic (floppy) disk, a magnetic

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tape, an optical (compact) disk (CD), etc., and intangible media such as an electronic bulletin board, an electronic network, the Internet, etc. Upon being received by the user on a computing device thereof, such user can activate the application with the aid of an appropriate operating system on the computing device.

[0003] Typically, an author and/or publisher of the application wishes to distribute such application to each of many users or recipients in exchange for a license fee or some other consideration. In such scenario, then, the application may be a word processing application, a spreadsheet application, a browser application, a gaming application, a media player application, a combination thereof, and the like. Such author / publisher or other similar entity (hereinafter, "publisher"), given the choice, would likely wish to restrict what each user can do with such published application. For example, the publisher would like to restrict the user from copying and re-distributing such application to a second user, at least in a manner that denies the publisher a license fee from such second user.

[0004] However, after publication has occurred, such publisher has very little if any real control over the application. This is especially problematic in view of the fact that practically every personal computer includes the software and hardware necessary to make an exact digital copy of such application, and to download such exact digital copy to a write-able magnetic or optical disk, or to send such exact digital copy over a network such as the Internet to any destination.

[0005] Of course, as part of a transaction wherein the application is distributed, the publisher may require the user / recipient of the application to promise not to re-distribute such application in an unwelcome manner. However, such a promise is easily made and easily broken. A publisher may attempt to prevent such re-distribution through any of several known security devices, usually involving encryption and decryption. However, there is likely very little that prevents a mildly determined user from decrypting an encrypted application, saving such application in an un-encrypted form, and then re-distributing same.

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[0006] In addition, the publisher may wish to provide the user with the flexibility to purchase different types or editions of the application. For example, the publisher may wish to provide a full-featured edition at a higher price and a rudimentary edition at a lower price. Likewise, the publisher may wish to offer a business edition and a home edition, a student edition and a teacher edition, or the like. Note, though, that in the prior art, each such edition of the application would require that the publisher distribute a separate set of operating code. Thus, and as should be appreciated, offering multiple editions of the same application requires that a publisher maintain, package, and sell each such edition separately, with considerable expense. Moreover, each such edition likely is supported separately, updated separately, and debugged separately, with even more considerable expense. Also, when errors or bugs in the application are found, each such edition likely must be separately reviewed and corrected, if in fact the error exists in all such editions, one again with considerable expense.

[0007] To provide the user with the flexibility to purchase different editions of an application, a publisher may offer different types of use licenses at different license fees, while at the same time holding the user to the terms of whatever type of license is in fact purchased. For example, and in the case where the application includes multiple available features, the publisher may wish to offer a user menus of such available features / editions to be licensed, or even allow a user to select particular ones of the available features to be licensed. Thus, the user in purchasing such a license would be able to employ the available features of the application that are enabled by the license, and would be restricted from employing the available features of the application that are not enabled by the license. Presumably, fees for licenses would vary based on the available features enabled thereby.

[0008] Significantly, by offering multiple types of licenses for the application or by offering customized licenses for the application, the publisher can avoid having to distribute multiple distinct editions of the application, each tailored to a particular set of available features. Instead, the publisher need only distribute a single base copy of the application with all available features, and then provide a license that enables only a certain subset of all such available features. As may

be appreciated, if the single base copy of the application is distributed in a form such that the application is inoperable without a valid license, such application may be freely distributed and re-distributed, yet may only be operated by a user if such user obtains a license from the publisher or an agent thereof.

[0009] Rights Management (RM) and enforcement architectures and methods have previously been provided to allow the controlled operation of arbitrary forms of digital applications, where such control is flexible and definable by the publisher of such application. Typically, a digital license is provided to operate the application, where the application cannot be actuated in a meaningful manner without such license. For example, it may be the case that at least a portion of the application is encrypted and the license includes a decryption key for decrypting such encrypted portion. In addition, it may be the case that the license is tied to a user or a computing device thereof, and such computing device includes a security feature that ensures that the terms of the license are honored.

[0010] However, such RM architectures have not heretofore been employed to effectuate a licensing architecture where only one copy of a digital application need be released with multiple available features or editions such that a particular license issued to a particular user specifies which available features / edition may be employed by the user. Accordingly, a need exists for such a licensing architecture, whereby a publisher of an application need not release multiple editions of the same application, and a user in obtaining a license can select which of the multiple available features / editions are to be licensed.

SUMMARY OF THE INVENTION

[0011] The aforementioned needs are satisfied at least in part by the present invention in which a method is provided to obtain a use license for using an application on a computing device, where the application includes a plurality of features. In the method a transaction is engaged with a retailer to obtain a product license corresponding to the application from such retailer, where the product license defines at least one feature of the application that may be employed based on such product license. In addition, a base copy of the application is obtained from a distributor and is actuated. The use license

corresponds to the product license and is acquired from a licensor by way of the actuated application sending the product license to the licensor along with an identification of at least one of a user, the computing device, and a trusted component operating on the computing device, where the use license includes feature policy granting rights to employ each feature defined in the product license.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] The foregoing summary, as well as the following detailed description of the embodiments of the present invention, will be better understood when read in conjunction with the appended drawings. For the purpose of illustrating the invention, there are shown in the drawings embodiments which are presently preferred. As should be understood, however, the invention is not limited to the precise arrangements and instrumentalities shown. In the drawings:

[0013] Fig. 1 is a block diagram representing an exemplary non-limiting computing environment in which the present invention may be implemented;

[0014] Fig. 2 is a block diagram representing an exemplary network environment having a variety of computing devices in which the present invention may be implemented;

[0015] Fig. 3 is a block diagram showing an enforcement architecture of an example of a trust-based system, including a digital license in accordance with one embodiment of the present invention;

[0016] Fig. 4 is a block diagram showing a licensing architecture for issuing a use license to employ an edition of the application of Fig. 3 in accordance with one embodiment of the present invention;

[0017] Fig. 5 is a flow diagram showing key steps performed during obtaining the use license of Figs. 3 and 4 in accordance with one embodiment of the present invention;

[0018] Fig. 6 is a flow diagram showing key steps performed when obtaining the use license of Figs. 3 and 4 to use the application of Fig. 3 in accordance with one embodiment of the present invention; and

[0019] Fig. 7 is a flow diagram showing key steps performed when returning or transferring the use license of Figs. 3 and 4 in accordance with one embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

COMPUTER ENVIRONMENT

[0020] Fig. 1 and the following discussion are intended to provide a brief general description of a suitable computing environment in which the invention may be implemented. It should be understood, however, that handheld, portable, and other computing devices of all kinds are contemplated for use in connection with the present invention. While a general purpose computer is described below, this is but one example, and the present invention requires only a thin client having network server interoperability and interaction. Thus, the present invention may be implemented in an environment of networked hosted services in which very little or minimal client resources are implicated, e.g., a networked environment in which the client device serves merely as a browser or interface to the World Wide Web.

[0021] Although not required, the invention can be implemented via an application programming interface (API), for use by a developer, and/or included within the network browsing software which will be described in the general context of computer-executable instructions, such as program modules, being executed by one or more computers, such as client workstations, servers, or other devices. Generally, program modules include routines, programs, objects, components, data structures and the like that perform particular tasks or implement particular abstract data types. Typically, the functionality of the program modules may be combined or distributed as desired in various embodiments. Moreover, those skilled in the art will appreciate that the invention may be practiced with other computer system configurations. Other well known computing systems, environments, and/or configurations that may be suitable for use with the invention include, but are not limited to, personal computers (PCs), automated teller machines, server computers, hand-held or laptop devices, multi-

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processor systems, microprocessor-based systems, programmable consumer electronics, network PCs, minicomputers, mainframe computers, and the like. The invention may also be practiced in distributed computing environments where tasks are performed by remote processing devices that are linked through a communications network or other data transmission medium. In a distributed computing environment, program modules may be located in both local and remote computer storage media including memory storage devices.

[0022] Fig. 1 thus illustrates an example of a suitable computing system environment 100 in which the invention may be implemented, although as made clear above, the computing system environment 100 is only one example of a suitable computing environment and is not intended to suggest any limitation as to the scope of use or functionality of the invention. Neither should the computing environment 100 be interpreted as having any dependency or requirement relating to any one or combination of components illustrated in the exemplary operating environment 100.

[0023] With reference to Fig. 1, an exemplary system for implementing the invention includes a general purpose computing device in the form of a computer 110. Components of computer 110 may include, but are not limited to, a processing unit 120, a system memory 130, and a system bus 121 that couples various system components including the system memory to the processing unit 120. The system bus 121 may be any of several types of bus structures including a memory bus or memory controller, a peripheral bus, and a local bus using any of a variety of bus architectures. By way of example, and not limitation, such architectures include Industry Standard Architecture (ISA) bus, Micro Channel Architecture (MCA) bus, Enhanced ISA (EISA) bus, Video Electronics Standards Association (VESA) local bus, and Peripheral Component Interconnect (PCI) bus (also known as Mezzanine bus).

[0024] Computer 110 typically includes a variety of computer readable media. Computer readable media can be any available media that can be accessed by computer 110 and includes both volatile and nonvolatile media, removable and non-removable media. By way of example, and not limitation, computer readable media may comprise computer storage media and

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communication media. Computer storage media includes both volatile and nonvolatile, removable and non-removable media implemented in any method or technology for storage of information such as computer readable instructions, data structures, program modules or other data. Computer storage media includes, but is not limited to, RAM, ROM, EEPROM, flash memory or other memory technology, CDROM, digital versatile disks (DVD) or other optical disk storage, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or any other medium which can be used to store the desired information and which can be accessed by computer 110. Communication media typically embodies computer readable instructions, data structures, program modules or other data in a modulated data signal such as a carrier wave or other transport mechanism and includes any information delivery media. The term "modulated data signal" means a signal that has one or more of its characteristics set or changed in such a manner as to encode information in the signal. By way of example, and not limitation, communication media includes wired media such as a wired network or direct-wired connection, and wireless media such as acoustic, RF, infrared, and other wireless media. Combinations of any of the above should also be included within the scope of computer readable media.

[0025] The system memory 130 includes computer storage media in the form of volatile and/or nonvolatile memory such as read only memory (ROM) 131 and random access memory (RAM) 132. A basic input/output system 133 (BIOS), containing the basic routines that help to transfer information between elements within computer 110, such as during start-up, is typically stored in ROM 131. RAM 132 typically contains data and/or program modules that are immediately accessible to and/or presently being operated on by processing unit 120. By way of example, and not limitation, Fig. 1 illustrates operating system 134, application programs 135, other program modules 136, and program data 137.

[0026] The computer 110 may also include other removable/non-removable, volatile/nonvolatile computer storage media. By way of example only, Fig. 1 illustrates a hard disk drive 141 that reads from or writes to non-removable, nonvolatile magnetic media, a magnetic disk drive 151 that reads from or writes to

a removable, nonvolatile magnetic disk 152, and an optical disk drive 155 that reads from or writes to a removable, nonvolatile optical disk 156, such as a CD ROM or other optical media. Other removable/non-removable, volatile/nonvolatile computer storage media that can be used in the exemplary operating environment include, but are not limited to, magnetic tape cassettes, flash memory cards, digital versatile disks, digital video tape, solid state RAM, solid state ROM, and the like. The hard disk drive 141 is typically connected to the system bus 121 through a non-removable memory interface such as interface 140, and magnetic disk drive 151 and optical disk drive 155 are typically connected to the system bus 121 by a removable memory interface, such as interface 150.

[0027] The drives and their associated computer storage media discussed above and illustrated in Fig. 1 provide storage of computer readable instructions, data structures, program modules and other data for the computer 110. In Fig. 1, for example, hard disk drive 141 is illustrated as storing operating system 144, application programs 145, other program modules 146, and program data 147. Note that these components can either be the same as or different from operating system 134, application programs 135, other program modules 136, and program data 137. Operating system 144, application programs 145, other program modules 146, and program data 147 are given different numbers here to illustrate that, at a minimum, they are different copies. A user may enter commands and information into the computer 110 through input devices such as a keyboard 162 and pointing device 161, commonly referred to as a mouse, trackball or touch pad. Other input devices (not shown) may include a microphone, joystick, game pad, satellite dish, scanner, or the like. These and other input devices are often connected to the processing unit 120 through a user input interface 160 that is coupled to the system bus 121, but may be connected by other interface and bus structures, such as a parallel port, game port or a universal serial bus (USB).

[0028] A monitor 191 or other type of display device is also connected to the system bus 121 via an interface, such as a video interface 190. A graphics interface 182, such as Northbridge, may also be connected to the system bus 121. Northbridge is a chipset that communicates with the CPU, or

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host processing unit 120, and assumes responsibility for accelerated graphics port (AGP) communications. One or more graphics processing units (GPUs) 184 may communicate with graphics interface 182. In this regard, GPUs 184 generally include on-chip memory storage, such as register storage and GPUs 184 communicate with a video memory 186. GPUs 184, however, are but one example of a coprocessor and thus a variety of co-processing devices may be included in computer 110. A monitor 191 or other type of display device is also connected to the system bus 121 via an interface, such as a video interface 190, which may in turn communicate with video memory 186. In addition to monitor 191, computers may also include other peripheral output devices such as speakers 197 and printer 196, which may be connected through an output peripheral interface 195.

[0029] The computer 110 may operate in a networked environment using logical connections to one or more remote computers, such as a remote computer 180. The remote computer 180 may be a personal computer, a server, a router, a network PC, a peer device or other common network node, and typically includes many or all of the elements described above relative to the computer 110, although only a memory storage device 181 has been illustrated in Fig. 1. The logical connections depicted in Fig. 1 include a local area network (LAN) 171 and a wide area network (WAN) 173, but may also include other networks. Such networking environments are commonplace in offices, enterprise-wide computer networks, intranets and the Internet.

[0030] When used in a LAN networking environment, the computer 110 is connected to the LAN 171 through a network interface or adapter 170. When used in a WAN networking environment, the computer 110 typically includes a modem 172 or other means for establishing communications over the WAN 173, such as the Internet. The modem 172, which may be internal or external, may be connected to the system bus 121 via the user input interface 160, or other appropriate mechanism. In a networked environment, program modules depicted relative to the computer 110, or portions thereof, may be stored in the remote memory storage device. By way of example, and not limitation, Fig. 1 illustrates remote application programs 185 as residing on memory device 181.

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It will be appreciated that the network connections shown are exemplary and other means of establishing a communications link between the computers may be used.

[0031] One of ordinary skill in the art can appreciate that a computer 110 or other client device can be deployed as part of a computer network. In this regard, the present invention pertains to any computer system having any number of memory or storage units, and any number of applications and processes occurring across any number of storage units or volumes. The present invention may apply to an environment with server computers and client computers deployed in a network environment, having remote or local storage. The present invention may also apply to a standalone computing device, having programming language functionality, interpretation and execution capabilities.

[0032] Distributed computing facilitates sharing of computer resources and services by direct exchange between computing devices and systems. These resources and services include the exchange of information, cache storage, and disk storage for files. Distributed computing takes advantage of network connectivity, allowing clients to leverage their collective power to benefit the entire enterprise. In this regard, a variety of devices may have applications, objects or resources that may interact to implicate authentication techniques of the present invention for trusted graphics pipeline(s).

[0033] Fig. 2 provides a schematic diagram of an exemplary networked or distributed computing environment. The distributed computing environment comprises computing objects 10a, 10b, etc. and computing objects or devices 110a, 110b, 110c, etc. These objects may comprise programs, methods, data stores, programmable logic, etc. The objects may comprise portions of the same or different devices such as PDAs, televisions, MP3 players, televisions, personal computers, etc. Each object can communicate with another object by way of the communications network 14. This network may itself comprise other computing objects and computing devices that provide services to the system of Fig. 2. In accordance with an aspect of the invention, each object 10 or 110 may contain an application that might request the authentication techniques of the present invention for trusted graphics pipeline(s).

[0034] It can also be appreciated that an object, such as 110c, may be hosted on another computing device 10 or 110. Thus, although the physical environment depicted may show the connected devices as computers, such illustration is merely exemplary and the physical environment may alternatively be depicted or described comprising various digital devices such as PDAs, televisions, MP3 players, etc., software objects such as interfaces, COM objects and the like.

[0035] There are a variety of systems, components, and network configurations that support distributed computing environments. For example, computing systems may be connected together by wireline or wireless systems, by local networks or widely distributed networks. Currently, many of the networks are coupled to the Internet, which provides the infrastructure for widely distributed computing and encompasses many different networks.

[0036] In home networking environments, there are at least four disparate network transport media that may each support a unique protocol such as Power line, data (both wireless and wired), voice (e.g., telephone) and entertainment media. Most home control devices such as light switches and appliances may use power line for connectivity. Data Services may enter the home as broadband (e.g., either DSL or Cable modem) and are accessible within the home using either wireless (e.g., HomeRF or 802.11b) or wired (e.g., Home PNA, Cat 5, even power line) connectivity. Voice traffic may enter the home either as wired (e.g., Cat 3) or wireless (e.g., cell phones) and may be distributed within the home using Cat 3 wiring. Entertainment media may enter the home either through satellite or cable and is typically distributed in the home using coaxial cable. IEEE 1394 and DVI are also emerging as digital interconnects for clusters of media devices. All of these network environments and others that may emerge as protocol standards may be interconnected to form an intranet that may be connected to the outside world by way of the Internet. In short, a variety of disparate sources exist for the storage and transmission of data, and consequently, moving forward, computing devices will require ways of protecting content at all portions of the data processing pipeline.

[0037] The 'Internet' commonly refers to the collection of networks and gateways that utilize the TCP/IP suite of protocols, which are well-known in the art of computer networking. TCP/IP is an acronym for "Transport Control Protocol/Interface Program." The Internet can be described as a system of geographically distributed remote computer networks interconnected by computers executing networking protocols that allow users to interact and share information over the networks. Because of such wide-spread information sharing, remote networks such as the Internet have thus far generally evolved into an open system for which developers can design software applications for performing specialized operations or services, essentially without restriction.

[0038] Thus, the network infrastructure enables a host of network topologies such as client/server, peer-to-peer, or hybrid architectures. The "client" is a member of a class or group that uses the services of another class or group to which it is not related. Thus, in computing, a client is a process, i.e., roughly a set of instructions or tasks, that requests a service provided by another program. The client process utilizes the requested service without having to "know" any working details about the other program or the service itself. In a client/server architecture, particularly a networked system, a client is usually a computer that accesses shared network resources provided by another computer e.g., a server. In the example of Fig. 2, computers 110a, 110b, etc. can be thought of as clients and computer 10a, 10b, etc. can be thought of as the server where server 10a, 10b, etc. maintains the data that is then replicated in the client computers 110a, 110b, etc.

[0039] A server is typically a remote computer system accessible over a remote network such as the Internet. The client process may be active in a first computer system, and the server process may be active in a second computer system, communicating with one another over a communications medium, thus providing distributed functionality and allowing multiple clients to take advantage of the information-gathering capabilities of the server.

[0040] Client and server communicate with one another utilizing the functionality provided by a protocol layer. For example, Hypertext-Transfer Protocol (HTTP) is a common protocol that is used in conjunction with the World

Wide Web (WWW). Typically, a computer network address such as a Universal Resource Locator (URL) or an Internet Protocol (IP) address is used to identify the server or client computers to each other. The network address can be referred to as a Universal Resource Locator address. For example, communication can be provided over a communications medium. In particular, the client and server may be coupled to one another via TCP/IP connections for high-capacity communication.

[0041] Thus, Fig. 2 illustrates an exemplary networked or distributed environment, with a server in communication with client computers via a network/bus, in which the present invention may be employed. In more detail, a number of servers 10a, 10b, etc., are interconnected via a communications network/bus 14, which may be a LAN, WAN, intranet, the Internet, etc., with a number of client or remote computing devices 110a, 110b, 110c, 110d, 110e, etc., such as a portable computer, handheld computer, thin client, networked appliance, or other device, such as a VCR, TV, oven, light, heater and the like in accordance with the present invention. It is thus contemplated that the present invention may apply to any computing device in connection with which it is desirable to process, store or render secure content from a trusted source.

[0042] In a network environment in which the communications network/bus 14 is the Internet, for example, the servers 10 can be Web servers with which the clients 110a, 110b, 110c, 110d, 110e, etc. communicate via any of a number of known protocols such as HTTP. Servers 10 may also serve as clients 110, as may be characteristic of a distributed computing environment. Communications may be wired or wireless, where appropriate. Client devices 110 may or may not communicate via communications network/bus 14, and may have independent communications associated therewith. For example, in the case of a TV or VCR, there may or may not be a networked aspect to the control thereof. Each client computer 110 and server computer 10 may be equipped with various application program modules or objects 135 and with connections or access to various types of storage elements or objects, across which files may be stored or to which portion(s) of files may be downloaded or migrated. Thus, the present invention can be utilized in a computer network environment having client

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computers 110a, 110b, etc. that can access and interact with a computer network/bus 14 and server computers 10a, 10b, etc. that may interact with client computers 110a, 110b, etc. and other devices 111 and databases 20.

Rights Management (RM) Overview

[0043] As is known, and referring now to Fig. 3, rights management (RM) and enforcement is highly desirable in connection with a digital application 32 that is to be distributed to users. Upon being received by the user, such user instantiates the application 32 with the aid of an appropriate computing device 34 or the like.

[0044] Typically, an application author or publisher (hereinafter 'publisher') 44 distributing such digital application 32 wishes to restrict what the user can do with such distributed application 32. For example, the publisher 44 may wish to restrict the user from copying and re-distributing such application 32 to a second user, or may wish to allow distributed application 32 to be actuated only a limited number of times, only for a certain total time, only on a certain type of machine, only on a certain type of rendering platform, only by a certain type of user, etc.

[0045] However, after distribution has occurred, such publisher 44 has very little if any control over the application 32. An RM system 30, then, allows the controlled actuating of an application 32, where such control is flexible and definable by the publisher 44 of such application 32. Typically, the application 32 is distributed to the user in the form of a package 33 by way of any appropriate distribution channel. The package 33 as distributed may include the application 32 or a portion thereof encrypted with a symmetric encryption / decryption key (KD), (i.e., (KD(AP))), as well as other information identifying the application 32, how to acquire a license for such application 32, etc.

[0046] The trust-based RM system 30 allows the publisher 44 of the application 32 to specify license rules that must be satisfied before such application 32 is allowed to be actuated on a user's computing device 34. Such license rules can include the aforementioned temporal requirement, and may be

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embodied within a digital license or use document (hereinafter 'license') 36 that the user / user's computing device 34 (such terms being interchangeable unless circumstances require otherwise) must obtain from the publisher 44 or an agent thereof. Such license 36 also includes the decryption key (KD) for decrypting the encrypted portion of the application 32, perhaps encrypted according to a key decryptable by the user's computing device 34. As seen in Fig. 3, such encrypting key may be a public key of the user's computing device 34 (PU-BB), and the user's computing device 34 presumably has the corresponding private key (PR-BB) by which (PU-BB(KD)) may be decrypted.

[0047] The publisher 44 for the application 32 must trust that the user's computing device 34 will abide by the rules and requirements specified by such publisher 44 in the license 36, i.e. that the application 32 will not be actuated unless the rules and requirements within the license 36 are satisfied. Preferably, then, the user's computing device 34 is provided with a trusted component or mechanism 38 that will not actuate the application 32 except according to the license rules embodied in the license 36 associated with the application 32 and obtained by the user.

[0048] The trusted component 38 typically has a license evaluator 40 that determines whether the license 36 is valid, reviews the license rules and requirements in such valid license 36, and determines based on the reviewed license rules and requirements whether the requesting user has the right to actuate the corresponding application 32 in the manner sought, among other things. As should be understood, the license evaluator 40 is trusted in the RM system 30 to carry out the wishes of the publisher 44 of the application 32 according to the rules and requirements in the license 36, and the user should not be able to easily alter such trusted element for any purpose, nefarious or otherwise.

[0049] As should be understood, the rules and requirements in the license 36 can specify whether the user has rights to actuate the application 32 based on any of several factors, including who the user is, where the user is located, what type of computing device 34 the user is using, what operating system is calling the RM system 30, the date, the time, etc. In addition, the rules

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and requirements of the license 36 may limit the license 36 to a pre-determined number of actuations, or pre-determined operating time, for example. Thus, the trusted component 38 may need to refer to a clock 42 on the computing device 34.

[0050] The rules and requirements may be specified in the license 36 according to any appropriate language and syntax. For example, the language may simply specify attributes and values that must be satisfied (DATE must be later than X, e.g.), or may require the performance of functions according to a specified script (IF DATE greater than X, THEN DO . . . , e.g.).

[0051] Upon the license evaluator 40 determining that the license 36 is valid and that the user satisfies the rules and requirements therein, the application 32 can then be actuated. In particular, to actuate the application 32, the decryption key (KD) is obtained from the license 36 and is applied to (KD(AP)) from the package 33 to result in the actual application 32, and the actual application 32 is then in fact actuated in the manner set forth in the license 36.

[0052] As set forth above, the license 36 with (PU-BB(KD)) in effect authorizes an entity in possession of (PR-BB) to access (KD) and thereby access the application 32 encrypted according to such (KD), presuming of course that the entity abides by all conditions as set forth in the license 36. As should be appreciated, though, other types of licenses 36 may exist within the RM system 30.

[0053] For example, it may be appreciated that in one scenario the publisher 44 of the application 32 may authorize one or more particular licensors 46 to issue a license 36 for the application 32 by providing the licensor 46 with a publishing license 36p. As may be appreciated, such publishing license 36p is similar to the license 36 in that such publishing license 36p likely includes the decryption key (KD) for decrypting the application 32, here encrypted according to a public key of the licensor 46 (PU-BB). Likewise, the publishing license 36p likely includes the rules and requirements for rendering the content 32. Here, however, such rules and requirements are to be inserted into the license 36 as issued by the licensor 46, and are not especially applicable to such licensor 46.

[0054] Note, though, that the publishing license 36p may indeed include other rules and requirements that are indeed applicable to the licensor 46.

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Accordingly, the licensor 46 should include a trusted component 38 with a license evaluator 40 in a manner akin to the user's computing device 34. Significantly, each type of license 36, 36p, etc. (hereinafter, 'license 36') as proffered typically includes a digital signature for authentication / verification purposes, and each digital signature is validated by the trusted component 38 before the license 36 is honored. Of course, if any validation fails, the process ends and the license 36 is not honored.

Flexible Licensing Architecture for Licensing Digital Application

[0055] As was set forth above, a publisher 44 may wish to provide a user with the flexibility to purchase different types or editions of an application 32. For example, and again, the publisher 44 may wish to provide a full-featured edition, a rudimentary edition, a business edition, a home edition, etc. However, according to the prior art, each such edition of the application 32 would be separately issued as a code set (i.e., computer file or series of such files or the like). As should be evident, supporting, maintaining, marketing, and distributing each such separately issued code set could be greatly complicated, especially as compared to performing such chores with regard to a single commonly issued code set.

[0056] Thus, in one embodiment of the present invention, a publisher in fact issues a common code set for the application 32, but differentiates between editions of the application 32 by issuing differing corresponding RM licenses 36. Significantly, the application 32 as set forth within the common code set is defined to have a plurality of features or the like, and each license 36 is defined to enable certain ones of the defined features and/or disable certain ones of the defined features. Constructing and employing such a license 36 for the application 32 within the RM architecture 30 is known or should be apparent to the relevant public and therefore need not be set forth herein in any detail. Accordingly, any such method of constructing and employing such a license 36 may be used without departing from the spirit and set forth in connection with the present invention.

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[0057] For example, it maybe the case that the application 32 has an instantiation portion that instantiates same on the computing device 34, and that such instantiation portion is encrypted and decryptable according to the key (KD) from the license 36. Thus, upon an appropriate command from the user or the like, the trusted component 38 retrieves such key (KD) from the license 36 if such license 36 so allows and then employs the retrieved (KD) to decrypt the instantiation portion, and the decrypted instantiation portion is then employed to instantiate the application 32.

[0058] Similarly, it may be the case that the application 32 is defined to have several feature portions, each corresponding to a feature, and that each feature portion requires as a condition precedent to the use thereof that the trusted component 38 confirm that the license 36 so allows. Thus, and as should now be appreciated, if an application 36 has features A, B, and C, a first license 32 corresponding to a first edition of the application 32 may allow use of feature A only, a second license 32 corresponding to a second edition of the application 32 may allow use of features B and C only, a third license 32 corresponding to a third edition of the application 32 may allow use of all of features A, B, and C, and the like. Note here that editions may be defined by the publisher 44 by offering only certain types of corresponding licenses 36, or may be customized by a user in the course of obtaining a particular license 36, presuming that the publisher in fact offers such a customized license 36. In obtaining a particular type of license 36, a user is able to employ the available features of the application 32 that are enabled by the license 36, and is restricted from employing the available features of the application 32 that are not enabled by the license 36. Presumably, in the case where a license 36 is obtained as a purchase based on a fee, such fee would vary based on the available features in the application 32 enabled thereby.

[0059] Significantly, although the application 32 may be offered in at least the three editions as set forth above if not more, all three editions may be based on a single base copy of the application 32 with all available features included therein. As should be appreciated, each feature is available to a particular user with a particular license 36 if the license enables such feature or does not disable such feature. Moreover, the single base copy may be widely

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distributed and re-distributed without fear of inappropriate use inasmuch as use of the application 32 can occur only with a properly-obtained license 36.

[0060] Notably, to effectuate issuing such license 36 for an application and in one embodiment of the present invention, a licensing architecture 50 such as that shown in Fig. 4 is provided. As seen in such Fig. 4, the licensing architecture 50 includes the publisher 44 and the licensor 46 of Fig. 3, and may also include a retailer 52 that retails the application 32 to a user. Of course, the publisher 44 may also be the retailer 44 without departing from the spirit and scope of the present invention.

[0061] Presumably, such retailer 52 is a retail location that performs a retail transaction with a user to obtain the application 32 and/or to obtain a license 36 corresponding thereto. In doing so, the retailer 52 would direct the user to a distributor 54 or the like operating a distribution site or the like to obtain the application 32 itself and/or would direct the user to the licensor 46 for the license 36 itself. Presumably, although not necessarily, the retailer 52, the licensor 46, and the distributor 54 are all networked together by way of a network such as the Internet, and the user visits the retailer 52 and obtains the application 32 from the distributor 54 and the license 36 from the licensor 46 (hereinafter, 'the use license 36') by way of such network.

[0062] In one embodiment of the present invention, and as seen in Fig. 4, the application 32 as provided by the publisher 44 includes executable code by which the application 32 is instantiated and employed. Significantly, such application 32 as provided by the publisher 44 also includes a number of special licenses 36, including a definition license 36, an Initial license 36, and a non-network license 36, where such special licenses 36 are distinct from the use license 36 heretofore referenced.

[0063] The definition license 36, again, is not itself a use license 36 that may be obtained from a licensor 46 to employ the application 32, but instead is a special license 36 that defines all of the features available in the application 32 by way of an appropriate use license 36. Such definition license 36 sets forth all of the features of the application 32 as available rights, then, but does

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not actually grant any of such rights. Instead, an obtained use license 36 in enabling a particular feature grants a corresponding right.

[0064] Thus, to continue the example from above, if an application 32 included three defined features A, B, and C, the definition license 36 would set forth each such features A, B, and C together with pertinent information relating thereto. Such pertinent features may for example include a reference to the feature in the application 32, a description, and perhaps edition information regarding which edition of the application 32 includes such feature. Thus, a use license 36 that enables such feature may for example employ such information to allow a user to employ same. Likewise, if a use license 36 does not enable such feature, such information may nevertheless be employed to inform a user of the availability of such feature, and perhaps even direct the user to a licensor 46 to obtain another use license 36 that would enable such feature.

[0065] Unlike a definition license 36, an initial license 36, is itself akin to a use license 36 that may be used to employ the application 32. However, such use license 36 is a special license 36 in that such use license 36 can only be employed in an initial manner, such as for example to allow a user to try out the application 32 for a defined amount or length of time, for example. Note here that the use license 36 is not tied to the user or the computing device 34 thereof.

[0066] Such initial license 36 may or may not grant rights to all features of the application 32 as set forth within the definition license 36, depending upon how the publisher 44 has constructed such initial license 36. Generally, the initial license 36 may be offered to allow a prospective user a period of time to try out the application 32 without purchasing a use license 36, to allow the user to have free access to a rudimentary edition of the application 32 without the need to obtain a use license 36, or the like. In the former case, the initial license 36 may grant rights to all features, but for a relatively short period of time, while in the latter case, the initial license may grant rights to some features, but for a relatively long period of time. Thus, a user may employ the initial license 36 in a temporary manner until such user either decides to obtain a use license 36 or to not further employ the application, or may employ the initial license 36 to use a rudimentary form of the application 32, as the case may be.

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[0067] Like an initial license 36, a non-network license 36 is itself akin to a use license 36 that may be used to employ the application 32. However, such non-network license 36 is a special license 36 in the event that a user does not have network access to the licensor 46 but still wishes to use the application 32. Typically, in such a case, the non-network license 36 cannot be employed unless the user obtains a confirmation code, such as for example by telephone or mail, where such confirmation code may be obtained in exchange for a fee. Thus, with such confirmation code, the non-network license 36 enables the application 32 to be employed as if the user had obtained some sort of use license 36 from the licensor 46. Here too, the non-network license 36 is not tied to the user or the computing device 34 thereof, at least not directly, although obtaining the confirmation code does at least indirectly tie the non-networked license 36 to the user presuming the user identified itself in the course of obtaining such confirmation code.

[0068] As with the initial license 36, the non-networked license 36 may or may not grant rights to all features of the application 32 as set forth within the definition license 36, depending upon how the publisher 44 has constructed such non-networked license 36. Note that while the non-networked license 36 may grant rights to all features of the application 32, doing so may be inadvisable inasmuch as the obtained special code could be transferred by the user to others who would then be able to access all such features of the application 32.

[0069] Typically, the retailer 52 can provide the application 32 with the aforementioned special licenses 36 to the user, either directly or by way of the aforementioned distributor 54. Note, though, that the user may also obtain such application 32 from the publisher 44 or from any other source without departing from the spirit and scope of the present invention. In fact, and as set forth in more detail below, it may be that the user obtains the application 32 from an acquaintance or a third party and then obtains a use license 36 by way of the retailer 52.

[0070] In any case, and in one embodiment of the present invention, the application 32 as distributed to the user may additionally be packaged with referral information including an identification of a particular retailer

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52. Thus, in the situation where the user obtains the application 32 from a source other than the retailer 52, such referral information refers such user to such retailer 52 to effectuate a transaction to obtain a use license 36 for a particular edition of such application 32. In addition, even after the user obtains the use license 36, such referral information may be employed should the user desire to go back to the retailer 52 to return such use license 36 or to obtain a different use license 36 for another edition of such application 32.

[0071] As was set forth above, a user in possession of the single base copy of the application 32 requires a use license 36 of some sort to employ a particular corresponding edition of the application 32, unless of course the user employs the aforementioned initial license 36 or non-network license 36. However, and as should be appreciated, such a use license 36 contains the decryption key (KD) for accessing the encrypted portion of the application 32 and is tied to the user or the computing device 34 thereof and thus does not normally travel with the application 32.

[0072] In one embodiment of the present invention, then, and remembering that the application 32 includes the definition license 36 as was set forth above, the user in the course of obtaining such a use license 36 first obtains from the retailer 52 or the like a product license 36 that specifies at least some of the features as set forth in the definition license 36. In such embodiment, the product license 36 is not itself a use license 36 that can be used to employ the application 32. Instead, the product license 36 as provided by the retailer 52 or the like defines which edition of the application 32 that the user has obtained, or else the features as set forth in the definition license 36 that the user has requested, and thus is a token or authorization that the user presents to the licensor 46 during the course of a use license request transaction to signify to such licensor 46 that such user is entitled to a corresponding use license 36 for a particular edition of the application 32.

[0073] Put more simply, the user interacts with the retailer 52 to obtain the right to a use license 36 but does not in fact receive the use license 36 from such retailer 52. Instead, the user receives the product license 36 as a token that is presented to the licensor 46, and the licensor 46 in response in fact issues

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a corresponding use license 36 to the user that the user may in fact use to employ a corresponding edition of the application 32. The use license 36 as issued corresponds to the product license 36 in that the rights conferred in the use license 36 correspond to the edition or features set forth in the product license 36.

[0074] As may be appreciated, while the product license 36 could be dispensed with by having the user obtain the use license 36 in the course of a direct transaction with the licensor 46, the licensor 46 may prefer not to handle the retail aspects of such a direct transaction. Moreover, by employing the product license 36 in the manner set forth herein, multiple retailers 52 may be employed to effectuate retail transactions with users while still only having one or a few licensors 46, each licensor 46 being able to issue a use license 36 in connection with a transaction with any retailer 52. Finally, by separating the issuance of the use license 36 by the licensor 46 from the retail transaction with the retailer 52, the publisher 44 may exert greater control over such issuance, and also may achieve greater security.

[0075] Presumably, the product license 36 as provided by the retailer 52 to the user includes appropriate information regarding where the user may find the licensor 46 to issue the use license 36 corresponding to such product license 36. In addition, and in one embodiment of the present invention, the product license 36 as provided by the retailer 52 to the user may be packaged with referral information including an identification of the distributor 54 from which the application 32 may be obtained. Thus, in the situation where the user obtains the product license 36 prior to the application 32, such referral information refers such user to such distributor 54 to obtain the base copy of such application 32. In addition, even after the user obtains the application 32, such referral information may be employed should the user desire to go back to the distributor 54 for another copy of such base copy of such application 32, or even for a new or updated version of such base copy of such application 32.

[0076] To summarize, then, a user may obtain the application 32 before or after a product license 36 therefor. If before, the referral information packaged with the application 32 is employed to locate a particular retailer 52 from which the user can obtain the use license 36. If after, the referral information

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packaged with the product license 36 is employed to locate a particular distributor 54 from which the user can obtain the base copy of the application 32.

[0077] In one typical scenario, and turning now to Fig. 5, a user purchasing or otherwise obtaining the application 32 and a corresponding use license 36 would visit a retailer 52 therefor and engage therewith in a transaction by which the user would select particular features desired in the application 32 or a particular edition of the application 32 (step 501). As part of such transaction, the user may provide a fee to the retailer 52. Typically, although not necessarily, the retailer 52 controls the transaction and determines the presentation of information and options relating to the application 32 and acceptable forms of payment, and upon approval from the user executes the transaction.

[0078] Also as part of the transaction, the retailer 52 collects information from the user necessary to construct or obtain an appropriate product license 36 corresponding to the user selection and in fact constructs or obtains such product license 36 (step 503). As noted above, such product license 36 may be packaged with referral information including a particular distributor 54 from which the base copy of the application 32 may be obtained. At any rate, such product license 36 is conveyed from the retailer 52 to the user (step 505). In addition, the retailer 52 may send a transaction confirmation message to the user confirming the transaction. If so, the message may include a location at which the product license 36 may be obtained if such product license 36 is not automatically sent to the user.

[0079] Upon receiving the product license 36 from the retailer 52, the user may install same (step 507) or may save the product license 36 for later retrieval and installation. Generally, and as will be set forth below in more detail, installation includes validating the publishing license 36 including a signature thereof and storing same on the computing device 34 of the user. Although a use license 36 corresponding to the product license 36 may be obtained at this point, it may instead be advisable to first ensure that the corresponding application 32 has been installed. Note that if the product license 36 is saved for later retrieval, such product license 36 should be saved in an encrypted form, especially if the product license 36 can be taken by another user and employed thereby.

[0080] Once the product license 36 has been received, the user's computing device 34 determines whether the corresponding application 32 has been installed (step 509). Such check may for example be achieved by checking a registry on the computing device 34 for an appropriate value. If already installed, the application 32 may then be actuated to complete the process of acquiring the use license 36 (step 511). If not installed, the application 32 is acquired from the distributor 54 set forth in the referral information included with the product license 36 or is obtained from a storage medium available to the computing device 34 and the acquired application 32 is installed on such computing device 34 (step 513), and the installed application 32 is then actuated as at step 511.

[0081] Note that at this point there may already be another obtained use license 36 on the computing device 34, in which case the use license 36 to be obtained is an additional use license 34. At any rate, upon the installed application 32 being actuated and based on the presence of the product license 36, the computing device 34 acquires a use license 36 corresponding thereto (step 515). In particular, the product license 36 and perhaps the definition license 36 from the application 32 are sent to the licensor 46 as identified within the product license 36, along with an identification of the user and/or the computing device 34 thereof and/or the trusted component 38 thereof or the like (step 517).

[0082] The licensor 46 validates all licenses 36 and identifications, and assuming such validations succeed the licensor 46 constructs an appropriate use license 36 based thereon (step 519) and returns same to the requesting user (step 521). Notably, in constructing the use license 36, the licensor 46 obtains a cryptographic key from at least one of the identifications such as a public key (PU) of the user, encrypts the aforementioned decryption key (KD) for the application 32 with such (PU) to result in (PU(KD)), and includes such (PU(KD)) in the constructed and returned use license 36. Also notably, the identifications may include a hardware ID (HWID) corresponding to the user's computing device 34 and such HWID may also be included in the constructed and returned use license 36. Further notably, the licensor 46 may note in an appropriate database that the

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product license 36 has been submitted and that a corresponding use license 36 has been issued, and also may notify the retailer regarding same.

[0083] The user's computing device 34 may store the returned use license 36 in an appropriate location such as a license store, and such stored use license 36 may then be employed to use certain features of the application. In particular, and turning now to Fig. 6, upon a request to use a particular feature of the application 32 (step 601), such feature of the application 32 may in effect request that the trusted component 38 determine whether a use license 36 on the computing device 34 permits such use of such feature (step 603). In response, the trusted component 38 may locate an obtained use license 36 in a license store (step 605), validate same (step 607), and determine whether such validated use license 36 permits the use of the feature (step 609).

[0084] Presuming that the validated use license 36 does in fact permit the use of the feature, such trusted component 38 then retrieves (PU(KD)) from such use license 36 and applies a corresponding private key (PR) to same to reveal the decryption key (KD) (step 611), and such decryption key (KD) may then be applied in an appropriate manner to decrypt an appropriate portion of the application 32 (step 613). Thereafter, the requested feature may be used (step 615).

[0085] As may be appreciated, at some point the user after having obtained the use license 36 may decide to return same, for any of a variety of reasons. Critically, if the user is allowed to return such use license 36, such user should not be allow to retain a copy of such use license 36. Accordingly, in one embodiment of the present invention, and turning now to Fig. 7, such return is effectuated by way of a request to the retailer 52 that includes the corresponding product license 36 as provided thereby (step 701). In response, the retailer 52 returns an executable or command to the user's computing device 34 (step 703), where the executable / command in effect deletes the use license 36 from the user's computing device in a trusted manner. In particular, the trusted component 38 on such computing device 34 executes the executable / command to delete the use license 36 at issue (step 705), and then sends a message to the retailer 52 that the deletion was successful (step 707). Thereafter, the retailer 52 informs the

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licensor 46 that the corresponding product license 36 is invalid (step 709), and the licensor 46 notes same in a database thereof such that any future request for a use license 36 based on such product license 36 is not honored.

[0086] As may also be appreciated, and remembering that the use license 36 is tied to a particular computing device 34 by way of including a HWID of such computing device 34 in such use license 36, it is to be recognized that the user may wish to transfer the use license 36 to another computing device 34 thereof with a different HWID, again for any of a variety of reasons. Similar to before, if the user is allowed to transfer such use license 36 from a first device 34 to a second device 34, such user should not be allow to retain a copy of such use license 36 as tied to the first device 34. Accordingly, in one embodiment of the present invention, and turning again to Fig. 7, such transfer is effectuate in a manner similar to a return. In particular, such transfer is effectuated by way of a request to the licensor 46 that includes the corresponding product license 36 as provided by the retailer 52 (step 701). In response, the licensor 46 returns an executable or command to the user's computing device 34 (step 703), where the executable / command in effect deletes the use license 36 from the user's computing device in a trusted manner. Again, the trusted component 38 on such computing device 34 executes the executable / command to delete the use license 36 at issue (step 705), and then sends a message to the licensor 46 that the deletion was successful (step 707).

[0087] Significantly, in the context of a transfer, the licensor 46 should be able to issue another use license 36 corresponding to the product license 36, in this case to a different computing device 34 of the user. Accordingly, in the context of a transfer, the licensor 46 notes that the corresponding product license 36 can again be employed (step 709), and any future request for a use license 36 based on such product license 36 is in fact honored.

[0088] In one embodiment of the present invention, a publisher 44 may define a license 36 by way of a license file or the like and then may give the license file to a retailer 52 for sale. In addition, the publisher 44 may creates the base copy of the application 32 and provide same to the distributor 54. The

retailer 52 may then sell the license 36 to a user and deliver same by way of a licensor 46 operating a web page or the like. The license 36 may be packaged with information that points the user to the distributor 54 if the user needs to obtain the application 32 therefrom. The application 32 may be packaged with information that points the user to the licensor 46 if the user needs to obtain the license 36 therefrom. Thus, a user in possession of the application 32 can find the licensor 46 to obtain a license 36, and a user in possession of the license 36 can find the distributor 54 to obtain the application 32.

Conclusion

[0089] The programming necessary to effectuate the processes performed in connection with the present invention is relatively straight-forward and should be apparent to the relevant programming public. Accordingly, such programming is not attached hereto. Any particular programming, then, may be employed to effectuate the present invention without departing from the spirit and scope thereof.

[0090] In the present invention, an RM architecture 30 is employed to effectuate a licensing architecture 50 where only one copy of a digital application 32 need be released with multiple available features or editions such that a particular use license 36 issued to a particular user specifies which available features / edition may be employed by the user. Thus a publisher 44 of the application 32 need not release multiple editions of the same application 32, and a user in obtaining a use license 36 can select which of the multiple available features / editions are to be licensed.

[0091] It should be appreciated that changes could be made to the embodiments described above without departing from the inventive concepts thereof. It should be understood, therefore, that this invention is not limited to the particular embodiments disclosed, but it is intended to cover modifications within the spirit and scope of the present invention as defined by the appended claims.

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CLAIMS

1. A method of obtaining a use license for using an application on a computing device, the application including a plurality of features, the method comprising:

engaging in a transaction with a retailer to obtain a product license corresponding to the application from such retailer, the product license defining at least one feature of the application that may be employed based on such product license;

obtaining a base copy of the application from a distributor and actuating such application; and

acquiring a use license corresponding to the product license from a licensor by way of the actuated application sending the product license to the licensor along with an identification of at least one of a user, the computing device, and a trusted component operating on the computing device, the use license including feature policy granting rights to employ each feature defined in the product license.

2. The method of claim 1 comprising engaging in a transaction with a retailer to obtain a product license defining at least one feature of the application as offered by the retailer and representing an available edition of the application.

3. The method of claim 1 comprising engaging in a transaction with a retailer to obtain a product license defining at least one feature of the application as selected by an obtainer of such product license.

4. The method of claim 1 comprising engaging in a transaction with a retailer to obtain a product license packaged with referral information

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including a particular distributor from which the base copy of the application is obtained.

5. The method of claim 1 wherein at least a portion of the application is encrypted and decryptable according to a key (KD), the method comprising acquiring a use license including a cryptographic key from the identification encrypting the key (KD), whereby the trusted component may retrieve such key (KD) and employ same to decrypt the at least a portion of the application.

6. The method of claim 1 wherein the computing device includes a hardware ID (HWID) corresponding to the computing device 34, the method comprising acquiring a use license including the HWID, whereby the trusted component may retrieve such HWID and employ same to determine that the license is intended to be employed on the computing device having such HWID.

7. The method of claim 1 wherein at least a portion of each feature of the application is encrypted and decryptable according to a key (KD), the method comprising acquiring a use license including a cryptographic key from the identification encrypting the key (KD), the method further comprising:

- receiving a request to use a particular feature of the application;
- locating the acquired use license;
- determining that the feature policy in the located use license permits the requested use of the particular feature;
- retrieving the encrypted key (KD) from the located use license;
- decrypting the encrypted key (KD) and employing same to decrypt the at least a portion of the particular feature of the application; and
- using the particular feature of the application.

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8. The method of claim 7 further comprising validating the located use license.

9. The method of claim 1 further comprising after having acquired the use license returning same to reverse the transaction by which the product license was obtained, returning such use license including:

 sending a return request to the retailer including the corresponding product license as provided thereby;

 receiving from the retailer one of an executable and a command which deletes the use license from the computing device in a trusted manner;

 executing the executable / command to delete the use license and send a message to the retailer that the deletion of the use license was successful; whereby the retailer informs the licensor that the product license is invalid and the licensor notes same in a database thereof such that any future request for a use license based on the product license is not honored.

10. The method of claim 1 wherein the acquired use license is tied to the computing device, the method further comprising after having acquired the use license returning same to acquire another use license tied to another computing device, returning such use license including:

 sending a transfer request to the licensor including the corresponding product license as provided by the retailer;

 receiving from the licensor one of an executable and a command which deletes the use license from the computing device in a trusted manner;

 executing the executable / command to delete the use license and send a message to the licensor that the deletion of the use license was successful; whereby the product license remains valid and the licensor notes that the product license can again be employed to obtain the another use license tied to the another computing device.

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11. An application for being used on a computing device and a use license for using the application, the application having a plurality of features and comprising:

an instantiation portion for instantiating such application on the computing device, the instantiation portion being encrypted and decryptable according to a key (KD); and

a plurality of feature portions, each feature portion corresponding to a feature,

the use license comprising:

instantiation policy for determining whether the instantiation portion may be employed to instantiate the application;

feature policy for determining whether each feature of the application may be employed; and

the key (KD) encrypted and decryptable according to a key available to a trusted component of the computing device,

whereby the trusted component retrieves such key (KD) from the use license if the instantiation policy of the use license determines that the instantiation portion may in fact be employed to instantiate the application and employs the retrieved (KD) to decrypt the instantiation portion, the decrypted instantiation portion being employed to instantiate the application, and

whereby each feature portion requires as a condition precedent to the use thereof that the trusted component determine that the feature policy of the use license allows such use of such feature portion.

12. The application and use license of claim 11 wherein the computing device includes a hardware ID (HWID) corresponding to the computing device 34 and the use license includes the HWID, whereby the trusted component may retrieve such HWID and employ same to determine that the license is intended to be employed on the computing device having such HWID.

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ABSTRACT OF THE DISCLOSURE

An application includes a plurality of features. A transaction is engaged with a retailer to obtain a product license corresponding to the application. The product license defines at least one feature of the application that may be employed. A base copy of the application is obtained from a distributor and is actuated. A use license corresponding to the product license is acquired from a licensor by way of the actuated application sending the product license to the licensor along with an identification of at least one of a user, the computing device, and a trusted component operating on the computing device, where the use license includes feature policy granting rights to employ each feature defined in the product license.

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Computing Environment 100

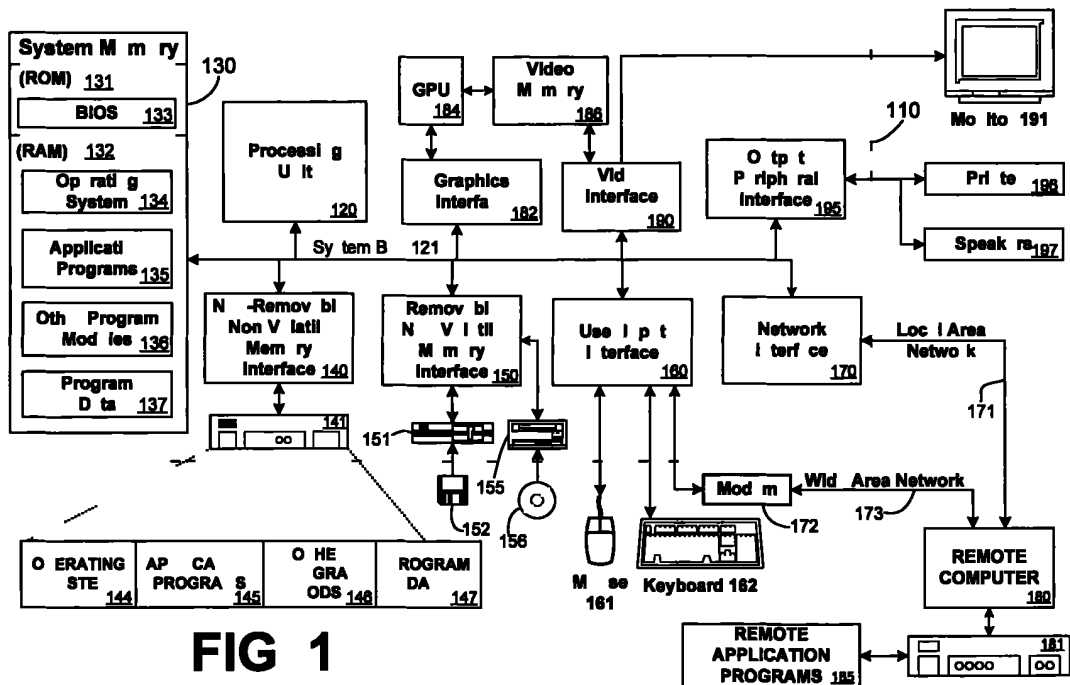


FIG 1

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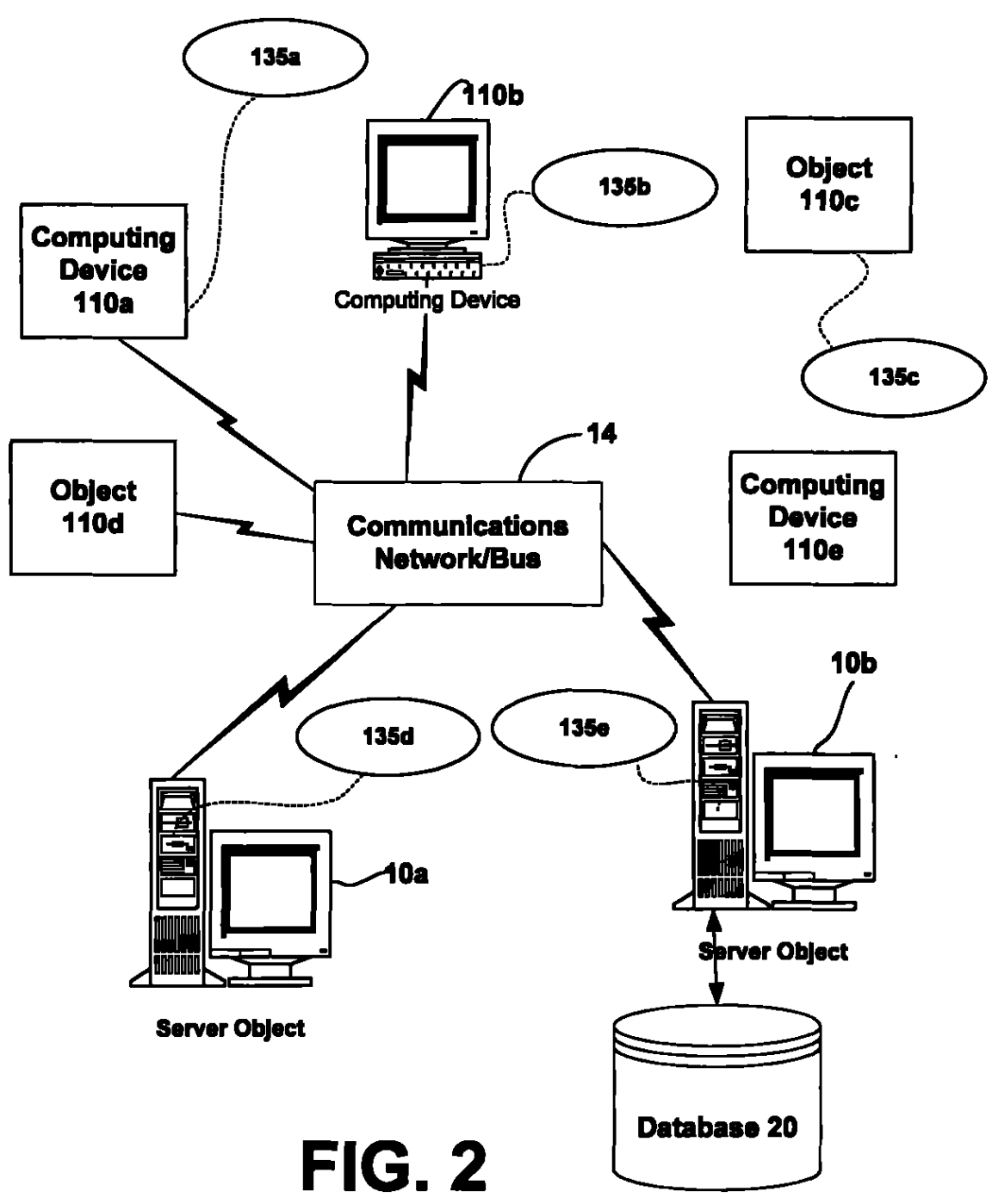


FIG. 2

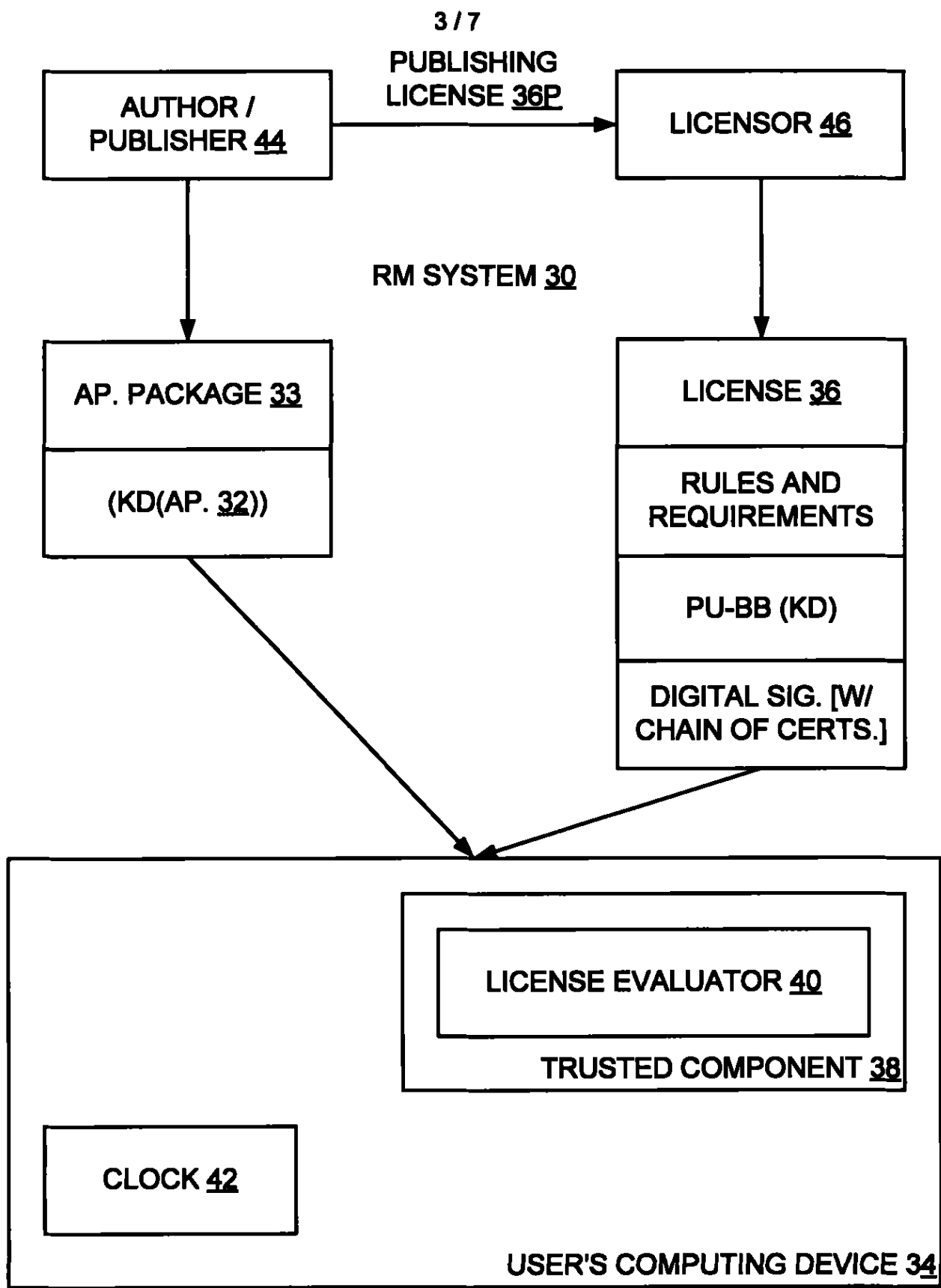


Fig. 3

LICENSING ARCH. 50

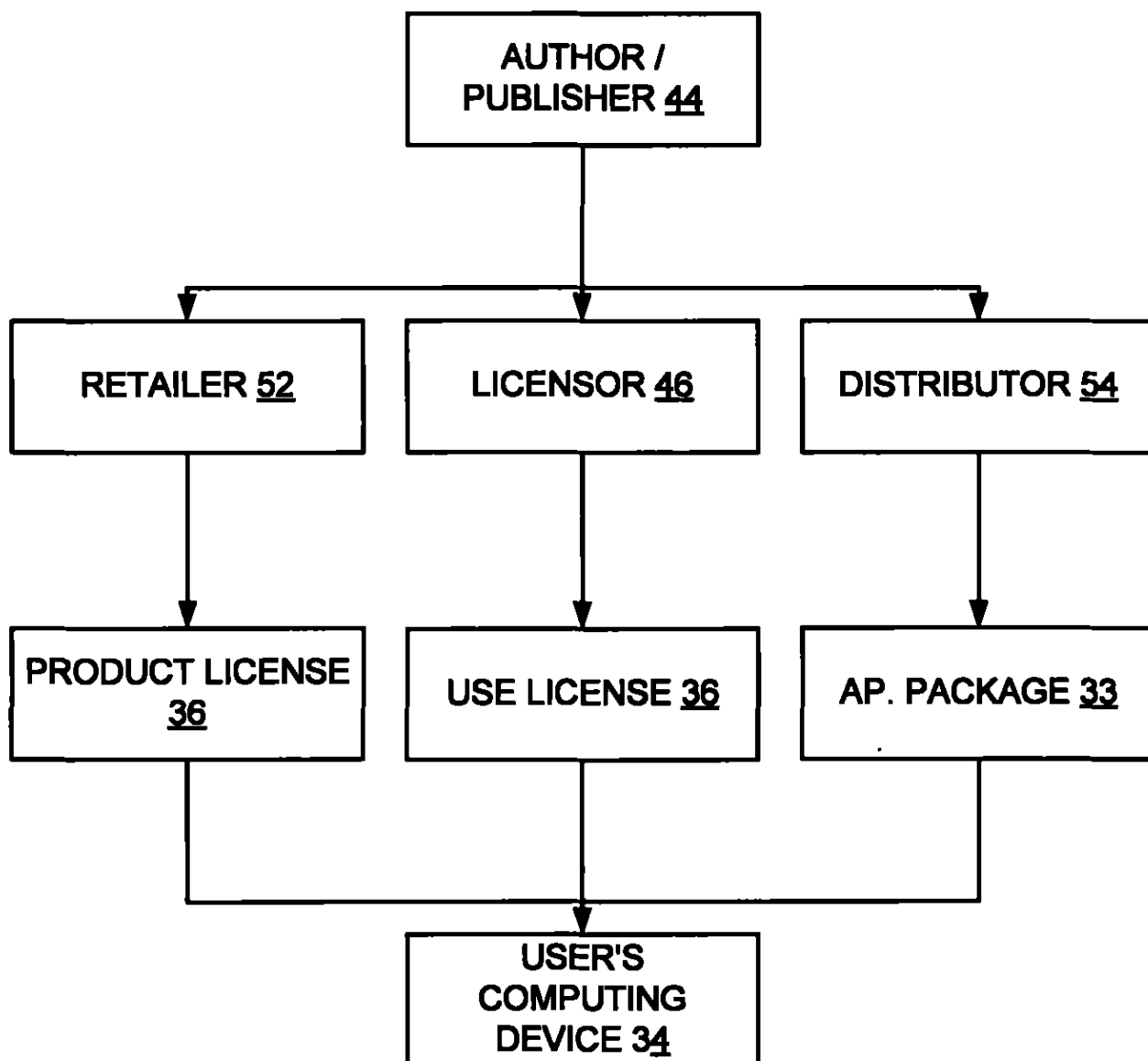
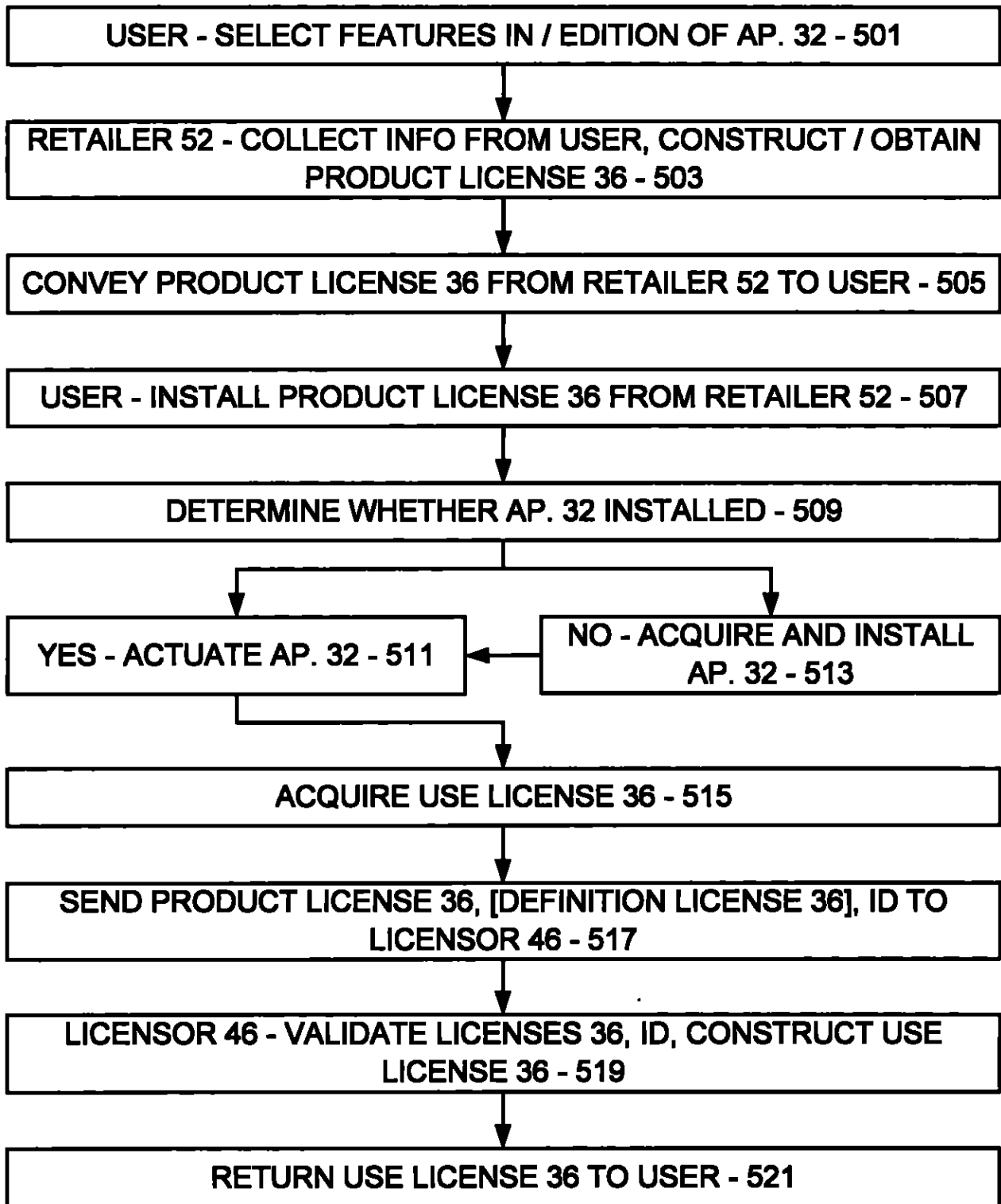
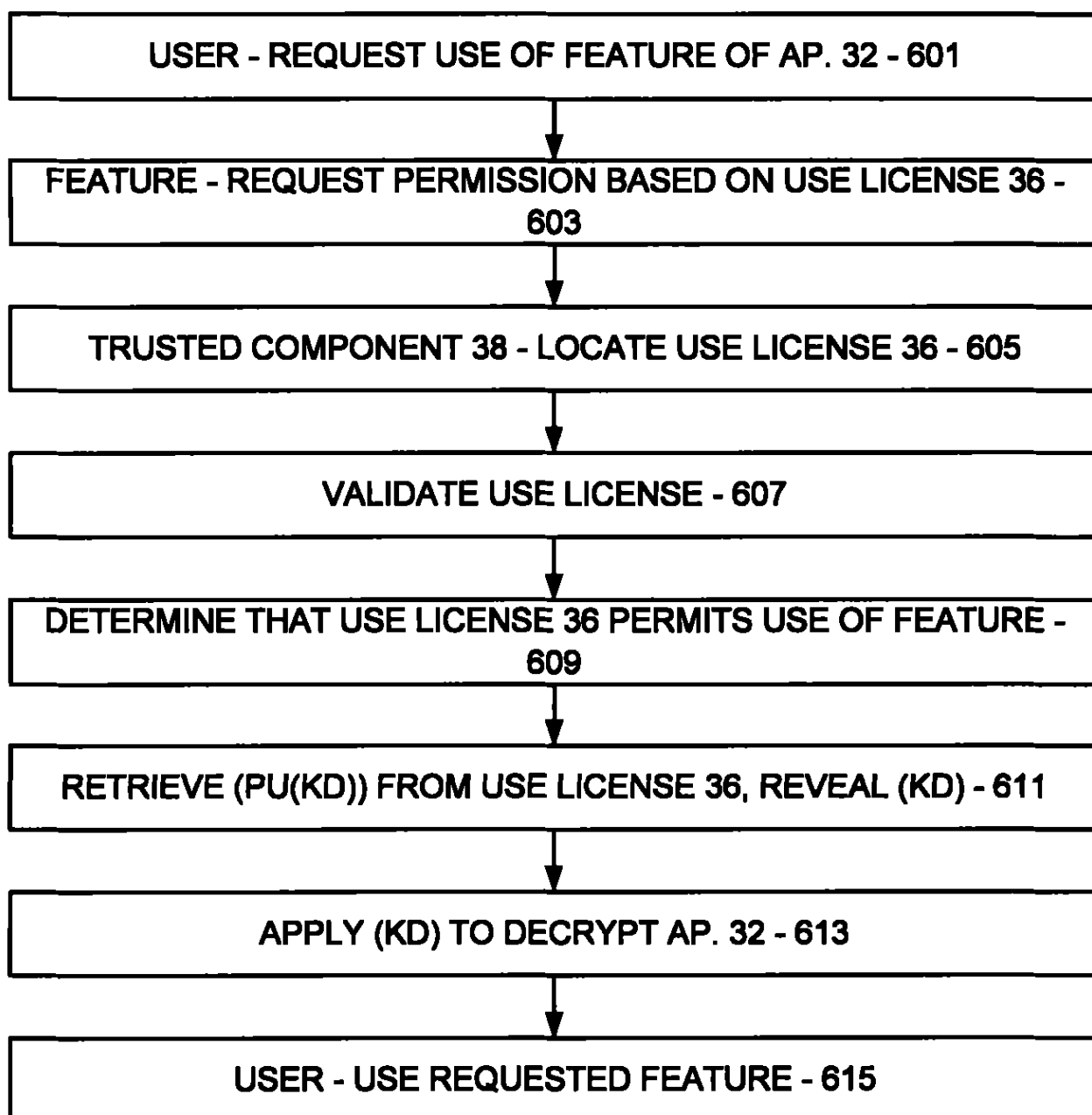


Fig. 4

**Fig. 5**

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**Fig. 6**

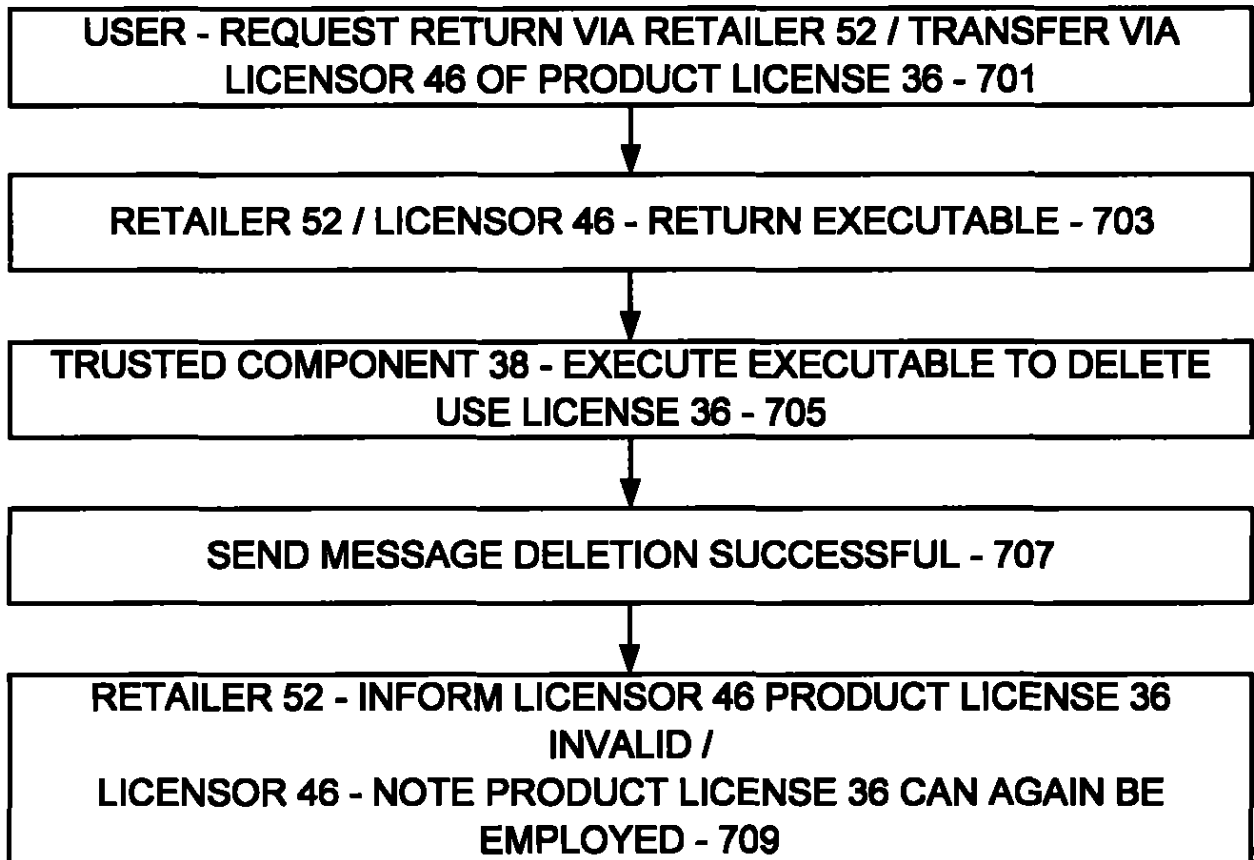


Fig. 7



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11/051,162	02/04/2005	3621	1000	MSPT-4560	7	12	2

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Fecha de Envío: 03/11/2005

Certificación de recibo de esta aplicación de Patente normal. Esta será considerada en esta orden y usted será notificado de los resultados del examen. Asegúrese de proporcionar el NUMERO DE SOLICITUD DE U.S., LA FECHA DE TRÁMITE, NOMBRE DEL SOLICITANTE, y TÍTULO DE LA INVENCION cuando pregunte acerca de esta aplicación. Los costos enviados por cheque o giro están sujetos a recolección. Por favor verifique la exactitud de los datos presentados en este recibo. Si algún error es notado en este recibo de trámite, por favor escriba a la Oficina de Patente Inicial de Recibo de Correcciones de Trámite de Revisión, fax número 703-746-9195. Por favor proporcione una copia de este recibo de trámite con los cambios allí anotados. Si usted recibió una "Nota de Partes de Archivo Extraviadas" para esta aplicación, por favor envíe las correcciones a esta solicitud de trámite con su respuesta a la nota. Cuando el USPTO procese la respuesta a la nota, el USPTO generará otro recibo de trámite incorporando las correcciones requeridas (si aplica).

Solicitante (s)

Cecil Ray Brooks, Mill Creek, WA;
Jay Robert Giroto, Kirkland, WA;
Caglar Gunyakti, Sammamish, WA;
Todd Haugen, Clyde Hill, WA;

Examen Para Solicitud de Patente Publicada

Microsoft Corporation, Redmond, WA

Poder de Apoderado: Los practicantes de patente asociados con el Número de Cliente 41505

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Datos de Prioridad Local demandados por el solicitante**Solicitudes Foráneas****Si es requerido, Licencia Garantizada de Trámite Foráneo: 03/10/2005****El código de país y número de su prioridad de aplicación, a ser usado para diligencia foránea bajo el convenio de París, es US11/051,162****Fecha Proyectada de Publicación: 08/10/2006****Requisito de NO Publicación: NO****Título****Arquitectura de Licenciamiento Flexible para La Aplicación Digital de Licenciamiento****Clase Preliminar****705**

**LICENCIA PARA TRAMITE FORANEO BAJO
Título 35, Código de Estados Unidos, Sección 184
Título 37, Código de Regulaciones Federales, 5.11 & 5.15**

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NO OTORGADA

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nd



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FECHA DE GRABACION: 08/13/2003

CARRETE / MARCO: 015854/0718
NUMERO DE PAGINAS 2

RESUMEN: EXAMEN DE INTERES DEL EXAMINADOR (VEA EL DOCUMENTO PARA LOS DETALLES)

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BROOKS, CECIL RAY

DOC DATE: 02/02/2005

CEDENTE:
GIROTTI, JAY ROBERT

DOC DATE: 02/02/2005

94

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CEDENTE:
GUNYAKTI, CAGLAR

DOC DATE: 02/02/2005

CEDENTE:
HAUGEN, TODD

DOC DATE: 02/02/2005

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ONE MICROSOFT WAY
REDMOND, WASHINGTON 98052

NUMERO SERIAL NUMBER: 11051162
NUMERO DE PATENTE:

FECHA DILIGENCIA: 02/04/2005
ISSUE DATE:

TITULO: ARQUITECTURA DE LICENCIAMIENTO FLEXIBLE PARA LA APLICACIÓN DIGITAL DE
LICENCIAMIENTO

LAZENA MARTIN, EXAMINADOR
DIVISION DE EXAMINACION
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REVISION DE PATENTE	
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NATURALEZA DE ACUERDO:	CESION
DATOS DE PARTES CONTRATANTES	
NOMBRE	Fecha de Ejecucion
Cecill Ray Brooks	02/02/2005
Jay Robert Giroto	02/02/2005
Caglar Gunyakti	02/02/2005
Todd Haugen	02/02/2005
DATOS DE LA PARTE RECEPTORA	
Nombre:	Microsoft Corporation
Dirección:	One Microsoft Way
Ciudad:	Redmond
Estado/Pais:	WASHINGTON
Codigo Postal:	98052
NUMEROS DE PROPIEDAD	Total: 1
Tipo de Propiedad	Numero
Solicitud Numero	11051162
DATOS DE CORRESPONDENCIA	

97

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NOMBRE DE QUIEN ENVIA:	Joanne Gallagher
 Total Adjuntos: 1 Fuente = 310550.01#page1.tif	

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Nosotros, Cecil Ray Brooks, Jay Robert Girotto, Caglar Gunyakti, and Todd Haugen("CESIONARIOS"), residentes en 1 621 9 24th Drive SE, Mill Creek, Washington 9801 2, 11108 NE 65th Street, Kirkland, Washington 98033-711 6, 440 226th Lane NE, Sammamish, Washington 98074 and 2611 93rd Place NE, Clyde Hill, Washington 98004 hemos inventado la materia objeto ("INVENCION") descrita y/o reivindicada en la patente de aplicación titulada "ARQUITECTURA DE LICENCIAMIENTO FLEXIBLE PARA LA SOLICITUD DIGITAL DE LICENCIAMIENTO" ("SOLICITUD"), la cual:

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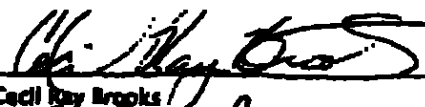
Para bien y consideración de valor, el recibo del cual es aquí reconocido por el CEDENTE, el CEDENTE aquí vende, asigna y transfiere al CESIONARIO, los derechos completos y exclusivos, el título y el enteres en la INVENCION y la SOLICITUD (y SOLICITUDES DERIVADAS);

LOS CEDENTES están de acuerdo para ejecutar todos los instrumentos y documentos requeridos para realizar y proseguir la SOLICITUD (y LAS SOLICITUDES DERIVADAS), para la litigación con

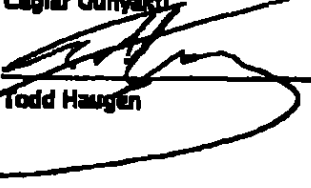
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respecto a las cartas de patente derivadas en adelante, y para el propósito de proteger y perfeccionar el título para la SOLICITUD (y LAS SOLICITUDES DERIVADAS).

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TÍTULO DE LA INVENCION

Arquitectura de Licenciamiento Flexible para La Aplicación Digital de Licenciamiento

CAMPO TÉCNICO

[0001] La invención presente relaciona a una arquitectura de la autorización por proporcionar una licencia para operar una aplicación digital en un dispositivo de cómputo o similar. Más particularmente, la invención relaciona a tal arquitectura de licenciamiento dónde sólo una versión de la necesidad de la aplicación digital se libera con características disponibles múltiples, y donde una licencia particular emitida a un usuario particular especifica qué características disponibles pueden ser empleadas por el usuario. Así, el publicador de la necesidad de la aplicación no necesita liberar versiones múltiples de la misma aplicación, y el usuario que obtiene la licencia puede seleccionar qué características disponibles múltiples serán autorizadas.

FONDO DE LA INVENCION

[0002] Los derechos de administración y de obligación muy deseables en relación con el contenido digital tal como una aplicación digital o similar, dónde tal aplicación digital será distribuida a uno o más usuarios. Modos típicos de distribución incluyen dispositivos tangibles como una unidad de disco

magnético (blando), una cinta magnetofónica, un CD óptico compacto (CD), etc. y medios de comunicación intangibles tal como un tablero de anuncios electrónico, una red eléctrica, Internet, etc. Al ser recibida por el usuario en un dispositivo de cómputo, tal usuario puede activar la aplicación con la ayuda de un sistema operativo apropiado en el dispositivo de cómputo.

[0003] Típicamente, un autor y/o publicador de la aplicación desea distribuir tal aplicación a cada uno de muchos usuarios o destinatarios a cambio de una cuota de la licencia u otra consideración. En tal escenario, luego, la aplicación puede ser una aplicación de procesador de palabras, una aplicación de hoja de cálculo, una aplicación del navegador, una aplicación de juego por dinero, una aplicación de jugador, una combinación de ello, y similares. Tal autor / publicador u otra entidad similar (aquí después, "publicador"), dada la opción, desearía restringir lo que cada usuario puede hacer con tal aplicación publicada. Por ejemplo, el publicador le gustaría, restringir al usuario de copiar y re-distribuir tal aplicación a un segundo usuario, por lo menos de una manera que niega al publicador una cuota de la licencia del segundo usuario.

[0004] Sin embargo, después de que la publicación ha ocurrido, tal publicador tiene muy pequeño si alguno control real sobre la aplicación. Esto es especialmente problemático en vista del hecho de que prácticamente cada computadora personal incluye el software y hardware necesarios hacer una copia digital exacta de tal aplicación, y para transmitir tal copia digital exacta a un disco magnético u óptico capaz –de-escribir, o para enviar tal copia digital exacta sobre una red como Internet a cualquier destino.

[0005] Claro, como parte de una transacción en donde la aplicación es distribuida, el publicador puede requerir al usuario / el destinatario de la aplicación para prometer no re-distribuir tal aplicación de una manera mal recibida. Sin embargo, tal promesa es fácilmente hecha y fácilmente rota. Un

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publicador puede intentar prevenir tal re-distribución a través de cualquiera de varios dispositivos de seguridad conocidos, involucrando normalmente encriptación y descifrado. Sin embargo hay probablemente, muy pocos que previenen a un usuario ligeramente determinado de descifrar una aplicación encriptada, ahorrando tal aplicación en una forma no-encriptada, y luego re-distribuir la misma.

[0006] Además, el publicador puede desear proporcionar la flexibilidad al usuario para comprar tipos diferentes o ediciones de la aplicación. Por ejemplo, el publicador puede desear proporcionar una edición completa-destacada a un precio más alto y una edición rudimentaria a un más bajo precio. Igualmente, el publicador puede desear ofrecer una edición comercial y una edición de la casa, una edición del estudiante y una edición del maestro, o similar. Note, sin embargo, que en el arte anterior, cada edición de la aplicación requeriría que el publicador distribuya un conjunto separado de código operativo. Así, y como debe apreciarse, ofrecer ediciones múltiples de la misma aplicación requiere que un publicador mantenga, empaque, y venda cada edición separadamente, con gasto considerable. Es más, cada edición probablemente es soportada separadamente, actualizada separadamente, y corregida separadamente, con más aun gasto considerable. También, cuando se encuentran errores o baches en la aplicación, tal edición probablemente debe revisarse y corregirse separadamente, si de hecho el error existe en todas estas ediciones, una vez más con gasto considerable.

[0007] Para proporcionarle la flexibilidad al usuario para comprar ediciones diferentes de una aplicación, un publicador puede ofrecer tipos diferentes de licencias de uso a cuotas de licencia diferentes, mientras al mismo sostiene al usuario por las condiciones del tipo de licencia de hecho comprada. Por ejemplo, y en el caso dónde la aplicación incluye características disponibles múltiples, el publicador puede desear ofrecer menús del usuario de tales

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características disponibles / ediciones a ser licenciadas, o incluso le permite a un usuario seleccionar particularidades de las características disponibles a ser autorizados. Así, el usuario comprando tal licencia podría emplear las características disponibles de la aplicación que se habilitan por la licencia, y se restringirla de emplear las características disponibles de la aplicación que no se habilita por la licencia. Probablemente, las cuotas para las licencias variarían basado en las características disponibles habilitados para ello.

[0008] Significativamente, por oferta de tipos múltiples de licencias para la aplicación por oferta de licencias personalizadas para la aplicación, el publicador puede evitar tener que distribuir ediciones distintas múltiples de la aplicación, cada uno se acomoda a un conjunto particular de características disponibles. En cambio, la necesidad del publicador sólo distribuye una sola copia base de la aplicación con las características de todo disponible, y luego proporciona una licencia que habilita sólo un cierto subconjunto de tales características disponibles. Como puede apreciarse, si la sola copia baja de la aplicación es distribuida en una forma tal que la aplicación es inoperable sin una licencia válida, tal aplicación puede distribuirse y redistribuirse libremente, todavía sólo puede operarse por un usuario si tal usuario obtiene una licencia del publicador o un agente.

[0009] Los derechos de Administración (RM – Rights Management) y las arquitecturas de ejecución y los métodos se han proporcionado previamente para permitir la operación controlada de formas arbitrarias de aplicaciones digitales dónde el tal mando es flexible y definible por el publicador de tal aplicación. Típicamente, una licencia digital se proporciona para operar la aplicación dónde la aplicación no puede actuar de una manera significativa sin tal licencia. Por ejemplo, puede ser el caso que por lo menos una parte de la aplicación se encripta y la licencia incluye una clave de descifrado para descifrar tal parte cifrada. Además, puede ser el caso de que la licencia se

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ata a un usuario o un dispositivo de cómputo, y tal dispositivo de cómputo incluye una característica de seguridad que asegura que se cumplen las condiciones de la licencia.

[0010] Sin embargo, no se han empleado tales arquitecturas de RM hasta aquí para realizar una arquitectura de licenciamiento donde sólo una copia de una aplicación digital necesita ser liberada con características disponibles múltiples o ediciones tales que una licencia particular emitida a un usuario particular especifica cuales características disponibles / edición puede ser empleada por el usuario. En concordancia, una necesidad existe para tal arquitectura de licencia, en donde un publicador de una necesidad de aplicación no libera ediciones múltiples de la misma aplicación, y un usuario obteniendo una licencia puede seleccionar qué de las características disponibles múltiples / ediciones serán licenciadas.

RESUMEN DE LA INVENCION

[0011] las necesidades mencionadas están por lo menos en parte satisfechas por la invención presente en que un método es proporcionado para obtener una licencia de uso para usar una aplicación en un dispositivo de cómputo donde la aplicación incluye una pluralidad de características. En el método una transacción está comprometida con un minorista para obtener una licencia de producto que corresponde a la aplicación de tal minorista donde la licencia del producto por lo menos define una característica de la aplicación que puede emplearse basado en tal licencia del producto. Además, una copia base de la aplicación se obtiene de un distribuidor y es actuada. La licencia de uso corresponde a la licencia del producto y es adquirida de un licenciador por vía de la aplicación actuada que envía la licencia del producto al licenciador junto con una identificación de por lo menos una de un usuario, el dispositivo de cómputo, y un componente confiado de operación sobre el dispositivo de cómputo donde el

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uso de la licencia incluye la característica de la política garantizando los derechos para emplear cada característica definida en la licencia del producto.

DESCRIPCIÓN BREVE DE LOS DIBUJOS

[0012] El resumen anterior, así como la siguiente descripción detallada de las personalizaciones de la invención presente, se entenderán bien cuando se lean junto con los dibujos adjuntos. Con el propósito de ilustrar la invención, allí se muestra en las personalizaciones los dibujos que se prefieren presentemente. Como debe entenderse, sin embargo, la invención no se limita a los arreglos precisos ni a las utilizaciones mostradas. En los dibujos:

[0013] La fig. 1 es un diagrama de bloque que representa un ambiente de cómputo no-limitado ejemplar en que la invención presente puede llevarse a cabo;

[0014] La fig. 2 es un diagrama de bloque que representa un ambiente de red ejemplar que tiene una variedad de dispositivos de cómputo en que la invención presente puede llevarse a cabo;

[0015] La fig. 3 es un diagrama de bloque que muestra una arquitectura de ejecución de un ejemplo de un sistema basado en la confianza, incluso una licencia digital de acuerdo con una personalización de la invención presente,;

[0016] La fig. 4 es un diagrama de bloque que muestra una arquitectura de licenciamiento para emitir una licencia de uso para emplear una edición de la aplicación de la Fig. 3 de acuerdo con una personalización de la invención presente;

[0017] La fig. 5 es un diagrama de flujo que muestra los pasos importantes realizados durante la obtención de la licencia del uso de las figs. 3 y 4 de acuerdo con una personalización de la invención presente;

[0018] La fig. 6 es un diagrama de flujo que muestra los pasos importantes realizados al obtener la licencia de uso de las figs. 3 y 4 para usar la aplicación de la Fig. 3 de acuerdo con una personalización de la invención presente; y

[0019] La fig. 7 es un diagrama de flujo que muestra los pasos importantes realizados cuando se retorna o transfiere la licencia de uso de las figs. 3 y 4 de acuerdo con una personalización de la invención presente.

DESCRIPCIÓN DETALLADA DE LA INVENCION

AMBIENTE DE CÓMPUTO

[0020] La fig. 1 y la discusión siguiente intentan proporcionar una descripción general breve de un ambiente de cómputo conveniente en que la invención puede implementarse. Debe entenderse, sin embargo, que se contemplan dispositivos de cómputo portátil, portátiles, y otros de todo tipo para el uso en relación con la invención presente. Mientras una computadora de propósito general se describe debajo, esto es solo un ejemplo, y la invención presente requiere a sólo un cliente delgado que tiene interoperabilidad e interacción de servidor de red. Así, la invención presente puede implementarse en un ambiente de servicios organizados conectados a una red de computadoras que implican recursos del cliente muy pequeños o mínimos, por ejemplo, un ambiente conectado a una red de computadoras en que el dispositivo del cliente sirve meramente como un navegador o interfaz de la Web.

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[0021] Aunque no requerido, la invención puede llevarse a cabo vía una interfaz de programa de aplicación (API), para el uso de un desarrollador, y/o incluido dentro del software navegador de la red que se describirá en el contexto general de instrucciones ejecutables por computadora, como los módulos de programa, ejecutándose por uno o más computadores, como estaciones cliente, servidores, u otros dispositivos. Generalmente, los módulos del programa incluyen rutinas, programas, objetos, componentes, estructuras de datos y similares que realizan tareas particulares o implementan tipos de datos abstractos particulares. Típicamente, la funcionalidad de los módulos de programa pueden combinarse o pueden distribuirse como es deseado en varias personalizaciones. Es más, estos experimentados en el arte apreciarán que la invención puede practicarse con otras configuraciones de sistema de computadora. Otros sistemas de cómputo bien conocidos, ambientes, y/o configuraciones que pueden ser convenientes para el uso con la invención incluyen, pero no se limitan a, las computadoras personales (PCs), máquinas de cajero automatizado, computadoras servidor, dispositivos portátiles o portátiles, sistemas multi-procesador, sistemas basados en microprocesador, la electrónica de consumo programable, la red de PCs, miniordenadores, sistemas informáticos grandes, y similares. La invención también puede practicarse en ambientes de cómputo distribuidos dónde las tareas son realizadas por dispositivos de proceso remoto que se unen a través de una red de comunicaciones u otro medio de transmisión de datos. En un ambiente de cómputo distribuido, pueden localizarse los módulos del programa en los medios de comunicación de almacenamiento de computadora locales y remotos incluso los dispositivos de almacenamiento de memoria.

[0022] La fig. 1 ilustra un ejemplo de un ambiente de un sistema de cómputo conveniente ambiente 100 en que la invención puede llevarse a cabo, aunque como hecho claro sobre el ambiente del sistema de cómputo 100 es sólo un ejemplo de un ambiente de cómputo conveniente y no se

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intenta sugerir cualquier limitación acerca del alcance del uso o funcionalidad de la invención. Ni no debería el ambiente de cómputo 100 interpretar como tener cualquier dependencia o requisito que relaciona a cualquiera o combinación de componentes ilustrados en el ambiente de cómputo ejemplar 100.

[0023] Con referencia a la Fig. 1, un sistema ejemplar para implementar la invención incluye un dispositivo de cómputo de propósito general en la forma de un computador 110. Los componentes de la computadora 110 pueden incluir, pero no se limitan a, una unidad de proceso 120, un sistema de memoria 130, y un sistema de bus 121 que se acopla a varios componentes del sistema incluso la memoria del sistema a la unidad de proceso 120. El sistema de bus 121 puede ser cualquiera de varios tipos de estructuras de bus, incluso un bus de memoria o controlador de memoria, un bus periférico, y un bus local que usan cualquiera de una variedad de arquitecturas de bus. Por vía de ejemplo, y sin limitación, tales arquitecturas incluyen el bus de la Industria de Arquitectura Normal (ISA), el bus de la Arquitectura de Micro Canal (MCA), el bus ISA Extendido (EISA), el bus de la Asociación de Normas de Electrónica Video (VESA) el bus local, y el Componente Periférico de Interconexión (PCI), también conocido como el bus del Entresuelo).

[0024] La computadora 110 incluye una variedad de medios leíbles por computadora. Los medios leíbles por computadora puede ser cualquier medio de comunicación disponible que puede accederse por una computadora 110 y puede ser incluido en ambos volátil y no volátil medios de comunicación de los medios trasladables y non-trasladables. Por vía del ejemplo, y sin limitación, los medios de comunicación leíbles por computadora pueden comprender medios de comunicación de almacenamiento de computadora y medios de comunicación. Los medios de comunicación de almacenamiento de computadora incluyen ambos volátil y no volátil, medios de comunicación trasladables y no-trasladables implementados en cualquier método

o tecnología para el almacenamiento de información como las instrucciones legibles por computadora, las estructuras de datos, módulos de programa u otros datos. Los medios de comunicación de almacenamiento de computadora incluyen, pero no se limita a, RAM, ROM, EEPROM, memoria de destello u otra tecnología de memoria, CDROM, discos versátiles digitales (DVD) u otro tipo de almacenamiento de disco óptico, cassettes magnéticos, cinta magnetofónica, almacenamiento del disco magnético u otros dispositivos de almacenamiento magnéticos, o cualquier otro medio que pueden usarse para guardar la información deseada y que puede accederse por la computadora 110. Los medios de comunicación incluyen típicamente las instrucciones legibles por computadora, las estructuras de datos, los módulos de programa u otros datos en señales de datos moduladas como una ola del portador u otro mecanismo de transporte que incluyen cualquier medio de comunicación de entrega de información. El término "señal de datos modulada" significa que tiene uno o más de su conjunto de características o cambios de tal una manera como para codificar la información de la señal. Por vía de ejemplo, y sin limitación, los medios de comunicación incluyen los medios de comunicación alambrados como una red alambrada o alambrado directo de la conexión, y los medios de comunicación inalámbricos como acústico, RF, infrarrojo, y otros medios de comunicación inalámbricos. Las combinaciones de cualquiera del anterior también debe ser incluido dentro del alcance de los medios de comunicación legibles por computadora.

[0025] El sistema de memoria 130 incluye los medios de almacenamiento de computador en forma volátil y/o memoria no volátil como memoria de solo lectura (ROM) 131 y la memoria de acceso aleatorio (RAM) 132. Un sistema básico de entrada/salida 133 (BIOS), conteniendo las rutinas básicas que ayudan transferir la información entre los elementos dentro de la computadora 110, como durante el inicio, que es guardado típicamente en la ROM 131. La RAM 132 típicamente contiene los datos y/o módulos del programa

que son inmediatamente accesibles y/o que están actualmente en operación sobre la unidad de proceso 120. Por vía del ejemplo, y sin limitación, la Fig. 1 ilustra el sistema operativo 134, el programa de aplicación 135, otros módulos de programa 136, y programas de datos 137.

[0026] La computadora 110 también puede incluir otros medios de almacenamiento removibles/no-removibles, volátil/no volátil. Sólo, por vía de ejemplo la Fig. 1 ilustra una unidad de disco duro 141 que lee desde o escribe a medios magnéticos no-removibles, no volátiles, una unidad de disco magnética 151 que lee desde o escribe a un removible, no volátil disco magnético 152, y una unidad de disco óptica 155 que lee desde o escribe a un disco óptico trasladable, no volátil 156, como un CD ROM u otros medios ópticos. Otros medios de almacenamiento de computadora removibles/no-removibles, volátil/no volátil que pueden usarse en el ambiente de operación ejemplar incluyen, pero no se limitan a, los casetes de cinta magnética, tarjetas de memoria de destello, discos versátiles digitales, cinta de video digital, RAM de estado sólida, ROM de estatal sólido, y similares. La unidad de disco duro 141 se conecta típicamente al sistema de bus 121 a través de una memoria no-trasladable como la interfaz 140, y se conectan a la unidad de disco magnética 151 y la unidad de disco óptica 155 típicamente al sistema de bus 121 por una memoria trasladable, como la interfaz 150.

[0027] Las unidades y sus medios de almacenamiento de computadora asociados discutidos arriba e ilustrados en la Fig. 1 proporcionan instrucciones legibles de almacenamiento de computadora, estructura de datos, módulos de programa y otros datos para la computadora 110. En la Fig. 1, por ejemplo, la unidad de disco duro 141 ilustra como guardar el sistema operativo 144, el programa de aplicación 145, otros módulos de programa 146, y programas de datos 147. Note igual que estos componentes pueden ser diferentes del sistema operativo 134, el programa de aplicación 135, otro módulos de programa 136, y programa de datos 137. El sistema operativo 144,

el programa de aplicación 145, otros módulos de programa 146, y datos de programas 147 a los cuales son dados números diferentes aquí para ilustrar que, en un mínimo, ellos son copias diferentes. Un usuario puede entrar órdenes e información en la computadora 110 a través de los dispositivos de entrada como un teclado 162 y un dispositivo apuntador 161, normalmente llamado un ratón, tracción de bola (trackball) o almohadilla de toque. Otros dispositivos de entrada (no mostrados) pueden incluir un micrófono, palanca de mando, la almohadilla de juego, plato satélite, escáner, o similares. Estos y otros dispositivos de entrada son a menudo conectados a la unidad de proceso 120 a través de una interfaz de entrada de usuario 160 que se acopla al sistema de bus 121, pero puede conectarse por otra interfaz y estructuras de bus, como un puerto paralelo, puerto de juego o un bus de serie universal (USB).

[0028] Un monitor 191 u otro tipo dispositivo de despliegue también se conecta al sistema de bus 121 vía una interfaz, como una interfaz de video 190. Una interfaz de gráficos 182, como Northbridge, que también puede conectarse al sistema de bus 121. Northbridge es una configuración de chip (chipset) que se comunica con la CPU, o unidad de procesamiento del organizador (Host) 120, y asume la responsabilidad para la aceleración de las comunicaciones del puerto de gráficos (AGP). Uno o más unidades de procesamiento de gráficos (GPUs) 184 pueden comunicarse con la interface de gráficos 182. En esta consideración, las GPUs 184 generalmente incluyen el almacenamiento de memoria de en-chip, como el almacenamiento de registro y GPUs 184 que se comunican con una memoria de video 186. Las GPUs 184, sin embargo, son solo por ejemplo de un coprocesador y así de una variedad de dispositivos de co-procesamiento que pueden ser incluidos en la computadora 110. Un monitor 191 u otro tipo de dispositivo de despliegue también se conectan al sistema de bus 121 vía una interfaz, como una interfaz de video 190 que puede comunicarse a su vez con la memoria de video 186. Además del monitor 191, las computadoras pueden incluir también otros dispositivos de

rendimiento periféricos como parlantes 197 e impresora 196 que pueden conectarse a través de una interfaz de salida periférica 195.

[0029] La computadora 110 puede operar en un ambiente conectado a una red de computadoras que usa las conexiones lógicas a una o más computadoras remotas, como una computadora remota 180. La computadora remota 180 puede ser una computadora personal, un servidor, un enrutador, una red de PCs, un dispositivo par u otro nodo de la red común, y típicamente incluye muchos o todos los elementos descritos arriba relacionados a la computadora 110, aunque sólo un dispositivo de almacenamiento de memoria 181 se ha ilustrado en la Fig. 1. Las conexiones lógicas pintadas en la Fig. 1 incluyen una red de área local (LAN) 171 y una red de área ancha (WAN) 173, pero también puede incluir otras redes. Tales ambientes de gestión de redes son comunes en las oficinas, la computadora de empresa-amplia se conecta a una red de computadoras, intranets y la Internet.

[0030] Cuando es usada en un ambiente de red LAN, la computadora 110 se conecta a la LAN 171 a través de una interfaz de red o adaptador 170. Cuando se usa en un ambiente de gestión de redes WAN, la computadora 110 incluye un módem 172 u otros medios típicamente para establecer las comunicaciones sobre la WAN 173, como la Internet. El módem 172 que puede ser interno o externo puede conectarse al sistema de bus 121 vía la interfaz de entrada del usuario 160, u otro mecanismo apropiado. En un ambiente conectado a una red de computadoras, los módulos del programa pintados relacionados a la computadora 110, o parte de ello, puede guardarse en el dispositivo de almacenamiento de memoria remoto. Por vía del ejemplo, y sin limitación, la Fig. 1 ilustra el programa de aplicación remota 185 como residente en el dispositivo de memoria 181. Se apreciará que las conexiones de red mostradas son medios ejemplares y otros medios para establecer un enlace de comunicaciones entre las computadoras pueden usarse.

[0031] Una de habilidad ordinaria en el arte puede apreciar que una computadora 110 u otro dispositivo del cliente pueden desplegarse como parte de una red de computadoras. En esta consideración, la invención presente pertenece a cualquier sistema de computadoras que tiene cualquier número de memorias o unidades de almacenamiento, y cualquier número de aplicaciones y procesos que ocurren por cualquier número de unidades del almacenamiento o volúmenes. La invención presente puede aplicar a un ambiente con computadoras de servidor y computadoras clientes desplegadas en un ambiente de red, mientras tengan el almacenamiento remoto o local. La invención presente también puede aplicar a un dispositivo de cómputo autónomo, mientras tenga funcionalidad de lenguaje de programación, interpretación y capacidades de ejecución.

[0032] La computación distribuida facilita compartir recursos de la computadora y servicios por intercambio directo entre dispositivos de cómputo y sistemas. Estos recursos y servicios incluyen el intercambio de información, almacenamiento caché, y almacenamiento en disco para los archivos. La computación distribuida se aprovecha de la conectividad de la red, mientras permite a los clientes distribuir su poder colectivo par beneficio de la empresa entera. En esta consideración, una variedad de dispositivos pueden tener aplicaciones, objetos o recursos que pueden actuar recíprocamente para implicar técnicas de autenticación de la invención presente para las gráficas confiables de el canal (es) (pipeline(s)) de gráficos confiable.

[0033] La fig. 2 proporciona un diagrama esquemático de una red ejemplar o un ambiente de cómputo distribuido. El ambiente de cómputo distribuido comprende los objetos de cómputo 10a, 10b, etc. y los objetos de cómputo o dispositivos 110a, 110b, 110c, etc. Estos objetos pueden comprender programas, métodos, almacenamiento de datos, la lógica programable, etc. Los objetos pueden comprender partes de los mismos o diferentes dispositivos como

PDA's, televisiones, reproductores de MP3, computadoras personales, etc. Cada objeto puede comunicarse con otro objeto por vía de las comunicaciones de red 14. Esta red en si misma puede comprender a otros objetos de cómputo y dispositivos de cómputo que proporcionan los servicios al sistema de la Fig. 2. de acuerdo con un aspecto de la invención, cada objeto 10 o 110 puede contener una aplicación que podría pedir técnicas de autenticación de la invención presente para el canal(es) de gráficos confiable.

[0034] También puede apreciarse que un objeto, como el 110c, puede ser organizado (Hosted) en otro dispositivo de cómputo 10 o 110. Así, aunque el ambiente físico pintado puede mostrar los dispositivos conectados como las computadoras, tal ilustración es meramente ejemplar y el ambiente físico puede pintarse alternativamente o puede describirse comprendiendo varios dispositivos digitales como PDA's, televisiones, reproductores de MP3, etc., objetos de software como las interfaces, objetos COM y similares.

[0035] Hay una variedad de sistemas, componentes, y configuraciones de red que apoyan los ambientes de cómputo distribuidos. Por ejemplo, los sistemas de cómputo pueden conectarse juntos por línea alamburada o sistemas inalámbricos, por redes locales o redes ampliamente distribuidas. Actualmente, muchas de las redes se acoplan a Internet que mantiene la infraestructura de cómputo ampliamente distribuida y abarca muchas redes diferentes.

[0036] En casa los ambientes de red, hay por lo menos cuatro medios de de transporte de red dispares que pueden cada uno soportar un único protocolo como la línea de potencia, datos (ambos inalámbrico y alamburado), voz (por ejemplo, teléfono) y medios entretenimiento. Más dispositivos de control del hogar como interruptores de luz y aparatos que pueden usar la línea de poder para conectividad. Los Servicios de datos pueden

entrar en la casa como la banda ancha (por ejemplo, DSL o Cable Módem) que son accesibles dentro del hogar usando cualquier conectividad inalámbrica (por ejemplo, HomeRF o 802.11b) o alambrada (por ejemplo, Home PNA, Cat 5, incluso la línea de poder). El tráfico de Voz puede entrar en la casa alambrado (por ejemplo, Cat 3) o inalámbrico (por ejemplo, los teléfonos celulares) y puede distribuirse dentro de la casa usando cableado Cat. 3. Los medios de entretenimiento pueden entrar en la casa a través de satélite o cable y pueden ser típicamente distribuidos en la casa usando cable coaxial. IEEE 1394 y DVI también están surgiendo como interconexiones digitales para los grupos de dispositivos de los medios de comunicación. Todos éstos se conectan a un ambiente de red y otros que pueden surgir como protocolos estándar pueden interconectarse para formar una intranet que puede conectarse al mundo externo por vía de Internet. Para abreviar, una variedad de fuentes diferentes existe para el almacenamiento y transmisión de datos, y por consiguiente, avanzando, los dispositivos de cómputo requerirán maneras de proteger el contenido en todas las partes del canal de procesamiento de datos.

[0037] La 'Internet' normalmente se refiere a la colección de redes y entradas que utilizan la colección de protocolos TCP/IP que son muy conocidos en el arte de redes de computadoras. TCP/IP es una sigla de ("Transport Control Protocol/Interfaz Program") Protocolo de Control de Transporte/ Protocolo de Interfase. La Internet puede describirse como un sistema de redes de computadoras remotas geográficamente distribuidas interconectadas por computadoras que ejecutan protocolos de gestión de redes que les permiten a los usuarios actuar recíprocamente y compartir la información sobre las redes. Debido a tal extendida información compartida, las redes remotas como la Internet han lejos generalmente evolucionado en un sistema abierto para que diseñadores pueden diseñar las aplicaciones de software para realizar operaciones especializadas o servicios, esencialmente sin restricción.

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[0038] Así, la infraestructura de red habilita a una organizador (Host) de topologías de red como cliente/servidor, par-a-par, o arquitecturas híbridas. El "cliente" es un miembro de una clase o grupo que usa los servicios de otra clase o grupo al cual no está relacionado. Así, en la computación, un cliente es un proceso, es decir, aproximadamente un conjunto de instrucciones o tareas, que pide un servicio proporcionado por otro programa. El proceso del cliente utiliza el servicio pedido sin tener que "saber" cualquier detalle de la operación sobre el otro programa o el propio servicio. En una arquitectura cliente/servidor, particularmente un sistema conectado a una red de computadoras, un cliente normalmente es una computadora que accede a los recursos de la red compartidos proporcionados por otra computadora por ejemplo, un servidor. En el ejemplo de la Fig. 2, las computadoras 110a, 110b, etc. puede pensarse como los clientes y las computadoras 10a, 10b, etc. pueden pensarse como el servidor dónde el servidor 10a, 10b, etc. mantiene los datos que se reproducen luego en las computadoras cliente 110a, 110b, etc.

[0039] Un servidor es típicamente un sistema de cómputo remoto accesible sobre una red remota como Internet. El proceso del cliente puede estar activo en un primer sistema de computadora, y el proceso del servidor puede estar activo en un segundo sistema de computadora, mientras se comunican entre si sobre un medio de comunicaciones, proporcionando la funcionalidad distribuida y permitiendo a los múltiples clientes aprovecharse de las capacidades de recolección-información del servidor.

[0040] El cliente y el servidor se comunican el uno al otro utilizando la funcionalidad proporcionada por una capa protocolar. Por ejemplo, Transferencia de Hipertexto del Protocolo (HTTP) que es un protocolo común que es usado junto con World Wide Web (WWW). Típicamente, una dirección de red de computadora como un (URL. Universal Resource Locator) Localizador de Recurso Universal o una dirección de Protocolo de Internet (IP) se usa para

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identificar cada servidor o computadoras cliente. La dirección de red puede referirse a una dirección URL - Localizador de Recurso Universal. Por ejemplo, la comunicación puede proporcionarse sobre un medio de comunicaciones. En particular, el cliente y el servidor pueden acoplarse entre sí vía las conexiones TCP/IP para la comunicación de alta-capacidad.

[0041] Así, la Fig. 2 ilustra un ambiente distribuido o conectado ejemplar, con un servidor en comunicación con computadoras cliente via un Bus de Red (network/bus) en que la invención presente puede emplearse. En más detalle, varios servidores se interconectan 10a, 10b, etc., vía un Bus de Red (network/bus) de comunicaciones 14 que puede ser una LAN, WAN, intranet, Internet, etc., con varios clientes o dispositivos de cómputo remotos 110a, 110b, 110c, 110d, 110e, etc., como una computadora portátil, un dispositivo portátil, un cliente delgado, un aparato conectado a una red de computadoras, u otro dispositivo, como un VCR, TV, horno, luz, calentador y similares de acuerdo con la invención presente. Se contempla así que la invención presente puede aplicar a cualquier dispositivo de cómputo en relación con el cual es deseable el proceso, almacenamiento o entrega de contenido seguro de una fuente confiable.

[0042] En un ambiente de la red en que las comunicaciones del Bus de Red (network/bus) 14 es la Internet, por ejemplo, los servidores 10 pueden ser los servidores Web con que los clientes 110a, 110b, 110c, 110d, 110e, etc. Se comunican por cualquiera de varios protocolos conocidos como HTTP. Los Servidores 10 también pueden servir como clientes 110, como puede ser característico de un ambiente de cómputo distribuido. Las comunicaciones pueden ser alámbricas o inalámbricas, según sea apropiado. Los dispositivos cliente 110 pueden o no pueden comunicarse vía el Bus de Red (network/bus) 14, y puede tener comunicaciones independientes asociadas allí. Por ejemplo, en el caso de un TV o VCR, allí puede estar o no un aspecto conectado a una red de computadoras. Cada computadora cliente 110 y computadora servidor 10

puede equiparse con varios módulos de programa de aplicación u objetos 135 y con conexiones o acceso a varios tipos de elementos del almacenamiento u objetos, a través de los cuales los archivos pueden ser almacenados o a parte de los archivos puede ser descargada o migrada. Así, la invención presente puede utilizarse en un ambiente de red de computadoras que tiene las computadoras cliente 110a, 110b, etc. que pueden acceder y pueden actuar recíprocamente con un Bus de Red (network/bus) de computadora 14 y computadoras servidor 10a, 10b, etc. que pueden actuar recíprocamente con las computadoras cliente 110a, 110b, los dispositivos 111 etc. y otras bases de datos 20.

Derechos de Administración (RM-Rights Management) - Apreciación global

[0043] Como es conocido, y refiriéndose ahora a la Fig. 3, los derechos de administración (RM) y la entrada en vigor es muy deseable en relación con una aplicación digital 32 que será distribuida a los usuarios. Al ser recibida por el usuario, tal usuario inicia la aplicación 32 con la ayuda de un dispositivo de cómputo apropiado 34 o similar.

[0044] Típicamente, un autor de la aplicación o publicador (aquí en adelante 'publicador') 44 distribuyendo tal aplicación digital 32 desea restringir lo que el usuario puede hacer con tal aplicación distribuida 32. Por ejemplo, el publicador 44 puede desear restringir al usuario de copiar y redistribuir tal aplicación 32 a un segundo usuario, o puede desear permitir actuar la aplicación distribuida 32 sólo a un número limitado de veces, sólo durante un cierto tiempo total, sólo en un cierto tipo de máquina, sólo en un cierto tipo de plataforma, sólo por un cierto tipo de usuario, etc.

[0045] Sin embargo, después de que la distribución ha ocurrido, tal publicador 44 tiene muy poco o algún control sobre la aplicación 32.

Un sistema de RM 30, entonces, permite el actuar controlado de una aplicación 32, dónde tal control es flexible y definible por el publicador 44 de tal aplicación 32. Típicamente, la aplicación 32 se distribuye al usuario en forma de un paquete 33 por vía de cualquier canal de distribución apropiado. El paquete 33 como distribuido puede incluir la aplicación 32 o una parte cifrada de ello con una encriptación simétrica / clave de descifrado (KD), (es decir, (KD(AP))), así como otra información que identifica la aplicación 32, cómo para adquirir una licencia para tal aplicación 32, etc.,

[0046] El sistema RM 30 basado en confianza le permite al publicador 44 de la aplicación 32 especificar reglas de licencia que deben satisfacerse antes de tal aplicación 32 que permite ser actuado en un dispositivo de cómputo de un usuario 34. Tales reglas de licencia pueden incluir el requisito temporal mencionado, y puede ser incluido dentro de una licencia digital o puede usarse el documento (aquí en adelante 'licencia') 36 del dispositivo de cómputo del usuario / usuarios 34 (tales condiciones son intercambiable a menos que las circunstancias requieran otra forma) debe obtener del publicador 44 o un agente de allí. Tal licencia 36 también incluye la clave de dedscifrado (KD) para descifrar la parte encriptada de la aplicación 32, quizás encriptada según una clave descifrable por el dispositivo de cómputo del usuario 34. Como visto en la Fig. 3, tal llave de encripción puede ser una llave pública del dispositivo de cómputo del usuario 34 (PU-BB), y el dispositivo de cómputo del usuario 34 que probablemente tiene la clave privada correspondiente (PR-BB) por la cual (PU-BB(KD)) puede descifrarse.

[0047] El publicador 44 para la aplicación 32 debe confiar en que el dispositivo de cómputo del usuario 34 cumplirá las reglas y requisitos especificados por tal publicador 44 en la licencia 36, es decir que la aplicación 32 no actuará a menos que las reglas y requisitos dentro de la licencia 36 estén satisfechos. Preferentemente, entonces, el dispositivo de cómputo del usuario 34

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es proporcionado con un componente confiado o mecanismo 38 eso no actuará la aplicación 32 excepto según las reglas de la licencia incluidas en la licencia 36 asociada con la aplicación 32 y obtenida por el usuario.

[0048] El componente 38 confiado tiene una licencia típicamente de evaluador 40 que determina si la licencia 36 es válida, revisa las reglas de la licencia y los requisitos en tal licencia válida 36, y determina basado en las reglas de licencia repasada y requisitos si el requerimiento del usuario tiene el derecho para actuar la aplicación 32 correspondiente de la manera buscada, entre otras cosas. Como debe entenderse, la licencia del evaluador 40 es confiada en el sistema RM 30 para llevar a cabo los deseos del publicador 44 de la aplicación 32 según las reglas y requisitos en la licencia 36, y el usuario no debe poder alterar fácilmente tales elemento confiado para ningún propósito, nefario o de otra forma.

[0049] Como debe entenderse, las reglas y requisitos en la licencia 36 pueden especificar si el usuario tiene derechos para actuar la aplicación 32 basado en cualquiera de varios factores, incluyendo quién es el usuario, dónde el usuario se localiza, qué tipo de dispositivo de cómputo 34 el usuario está usando, qué sistema operativo está llamando el sistema RM 30, la fecha, el tiempo, etc. además, las reglas y requisitos de la licencia 36 pueden limitar la licencia 36 a un número predeterminado de actuaciones, o tiempo de operación predeterminado, por ejemplo. Así, el componente 38 confiado puede necesitar referirse a un reloj 42 en el dispositivo de cómputo 34.

[0050] Pueden especificarse las reglas y requisitos en la licencia 36 según cualquier idioma apropiado y sintaxis. Por ejemplo, el idioma puede especificar los atributos y valores que deben satisfacerse simplemente (la FECHA debe ser más tarde que X, por ejemplo), o puede requerir la actuación de

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funciones según una escritura especificada (SI la FECHA mayor que X, ENTONCES HAGA. . . , por ejemplo).

[0051] En la licencia evaluador 40 que determina que la licencia 36 es válida y que el usuario satisface las reglas y requisitos allí, la aplicación 32 puede actuarse entonces. En particular, para actuar la aplicación 32, la clave de descifrado (KD) se obtiene de la licencia 36 y se aplica a (KD(AP)) del paquete 33 para producir la aplicación 32 real, y la aplicación 32 actual es luego en efecto actuada en adelante en la manera del conjunto en la licencia 36.

[0052] Como el conjunto adelantado arriba, la licencia 36 con (PU-BB(KD)) en efecto autoriza una entidad en la posesión de (PR-BB) para acceder (KD) y por eso accede la aplicación 32 encriptada según tal (KD), presumiendo claro que la entidad cumple todas las condiciones adelante como el conjunto en la licencia 36. Como debe apreciarse, sin embargo, otros tipos de licencias 36 pueden existir dentro del sistema RM 30.

[0053] Por ejemplo, puede apreciarse que en un guión el publicador 44 de la aplicación 32 puede autorizar una o más licenciadores particulares 46 para emitir una licencia 36 para la aplicación 32 proporcionando al licenciador 46 con una publicación de licencia 36p. Como puede apreciarse, tal publicación de licencia 36p probablemente es similar a la licencia 36 en tal publicación de la licencia 36p que incluye la clave de descifrado (KD) para descifrar la aplicación 32, aquí encriptada según una clave pública del licenciador 46 (PU-BB). Igualmente, la publicación de licencia 36p incluye las reglas y requisitos probablemente por dar el satisfecho 32. Aquí, sin embargo, cosas así gobiernan y los requisitos serán insertados en la licencia 36 como emitidos por el licenciador 46, y no es especialmente aplicable al licenciador 46.

[0054] Note, sin embargo, que la publicación de licencia 36p puede incluir otras reglas y requisitos que son de hecho aplicables al licenciador 46 de hecho. En concordancia, el concedente 46 debe incluir un componente 38 confiado con una licencia de evaluador 40 de una manera semejante al dispositivo de cómputo del usuario 34. Significativamente, cada tipo de licencia 36, 36p, etc. (aquí en adelante, 'licencia 36') como proferida típicamente incluye una firma digital para la autenticación / los propósitos de la comprobación, y cada firma digital se valida por el componente 38 confiado antes de la licencia 36 se honra. Claro, si cualquier aprobación falla, el proceso acaba y la licencia 36 no se honra.

Arquitectura de Licenciamiento Flexible Para La Aplicación Digital de Licenciamiento

[0055] Como fue anticipado arriba, un publicador 44 puede desear proporcionarle la flexibilidad a un usuario para comprar tipos diferentes o ediciones de una aplicación 32. Por ejemplo, y de nuevo, el publicador 44 puede desear proporcionar una edición completa-destacada, una edición rudimentaria, una edición comercial, una edición para la casa, etc. Sin embargo, según el arte anterior, cada edición de la aplicación 32 se emitiría separadamente como un conjunto de código (es decir, archivo de computadora o serie de tales archivos o similares). Como debería ser evidente, el soporte, manteniendo, comercialización, y distribución de cada conjunto de código separadamente emitido podrían complicarse ampliamente, especialmente como comparado para realizar tales quehaceres con respecto a un solo conjunto de código normalmente emitido.

[0056] Así, en una personalización de la invención presente, un publicador de hecho emite un código común configurado para la aplicación 32, pero diferenciado entre las ediciones de la aplicación 32 correspondiendo a la

emisión diferente de licencias RM 36. Significativamente, la aplicación 32 como configurada dentro del código común configurado es definido para tener una pluralidad de características o similares, y cada licencia 36 es definida para habilitar algunas de las características definidas y/o desactivar ciertas características definidas. Construyendo y empleando tal licencia 36 para la aplicación 32 dentro de la arquitectura RM 30 son conocidos o deben estar claros al público pertinente y por consiguiente necesita que no se configure aquí dentro en detalle. En concordancia, cualquier método de construir y emplear tal licencia 36 puede usarse sin partir adelante del espíritu y conjunto en relación con la invención presente.

[0057] Por ejemplo, puede darse el caso de que la aplicación 32 tenga una parte de la instancia dividida que instancia igual sobre el dispositivo de comportamiento 34, y esa tal instancia es cifrada y descifrable según la clave (KD) de la licencia 36. Así, en una orden apropiada del usuario o similar, el componente 38 confiado recupera tal clave (KD) de la licencia 36 si tal licencia 36 entonces permite y luego emplea la recuperada (KD) para descifrar la parte de la instancia, y la parte de la instancia descifrada que es luego empleada para iniciar la instancia de la aplicación 32.

[0058] Semejantemente, puede ser el caso de que la aplicación 32 se define para tener varias partes de característica, cada una correspondiendo a un característica, y que cada parte de la característica requiere como una condición precedente al uso que el componente 38 confiado confirma que perite la licencia 36. Así, y como debe apreciarse ahora, si una aplicación 36 tiene las características A, B, y C, una primera licencia 32 correspondiendo a una primera edición de la aplicación 32 puede permitir el uso de la característica único A, una segunda licencia 32 correspondiendo a una segunda edición de la aplicación 32 sólo puede permitir el uso de las características B y C, una tercera licencia 32 correspondiendo a una tercera

edición de la aplicación 32 puede permitir el uso de todas las características A, B, y C, y similares. Note aquí que las ediciones pueden ser definidas por la publicadora 44 ofreciendo sólo ciertos tipos de autorización correspondiente 36, o puede personalizarse por un usuario en el curso de obtener una licencia particular 36, presumiendo que de hecho el publicador ofrece tal licencia '36 personalizada. En la obtención de un tipo particular de licencia 36, un usuario puede emplear las características disponibles de la aplicación 32 que se habilitan por la licencia 36, y se restringen de emplear las características disponibles de la aplicación 32 que no se habilita por la licencia 36. Probablemente, en el caso dónde una licencia 36 se obtiene como una compra basada en una cuota, tal cuota variaría basada en las características disponibles en la aplicación 32 habilitada para eso.

[0059] Significativamente, aunque la aplicación 32 puede ofrecerse adelante en por lo menos tres ediciones como el conjunto sobre si no más, todas las tres ediciones pueden estar basadas en una sola copia base de la aplicación 32 con características todas disponibles incluidas en ello. Como debe apreciarse, cada característica está disponible a un usuario particular con una licencia 36 particular si la licencia habilita tal característica o no desactiva tal característica. Es más, la sola copia base puede distribuirse ampliamente y redistribuirse sin miedo de uso impropio ya que el uso de la aplicación 32 sólo puede ocurrir con una licencia 36 propiamente-obtenida.

[0060] Notablemente, para efectuar la emisión de tal licencia 36 para una aplicación y en una personalización de la invención presente, una licencia de arquitectura 50 como es mostrada en la Fig. 4 se proporciona. Como es visto en tal Fig. 4, la licencia de arquitectura 50 incluye el publicador 44 y el licenciador 46 de la Fig. 3, y también puede incluir a un minorista 52 que detalla la aplicación 32 a un usuario. Claro, el publicador 44 también puede ser el minorista 44 sin partir del espíritu y alcance de la invención presente.

[0061] Probablemente, tal minorista 52 es una distribución de localización que realiza una transacción de distribución con un usuario para obtener la aplicación 32 y/o obtener una licencia 36 correspondiente allí. Haciendo para que, el minorista 52 dirija al usuario a un distribuidor 54 o similar operando un sitio de distribución o similar para obtener la propia aplicación 32 y/o dirija al usuario al licenciador 46 para la propia licencia 36. Probablemente, aunque no necesariamente, el minorista 52, el licenciador 46, y el distribuidor 54 están todos conectados a una red juntos por vía de una red como Internet, y el usuario visita al minorista 52 y obtiene la aplicación 32 del distribuidor 54 y la licencia 36 del licenciador 46 (aquí en adelante, 'la licencia de uso 36') por vía de tal red.

[0062] En una personalización de la invención presente, y como visto en la Fig. 4, la aplicación 32 así proporcionada por el publicador 44 incluye código ejecutable por que la aplicación 32 es instanciada y empleado. Significativamente, tal aplicación 32 así proporcionada por el publicador 44 también incluye varias licencias especiales 36, incluso una licencia de definición 36, una licencia inicial 36, y una licencia de no-red 36, dónde tales licencias especiales 36 son hasta aquí distintas del uso de licencia 36 aquí referenciado.

[0063] La definición de la licencia 36, de nuevo, no es ella misma una licencia de uso 36 que puede obtenerse de un licenciador 46 para emplear la aplicación 32, pero en cambio es una licencia especial 36 que define todas las características disponibles en la aplicación 32 por vía de un uso apropiado de licencia 36. Tal licencia de definición 36 configura adelante todas las características de la aplicación 32 como los derechos disponibles, luego, pero realmente no concede cualquiera de esos derechos. En cambio, una licencia de uso obtenida 36 permite una característica particular que garantiza un derecho correspondiente.

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[0064] Además, para continuar el ejemplo anterior, si una aplicación 32 incluidas tres características definidas A, B, y C, la definición de licencia 36 partiría para cada tales características A, B, y C junto con información pertinente relacionada. Tales características pertinentes pueden incluir una referencia por ejemplo a la característica en la aplicación 32, una descripción, y quizás información de edición considerando cual edición de la aplicación 32 incluye tal característica. Así, un uso de licencia 36 que habilita tal característica puede emplear tal información por ejemplo para permitirle a un usuario emplear el mismo. Igualmente, si un uso de licencia 36 no permite tal característica, tal información nunca puede emplearse para informar a un usuario de la disponibilidad de tal característica, y quizás incluso dirigir el usuario a un licenciador 46 para obtener otra licencia de uso 36 que habilitaría tal característica.

[0065] Diferente a una licencia de definición 36, una licencia 36 inicial, es semejante a una licencia de uso 36 que puede usarse para emplear la aplicación 32. Sin embargo, tal licencia de uso 36 es una licencia 36 especial, tal licencia de uso 36 sólo puede emplearse de una manera inicial, como por ejemplo permitirle a un usuario probar la aplicación 32 para una cantidad definida o longitud de tiempo, por ejemplo. Note aquí que la licencia de uso 36 no se ata al usuario o al dispositivo de cómputo 34.

[0066] Tal licencia inicial 36 puede o no puede conceder los derechos adelante a todos las características de la aplicación 32 como el conjunto dentro de la licencia de definición 36, dependiendo en cómo el publicador 44 ha construido tal licencia inicial 36. Generalmente, la licencia inicial 36 puede ofrecerse para permitirle un período de tiempo a un usuario probable para probar la aplicación 32 sin comprar una licencia de uso 36, permitirle al usuario tener el acceso libre a una edición rudimentaria de la aplicación 32 sin la necesidad de obtener una licencia de uso 36, o similar. En el caso anterior, la

licencia inicial 36 puede conceder los derechos a todas las características, pero para un período relativamente corto de tiempo, mientras en el último caso, la licencia inicial puede conceder los derechos a algunas características, pero para un período de tiempo relativamente largo. Así, un usuario o puede emplear la licencia inicial 36 de una manera temporal hasta que tal usuario decide obtener una licencia de uso 36 o no llevar más allá el empleo de la aplicación, o puede emplear la licencia inicial 36 para usar una forma rudimentaria de la aplicación 32, cuando el caso pueda ser.

[0067] como una licencia inicial 36, una licencia de no-red 36 es semejante a una licencia de uso 36 que puede usarse para emplear la aplicación 32. Sin embargo, tal licencia de no-red 36 es una licencia especial 36 en caso de que un usuario no tenga el acceso de la red al licenciador 46 pero todavía desee usar la aplicación 32. Típicamente, en tal caso, la licencia de no-red 36 no puede emplearse a menos que el usuario obtenga un código de confirmación, como por ejemplo por teléfono o manda por correo dónde tal código de confirmación puede obtenerse a cambio de una cuota. Así, con tal código de confirmación, la licencia de no-red 36 permite emplear la aplicación 32 como si el usuario hubiera obtenido alguna clase de licencia de uso 36 del licenciador 46. Aquí también, la licencia de no-red 36 no se ata al usuario o al dispositivo de cómputo 34, por lo menos no directamente, aunque obtiene el código de confirmación atado por lo menos indirectamente a la licencia no-conectada 36 de una red de computadoras al usuario que presume que el usuario se identificó en el curso de obtener tal código de confirmación.

[0068] Como con la licencia inicial 36, la licencia 36 no-conectada a una red de computadoras puede o no puede conceder los derechos adelante a todas las características de la aplicación 32 como el conjunto dentro de la definición de licencia 36, dependiendo en cómo el publicador 44 ha construido tales licencias no-conectadas a una red 36. Note que la licencia 36

no-conectada a una red puede conceder los derechos a todas las características de la aplicación 32, haciendo que puedan ser así desaconsejados ya que el código especial obtenido puede transferirse por el usuario a otros que podrían entonces acceder a tales características de la aplicación 32.

[0069] Típicamente, el minorista 52 puede proporcionar las licencias especiales 36 mencionado a la aplicación 32 al usuario, directamente o por vía del distribuidor mencionado 54. Note, sin embargo, que el usuario también puede obtener tal aplicación 32 del publicador 44 o de cualquier otra fuente sin partir del espíritu y alcance de la invención presente. De hecho, y como el conjunto adelante en más detalle debajo, puede ser que el usuario obtenga la aplicación 32 de un conocido o una tercera parte y entonces obtiene una licencia de uso 36 por vía del minorista 52.

[0070] En cualquier caso, y en una personalización de la invención presente, la aplicación 32 como es distribuida al usuario puede empaquetarse adicionalmente con la información de referencia incluso una identificación de un minorista 52 particular. Así, tal información de referencia se refiere a tal usuario, tal minorista 52 al efectuar una transacción en la situación dónde el usuario obtiene la aplicación 32 de una fuente de otra manera que el minorista 52, obtiene una licencia de uso 36 para una edición particular de tal aplicación 32. Además, incluso después de que el usuario obtiene la licencia de uso 36, tal información de referencia puede emplearse si el usuario desea regresar al minorista 52 para devolver la licencia 36 o para obtener una licencia de uso diferente 36 para otra edición de tal aplicación 32.

[0071] Como fue anticipado arriba, un usuario en posesión de la sola copia base de la aplicación 32 requiere la licencia 36 de alguna clase para emplear una edición correspondiente particular de la aplicación 32, a menos que claro el usuario emplee la licencia 36 inicial mencionada o la licencia de no-red

36. Sin embargo, y como debe apreciarse, tal licencia de uso 36 contiene la clave de descifrado (KD) para acceder a la parte encriptada de la aplicación 32 y es atada así al usuario o al dispositivo de cómputo 34 que normalmente no viaja con la aplicación 32.

[0072] En una personalización de la presente invención, entonces, y recordando que la aplicación 32 incluye la licencia de definición 36 como fue configurada arriba, el usuario en el curso de obtener tal primera licencia de uso 36 obtiene del minorista 52 o similar un producto de licencia 36 que especifica por lo menos adelante algunas de las características como el conjunto en la licencia de definición 36. En tal personalización, la licencia de producto 36 no es una licencia de uso 36 que puede usarse para emplear la aplicación 32. En cambio, el producto de licencia 36 como con tal de que por el minorista 52 o similar defina qué edición de la aplicación 32 que el usuario ha obtenido, o sino las características como el conjunto arriba en la licencia de definición 36 que el usuario ha pedido, y además es una ficha (token) o autorización que el usuario presenta al licenciador 46 durante el curso de una transacción de licencia de uso requerida a tal concedente 46 que tal usuario es titulado a una licencia de uso correspondiente 36 para una edición particular de la aplicación 32.

[0073] Puesto más simplemente, el usuario interactúa con el minorista 52 para obtener el derecho a una licencia de uso 36 pero de hecho no recibe la licencia de uso 36 de tal minorista 52. En cambio, el usuario recibe la licencia de producto 36 como una ficha que se presenta al licenciador 46, y de hecho el licenciador 46 en la contestación emite una correspondiente licencia 36 al usuario que el usuario puede usar para emplear una edición correspondiente de la aplicación 32. La licencia de uso 36 como emitida corresponde a la licencia de producto 36 en que los derechos conferidos en la licencia de uso 36 correspondan a la edición o a parte de las características en la licencia de producto 36.

[0074] Como puede apreciarse, mientras la licencia de producto 36 podría distribuirse teniendo el usuario obtener la licencia de uso 36 en el curso de una transacción directa con el licenciador 46, el licenciador 46 puede preferir no ocuparse de los aspectos del menudeo de tal transacción directa. Es más, empleando la licencia de producto 36 en la manera configurada aquí dentro, pueden emplearse los múltiples minoristas 52 al efectuar detalladas las transacciones con los usuarios mientras permanecen sólo teniendo uno o unos licenciadores 46, cada licenciador 46 es capaz para emitir una licencia de uso 36 en relación con una transacción con cualquier minorista 52. Finalmente, por separando la emisión del uso de licencia 36 por el licenciador 46 de la transacción del menudeo con el minorista 52, el publicador 44 puede ejercer mayor control sobre tal emisión, y también puede lograr mayor seguridad.

[0075] Probablemente, la licencia de producto 36 así proporcionada por el minorista 52 al usuario incluye información apropiada que considera dónde el usuario puede encontrar el licenciador 46 para emitir la licencia de uso 36 que corresponde a tal licencia de producto 36. Además, y en una personalización de la invención presente, la licencia de producto 36 así proporcionada por el minorista 52 al usuario puede empaquetarse con la información de referencia incluso una identificación del distribuidor 54 de que la aplicación 32 puede obtenerse. Así, en la situación dónde el usuario obtiene la licencia de producto 36 antes para la aplicación 32, tal información de referencia se refiere a tal usuario, a tal distribuidor 54 para obtener la copia base de tal aplicación 32. Además, incluso después de que el usuario obtiene la aplicación 32, tal información de referencia puede emplearse si el usuario desea regresar al distribuidor 54 por otra copia de tal copia base de tal aplicación 32, o incluso para una nueva versión o actualización de tal copia base de tal aplicación 32.

[0076] Para resumir, luego, un usuario puede obtener la aplicación 32 antes o después de una licencia del producto 36. Si antes, se

emplea la información de referencia empaquetada con la aplicación 32 para localizar a un minorista 52 particular del cual el usuario puede obtener la licencia de uso 36. Si después, la información de referencia empaquetada con la licencia de producto 36 se emplea para localizar a un distribuidor 54 particular del cual el usuario puede obtener la copia base de la aplicación 32.

[0077] En un escenario típico, y volviéndose ahora a la Fig. 5, un usuario comprando u obteniendo la aplicación 32 y un uso correspondiente por otra parte de la licencia 36 visitaría a un minorista 52 y comprometería allí en una transacción por la que el usuario seleccionaría las características particulares deseadas en la aplicación 32 o una edición particular de la aplicación 32 (paso 501). Como parte de tal transacción, el usuario puede proporcionar una cuota al minorista 52. Típicamente, aunque no necesariamente, el minorista 52 controla la transacción y determina la presentación de información y opciones que relacionan a la aplicación 32 y los formularios aceptables de pago, y en la aprobación del usuario la transacción se ejecuta.

[0078] También como parte de la transacción, el minorista 52 colecciona la información del usuario necesario para construir u obtener una licencia de producto apropiado 36 que corresponde a la selección del usuario y de hecho construye u obtiene tal licencia de producto 36 (paso 503). Como notado arriba, tal licencia de producto 36 puede empaquetarse con la información de referencia incluso un distribuidor 54 particular del cual la copia base de la aplicación 32 puede obtenerse. De todos modos, tal licencia de producto 36 se lleva del minorista 52 al usuario (paso 505). Además, el minorista 52 puede enviar un mensaje de confirmación de transacción al usuario que confirma la transacción. En ese caso, el mensaje puede incluir una situación a la cual la licencia del producto 36 puede obtenerse si tal producto que licencia 36 no se envía automáticamente a la usuaria.

[0079] Al recibir la licencia de producto 36 del minorista 52, el usuario puede instalarla el mismo (paso 507) o puede ahorrar la licencia de producto 36 para la recuperación más tarde e instalación. Generalmente, y como se partirá debajo en más detalle, la instalación incluye validar la publicación de esa licencia 36 incluso una firma y guardar el mismo en el dispositivo de cómputo 34 del usuario. Aunque una licencia de uso 36 que corresponde a la licencia de producto 36 puede obtenerse en este punto, puede en cambio ser aconsejable para asegurar primero que la aplicación 32 correspondiente se ha instalado. Note que si la licencia de producto 36 se ahorra para la recuperación más tarde, tal producto de licencia 36 debe ahorrarse en un formulario encriptado, sobre todo si la licencia de producto 36 puede tomarse para otro usuario y puede emplearse para ello.

[0080] Una vez que la licencia de producto 36 se ha recibido, el dispositivo de cómputo del usuario 34 determina si la aplicación 32 correspondiente se ha instalado (paso 509). Tal cheque puede lograrse por ejemplo inspeccionando un registro del dispositivo de cómputo 34 para un valor apropiado. Si ya instaló, la aplicación 32 puede actuarse para completar el proceso de adquirir la licencia de uso 36 (paso 511). Si no instalada, la aplicación 32 es adquirida del distribuidor 54 configurada en la información de referencia incluida con la licencia de producto 36 o se obtiene de un medio del almacenamiento disponible del dispositivo de cómputo 34 y la aplicación 32 adquirida se instala en tal dispositivo de cómputo 34 (paso 513), y la aplicación 32 instalada se actúa entonces como un paso 511.

[0081] Note que puede haber en este punto ya otra licencia de uso 36 obtenida en el dispositivo de cómputo 34 en tal caso la licencia de uso 36 para ser obtenida es una licencia de uso adicional 34. De todos modos, en la aplicación 32 instalada siendo actuada y basada en la presencia de la licencia de producto 36, el dispositivo de cómputo 34 adquiere una licencia de uso 36

correspondiente allí (paso 515). En particular, la licencia de producto 36 y quizás la definición de licencia 36 de la aplicación 32 se envía al licenciador 46 como es identificado dentro de la licencia de producto 36, junto con una identificación del usuario y/o del dispositivo de cómputo 34 y/o el componente confiado 38 o similares (paso 517).

[0082] El licenciador 46 valida todas las licencias 36 e identificaciones, y asumiendo que tales aprobaciones tienen éxito el licenciador 46 estructura una licencia de uso apropiada 36 basada allí (paso 519) y retorna el mismo al usuario solicitante (paso 521). Notablemente, en la construcción de la licencia de uso 36, el licenciador 46 obtiene una clave criptográfica de por lo menos una de las identificaciones como una clave pública (PU) del usuario, encripta la clave de descifrado arriba mencionada (KD) para la aplicación 32 con tal (PU) para resultar en (PU(KD)), e incluye tal (PU(KD)) en la licencia de uso 36 construida y retomada. También notablemente, las identificaciones pueden incluir un hardware ID (HWID) correspondiendo al dispositivo de cómputo del usuario 34 y tal HWID también pueden ser incluidos en la licencia de uso construida y retomada 36. Más allá notablemente, el licenciador 46 puede notar en una base de datos apropiada que la licencia de producto 36 se ha sometido y que un uso correspondiente de la licencia 36 se ha emitido, y también puede notificar al minorista de la misma consideración.

[0083] El dispositivo de cómputo del usuario 34 puede guardar el uso retomado de la licencia 36 en una situación apropiada como un almacenamiento de licencia, y tal licencia de uso 36 almacenada puede emplearse para usar ciertas características de las aplicación luego. En particular, y volviéndose ahora a la Fig. 6, en una demanda para usar una característica particular de la aplicación 32 (paso 601), tal característica de la aplicación 32 puede en efecto requerir que el componente 38 confiado determina si una licencia de uso 36 en el dispositivo de cómputo 34 permite tal uso de tal

característica (paso 603). En la contestación, el componente 38 confiado puede localizar una licencia de uso obtenida 36 en un almacenamiento de la licencia (paso 605), validar la misma (paso 607), y determinar si tal licencia de uso 36 validada permite el uso de la característica (paso 609).

[0084] Presumiendo que la licencia de uso validada 36 permite de hecho el uso de la característica, tal componente 38 confiado luego recupera (PU(KD)) de tal licencia de uso 36 y aplica una clave privada correspondiente (PR) al mismo para revelar la clave de descifrado (KD) (paso 611), y tales claves de descifrado (KD) pueden aplicarse entonces de una manera apropiada para descifrar una parte apropiada de la aplicación 32 (paso 613). Después de esto, la característica pedida puede usarse (paso 615).

[0085] Como puede apreciarse, en algún punto el usuario después de haber obtenido la licencia de uso 36 puede decidir volver el mismo, por cualquiera de una variedad de razones. Críticamente, si el usuario se permite devolver la licencia de uso 36, tal usuario no le debe ser permitido retener una copia de tal licencia de uso 36. En concordancia, en una personalización de la invención presente, y volviéndose ahora a la Fig. 7, tal retorno es efectuado por vía de una demanda al minorista 52 que incluye la licencia de producto correspondiente 36 como proporcionado para ello (paso 701). En la contestación, el minorista 52 retorna un ejecutable u ordena al dispositivo de cómputo del usuario 34 (paso 703), dónde el ejecutable / orden en el efecto anula la licencia de uso 36 del dispositivo de cómputo del usuario de una manera confiable. En particular, el componente confiable 38 en tal dispositivo de cómputo 34 ejecuta el ejecutable / la orden para anular la licencia de uso 36 del dispositivo de cómputo del usuario (paso 705), y luego envía un mensaje al minorista 52 que la anulación tuvo éxito (paso 707). Después de esto, el minorista 52 informa al licenciador 46 que la licencia de producto correspondiente 36 no es válida (paso 709), y el licenciador 46 nota el mismo en

una base de datos que cualquier solicitud futura para una licencia de uso 36 basada en tal licencia de producto 36 no es honrado.

[0086] Como también puede ser apreciado, y recordando que la licencia de uso 36 se ata a un dispositivo de cómputo particular 34 por vía de incluso un HWID de tal dispositivo de cómputo 34 en tal licencia de uso 36, será reconocido que el usuario puede desear transferir la licencia de uso 36 a otro dispositivo de cómputo 34 con un HWID diferente, de nuevo para cualquiera de una variedad de razones. Similar a antes de, si el usuario se permite transferir tal licencia de uso 36 de un primer dispositivo 34 a un segundo dispositivo 34, tal usuario no debe permitir retener una copia de tal licencia de uso 36 como atado al primer dispositivo 34. En concordancia, en una personalización de la invención presente, y retomando de nuevo a la Fig. 7, tal traslado es efectuado de una manera similar a un retorno. En particular, tal traslado es efectuado por vía de un requerimiento al licenciador 46 que incluye la licencia de producto correspondiente 36 como fue proporcionada por el minorista 52 (paso 701). En respuesta, el licenciador 46 ingresa un ejecutable u ordena al dispositivo de cómputo del usuario 34 (paso 703), dónde el ejecutable / la orden en efecto anula la licencia de uso 36 del dispositivo de cómputo del usuario de una manera confiada. De nuevo, el componente 38 confiado en tal dispositivo de cómputo 34 ejecuta el ejecutable / la orden para anular la licencia de uso 36 como fue emitida (paso 705), y entonces envía un mensaje al licenciador 46 de que la anulación tuvo éxito (paso 707).

[0087] Significativamente, en el contexto de un traslado, el licenciador 46 debe poder emitir otra licencia de uso 36 que corresponde a la licencia de producto 36, en este caso a un dispositivo de cómputo 34 diferente del usuario. De acuerdo con, el contexto de un traslado, el licenciador 46 nota que la licencia de producto correspondiente 36 puede emplearse de nuevo (paso

709), y cualquier demanda futura para una licencia de uso 36 basada en tal licencia de producto 36 de hecho es honrada.

[0088] En una personalización de la invención presente, un publicador 44 puede definir una licencia 36 por vía de un archivo de licencia o similar y entonces puede dar el archivo de la licencia a un minorista 52 para la venta. Además, el publicador 44 puede crear la copia base de la aplicación 32 y proporcionar al mismo distribuidor 54. El minorista 52 puede vender la licencia 36 entonces a un usuario y puede entregarla el mismo por vía de un licenciador 46 que opera una página Web o similar. La licencia 36 puede empaquetarse con información que apunta al usuario al distribuidor 54 si el usuario necesita obtener la aplicación 32 desde allí. La aplicación 32 puede empaquetarse con información que apunta al usuario al licenciador 46 si el usuario necesita obtener la licencia 36 desde allí. Así, un usuario en la posesión de la aplicación 32 puede encontrar el licenciador 46 para obtener una licencia 36, y un usuario en la posesión de la licencia 36 puede encontrar al distribuidor 54 para obtener la aplicación 32.

Conclusión

[0089] La programación necesaria para efectuar los procesos realizados en relación con la invención presente es relativamente recto-adelante y deben estar claros a la programación pública relevante. En concordancia, tal programación no se ata a esto. Cualquier programación particular, entonces, puede ser empleada al efectuar la invención presente sin partir desde el espíritu y alcance de allí.

[0090] En la invención presente, una arquitectura de RM 30 se emplea al efectuar una arquitectura de licenciamiento 50 donde sólo una copia de una aplicación digital 32 necesita ser liberada con características disponibles

múltiples o ediciones tales que una licencia de uso particular 36 emitida a un usuario particular especifica cuáles características disponibles / edición pueden ser empleadas por el usuario. Además un publicador 44 de la aplicación 32 necesita liberar ediciones múltiples de la misma aplicación 32, y un usuario obteniendo una licencia de uso 36 puede seleccionar qué características disponibles múltiples / ediciones están para ser licenciadas.

[0091] Debe apreciarse que pudieran hacerse los cambios a las personalizaciones descritas arriba sin partir desde los conceptos de inventiva. Por consiguiente, debe entenderse que esta invención no se limita a las personalizaciones particulares descubiertas, pero se piensa que cubre las modificaciones dentro del espíritu y alcance de la invención presente como es definido por las demandas adjuntas.

REIVINDICACIONES

1. Un método de obtener una licencia para usar una aplicación en un dispositivo de cómputo, la aplicación incluye una pluralidad de características, el método comprende:

comprometer en una transacción con un minorista para obtener una licencia del producto que corresponde a la aplicación de tal minorista, la licencia del producto que define por lo menos una característica de la aplicación que puede emplearse basado en tal licencia del producto,;

obtener una copia base de la aplicación de un distribuidor y actuar tal aplicación; y

adquirir una licencia de uso que corresponde a la licencia del producto de un licenciador por vía de la aplicación actuada que envía la licencia del producto al licenciador junto con una identificación de por lo menos una de un usuario, el dispositivo de cómputo, y un componente confiado de operación sobre el dispositivo de cómputo, la licencia de uso

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incluyendo la política de la característica que concede derechos para emplear cada característica definida en la licencia del producto.

2. El método de la demanda 1 que comprende comprometer en una transacción con un minorista para obtener una licencia de producto que define por lo menos una característica de la aplicación como es ofrecida por el minorista y representando una edición disponible de la aplicación.

3. El método de la demanda 1 que comprende comprometer en una transacción con un minorista para obtener una licencia del producto que define por lo menos una característica de la aplicación como seleccionada por un obtentor de tal licencia de producto.

4. El método de la demanda 1 que comprende comprometer en una transacción con un minorista para obtener una licencia del producto empaquetado con la información de referencia incluyendo un distribuidor particular desde el cual la copia base de la aplicación es obtenida.

5. El método de la demanda 1 donde por lo menos una parte de la aplicación es posible cifrarla y descifrarla según una clave (KD), el método comprende adquirir una licencia de uso incluyendo una clave criptográfica de la clave de encriptación de identificación (KD), con que el componente confiado puede recuperar tal clave (KD) y emplear lo mismo para descifrar por lo menos una parte de la aplicación.

6. El método de la demanda 1 en donde el dispositivo de cómputo incluye un hardware ID (HWID) correspondiendo al dispositivo de cómputo 34, el método comprende adquirir una licencia de uso incluyendo el HWID, en donde el componente confiado puede recuperar tal HWID y emplear lo mismo para

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determinar que la licencia se piensa que es empleada en el dispositivo de cómputo que tiene tal HWID.

7. El método de la demanda 1 en qué por lo menos una parte de cada característica de aplicación se codifica y es descifrable según una clave (KD), el método comprende adquirir una licencia de uso incluyendo una clave criptográfica de identificación que codifica la clave (KD), el método más allá comprende:

- recibir una demanda para usar una característica particular de la aplicación;

- localizar la licencia de uso adquirida;

- determinar que la política de la característica localizada en la licencia de uso permite el uso requerido de la característica particular;

- recuperar la clave codificada (KD) de la licencia de uso localizada;

- descifrar la clave codificada (KD) y emplear lo mismo para descifrar por lo menos una parte de la característica particular de la aplicación; y

- usar la característica particular de la aplicación.

8. El método de la demanda 7 más allá comprende validar la licencia de uso localizada.

9. El método de la demanda 1 más allá comprende después de haber adquirido la licencia de uso que retornar la misma para reversar la transacción por que la licencia del producto fue obtenida, retomando tal licencia de uso incluyendo:

- enviar una demanda del retorno al minorista incluso la licencia del producto correspondiente como fue proporcionada por ello;

- recibir del minorista uno de un ejecutable y una orden que anula la licencia del uso del dispositivo de cómputo de una manera confiada;

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ejecutar el ejecutable / la orden para anular la licencia de uso y enviar un mensaje al minorista de que la anulación de la licencia de uso tuvo éxito; con que el minorista informa al licenciador que la licencia de producto no es válida y el licenciador nota lo mismo en una base de datos tal que cualquier demanda futura para una licencia de uso basada en la licencia del producto no es honrada.

10. El método de la demanda 1 en donde la licencia de uso adquirida se ata al dispositivo de cómputo, el método más allá comprende después de haber adquirido la licencia de uso retomando la mismo para adquirir otra licencia de uso atada a otro dispositivo de cómputo, retomando tal uso de licencia incluye:

enviar una demanda de traslado al licenciador incluyendo la licencia del producto correspondiente como fue proporcionada por el minorista;

recibir del licenciador un ejecutable y una orden que anula la licencia de uso del dispositivo de cómputo de una manera confiada;

ejecutar el ejecutable / la orden para anular la licencia de uso y enviar un mensaje al licenciador de que la anulación de la licencia de uso tuvo el éxito; en donde la licencia de producto permanece válida y el licenciador nota que la licencia de producto puede emplearse para obtener otra licencia de uso atada al otro dispositivo de cómputo.

11. Una aplicación para usarse en un dispositivo de cómputo y una licencia del uso para usar la aplicación, la aplicación teniendo una pluralidad de características y comprendiendo:

una parte de instancia para instanciar tal aplicación en el dispositivo concordante, la parte de la instancia siendo codificada y descifrable según una clave (KD); y

una pluralidad de partes de característica, cada parte de la característica corresponde a un característica,

la licencia de uso comprendiendo:

la política de la instanciación para determinar si la parte de la instanciación puede emplearse al iniciar la instancia de la aplicación;

la política de la característica para determinar si cada característica de la aplicación puede emplearse; y

la clave (KD) codificada y descifrable según una clave disponible a un componente confiado del dispositivo de cómputo,

en donde el componente confiado recupera tal clave (KD) de la licencia de uso si la política de instanciación de la licencia de uso determina que la parte de la instanciación puede emplearse de hecho al iniciar la instancia de la aplicación y emplear la recuperada (KD) para descifrar la parte de la instanciación, la parte de la instanciación descifrada empleándose para iniciar la instancia de la aplicación, y

en donde cada parte de la característica requiere como una condición precedente para el uso que el componente confiado determina que la política de la característica de la licencia de uso permite tal uso de tal parte de la característica.

12. La aplicación y la licencia de uso de la demanda 11 en donde el dispositivo de la cómputo incluye un hardware ID (HWID) correspondiendo al dispositivo de cómputo 34 y la licencia de uso incluye el HWID, con que el componente confiado puede recuperar tal HWID y emplear lo mismo para determinar que se piensa que la licencia es empleada en el dispositivo de cómputo que tiene tal HWID.

RESUMEN DEL DESCUBRIMIENTO

Una aplicación incluye una pluralidad de características. Una transacción está comprometida con un minorista para obtener una licencia del producto que corresponde a la aplicación. La licencia del producto por lo menos define una

característica de la aplicación que puede emplearse. Una copia base de la aplicación se obtiene de un distribuidor y se actúa. Una licencia de uso que corresponde a la licencia del producto es adquirida de un licenciador por vía de la aplicación actuada que envía la licencia del producto al licenciador junto con una identificación de por lo menos un usuario, el dispositivo de cómputo, y un componente confiado que operan en el dispositivo de cómputo dónde la licencia de uso incluye la política de la característica que concede derechos para emplear cada característica definida en la licencia de producto.

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Ambiente de Computo 100

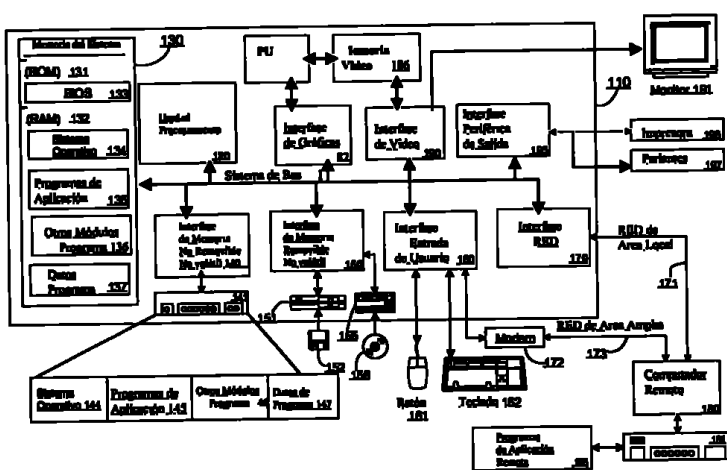


FIG 1

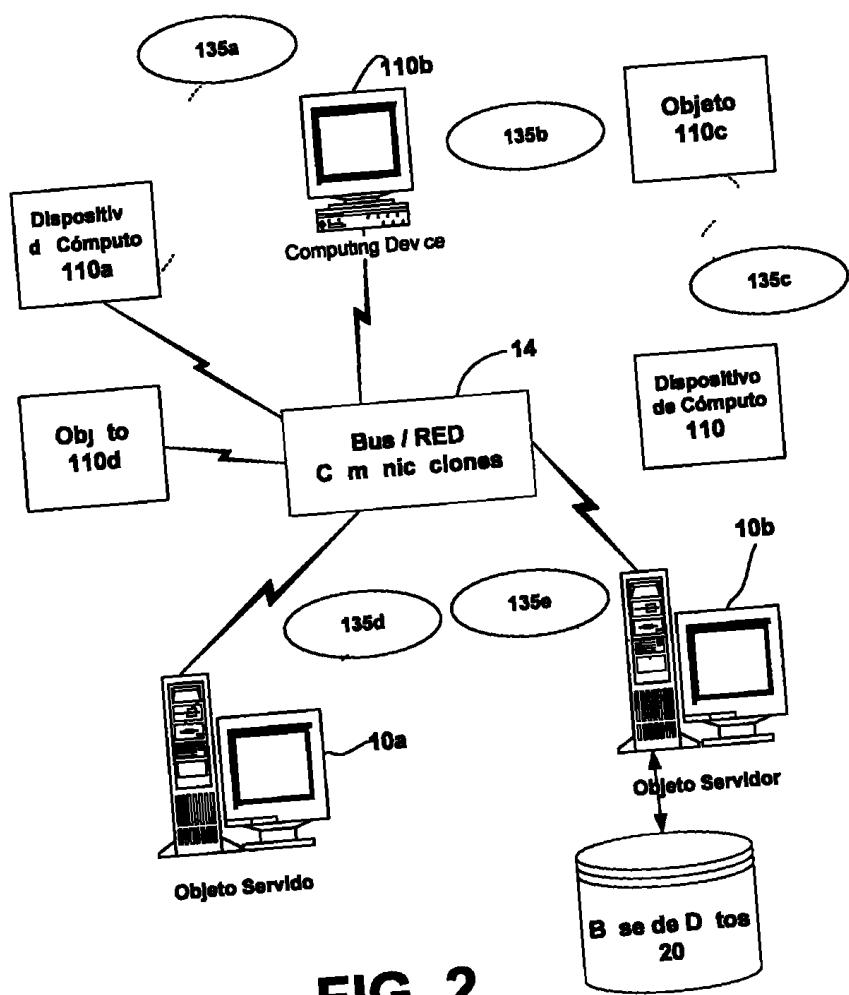


FIG 2

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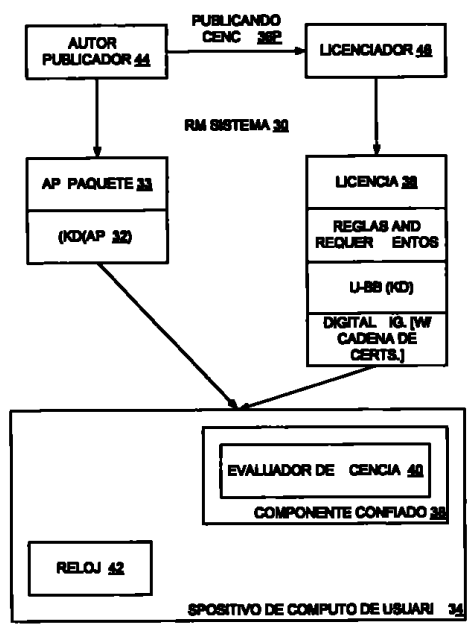


Fig 3

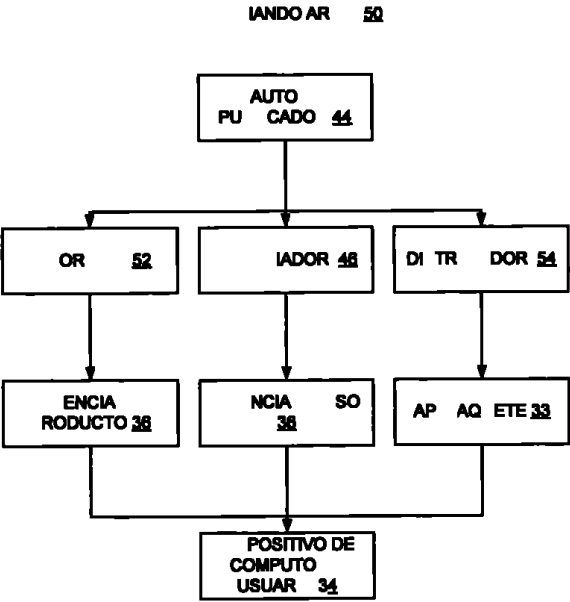


Fig 4

Fig 1

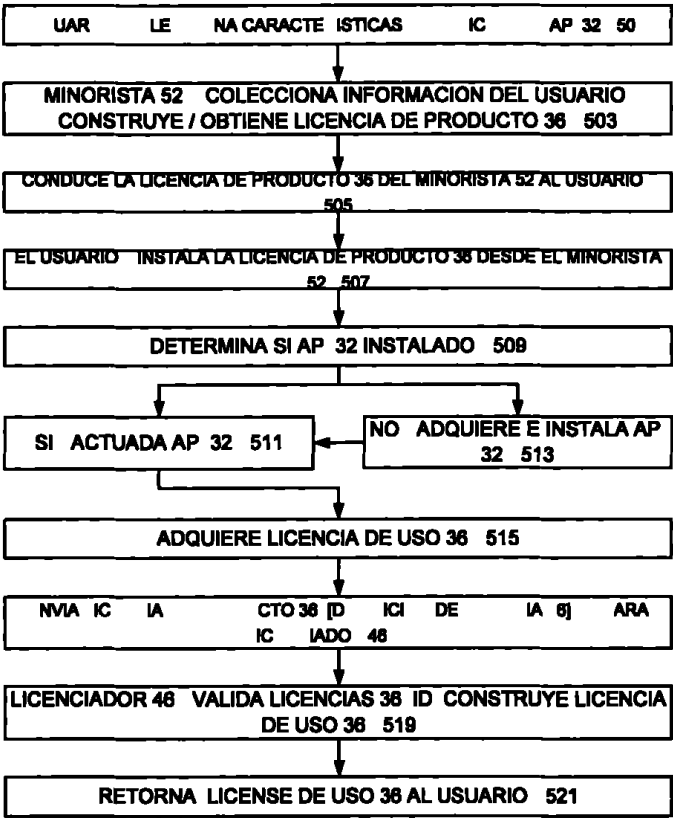


Fig 5

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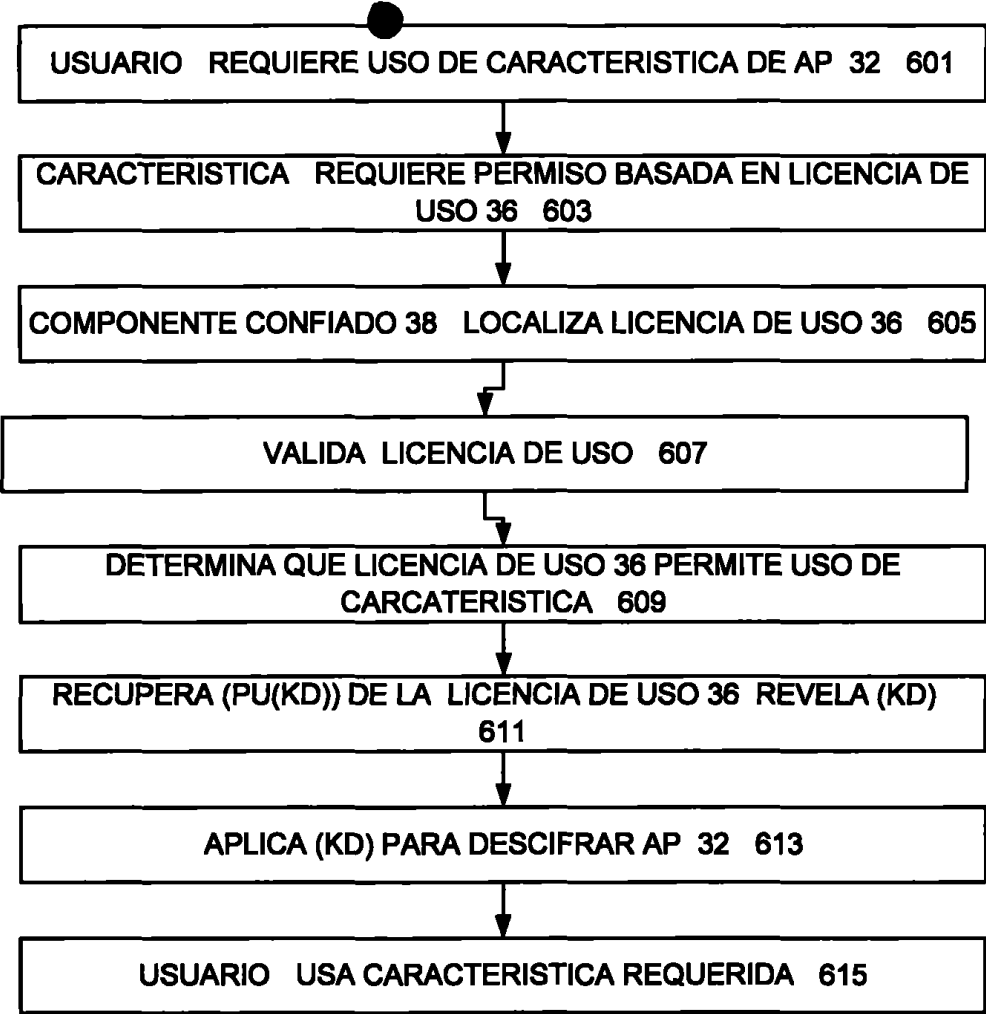


Fig 6

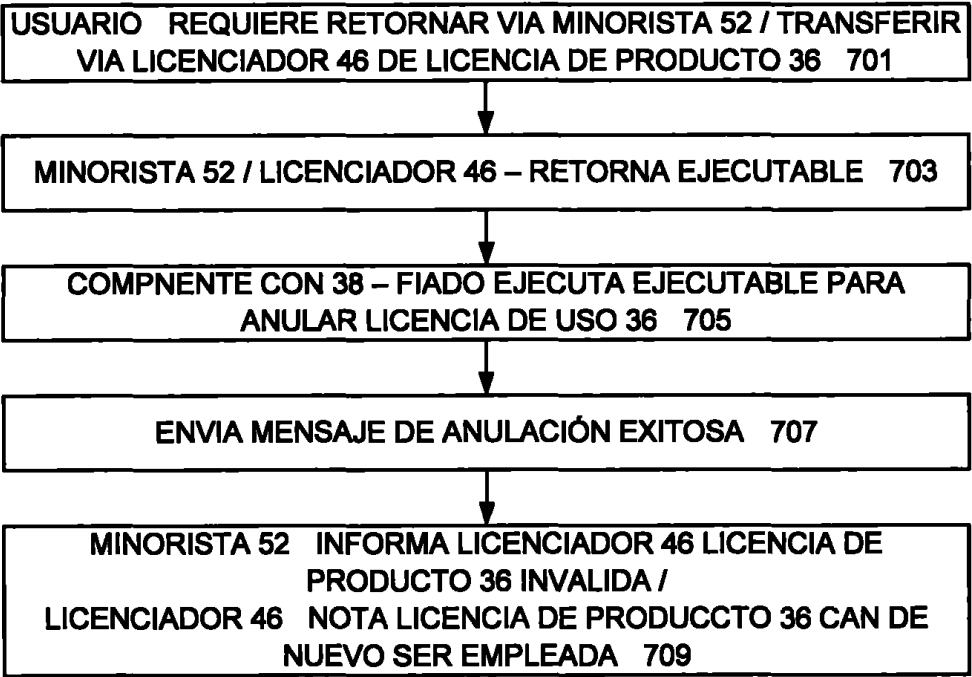


Fig 7

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Industria y Comercio
SUPERINTENDENCIA

SUPERINTENDENCIA Y COMERCIO

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Trámite : 002 PATENTES D 1 RESISIÓN/ 411 PRESENTAC.

Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

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Delegatura de Propiedad Industrial
División de Nuevas Creaciones

REQUISITOS NECESARIOS PARA PRESENTACIÓN Y AGILIZACIÓN DEL TRAMITE

PATENTE DE INVENCION (X)	MODELO DE UTILIDAD ()	USUARIO ()	RADICADOR ()
-Indicación de que se solicita la concesión de una patente.	()	()	(X)
-Datos de identificación del solicitante o de la persona que se presenta la solicitud.	()	()	(X)
-Descripción de la invención.	()	()	(X)
-Dibujos de ser estos pertinentes.	()	()	(X)
-Comprobante de Pago de las tasas establecidas.	()	()	(X)
COMPLETA (X)	INCOMPLETA ()	()	()
DISEÑO INDUSTRIAL ()			
-Indicación de que se solicita el registro de Diseño Industrial.	()	()	()
-Datos de identificación del solicitante o de la persona que se presenta la solicitud.	()	()	()
-Representación gráfica y fotográfica del Diseño Industrial o muestra del Material que incorpora el diseño.	()	()	()
-Comprobante de Pago de las tasas establecidas.	()	()	()
COMPLETA ()	INCOMPLETA ()	()	()
ESQUEMA DE TRAZADO ()			
-Indicación de que se solicita el registro de Diseño Industrial.	()	()	()
-Datos de identificación del solicitante o de la persona que se presenta la solicitud.	()	()	()
-Representación gráfica del Esquema Trazado.	()	()	()
-Comprobante de Pago de las tasas establecidas.	()	()	()
COMPLETA ()	INCOMPLETA ()	()	()

Firma Responsable:

Fecha:

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REPUBLICA DE COLOMBIA
SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

Bogotá,
2020

Doctor(a)
CARDENAS NAVAS DARIO
Apoderado(a) y/o Representante de
MICROSOFT CORPORATION

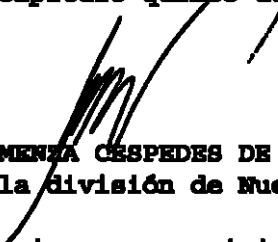
REFERENCIA Radicación No. 6 7684
Trámite 2
Evento 1
Actuación 430
Oficio No. 2112

Como resultado del examen de forma, realizado con fundamento en el artículo 38 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica que:

1. Debe allegar copia del documento en que consta la cesión del derecho a la patente otorgado por el(los) inventor(s) al(los) solicitante(s) o a su(s) causante(s) (art. 26-k, Dec 486/2000).
2. Para efectos de la publicación en la gaceta se recomienda allegar el extracto diligenciado.

En cumplimiento del artículo 39 de la Decisión 486, se le requiere para que dentro del término de dos (2) meses siguientes a la fecha de notificación del presente oficio, complete los requisitos anteriormente enunciados. En caso de no dar cumplimiento al presente requerimiento, la solicitud se considerará abandonada y perderá su prelación.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Unica No.10 de 2001.


ALIX CARMENZA CESPEDES DE VERGEL
Jefe de la División de Nuevas Creaciones

El anterior requerimiento fue notificado por fijación en lista de fecha 23 FEB. 2006
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Se recuerda al interesado que debe presentar, dentro de los dieciséis meses siguientes contados a partir de la fecha de presentación de la solicitud cuya prioridad se invoca, copia de la misma certificada por la autoridad que la expidió y, en los casos en que haya lugar, la traducción simple del capítulo reivindicatorio. El incumplimiento de este plazo, acarreará la pérdida de la prioridad invocada.