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(54) **METHOD AND APPARATUS FOR LICENSE DISTRIBUTION**

(75) Inventor: **David L. Chavez**, Thornton, CO (US)

Correspondence Address:
SHERIDAN ROSS PC
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

(73) Assignee: **Avaya Technology Corp.**, Basking Ridge, NJ

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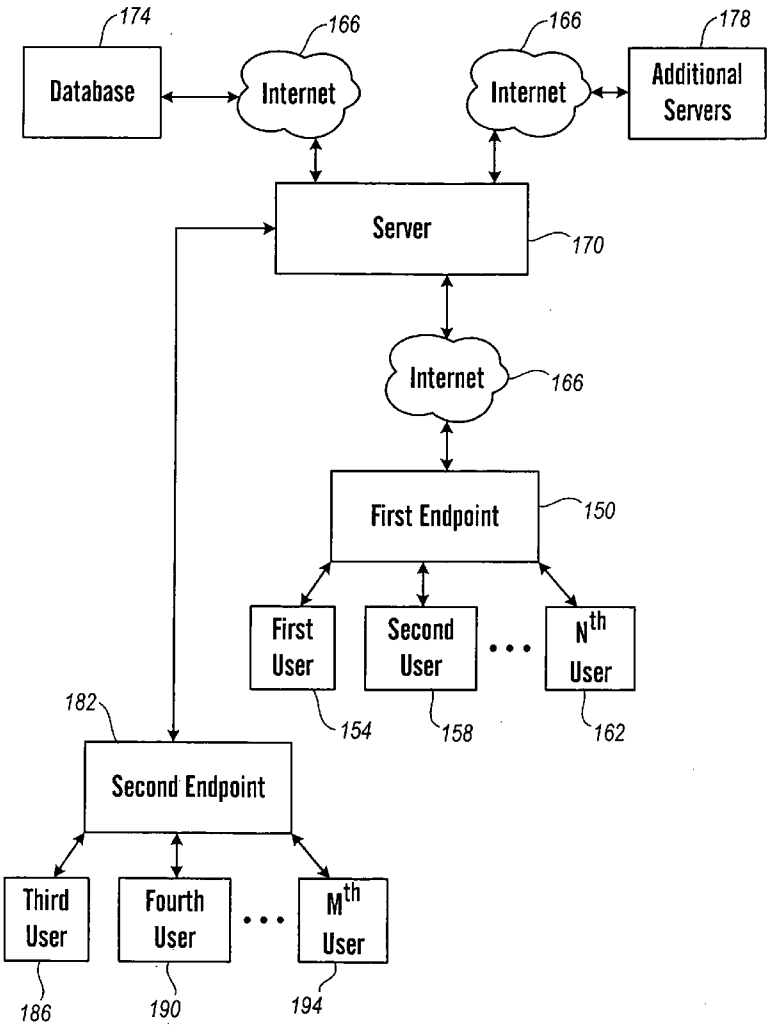
(57) **ABSTRACT**

A method and apparatus for license distribution are disclosed. An endpoint requests information from a server related to information required for the server to grant a license. The server provides the required information to the endpoint. The endpoint obtains the required information, and forwards the information to the server. The server, upon receiving the information, determines if a license may be granted to the endpoint, and transmits a license authorization to the endpoint, which includes the number of licenses which are granted.



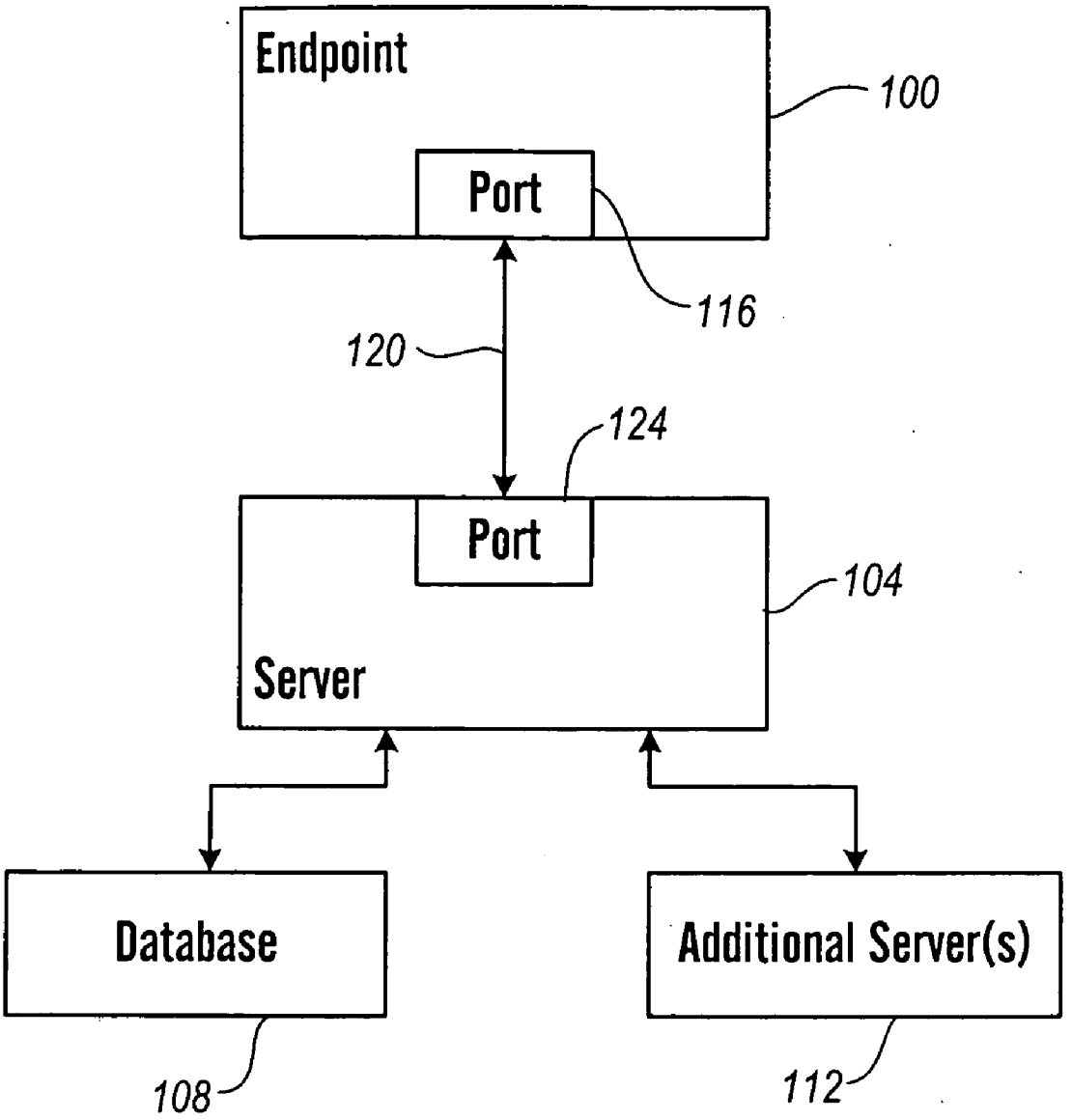

Endpoint
100
Port
116
120
124
Port
104
Server
Database
Additional Server(s)
108
112

FIG. 1

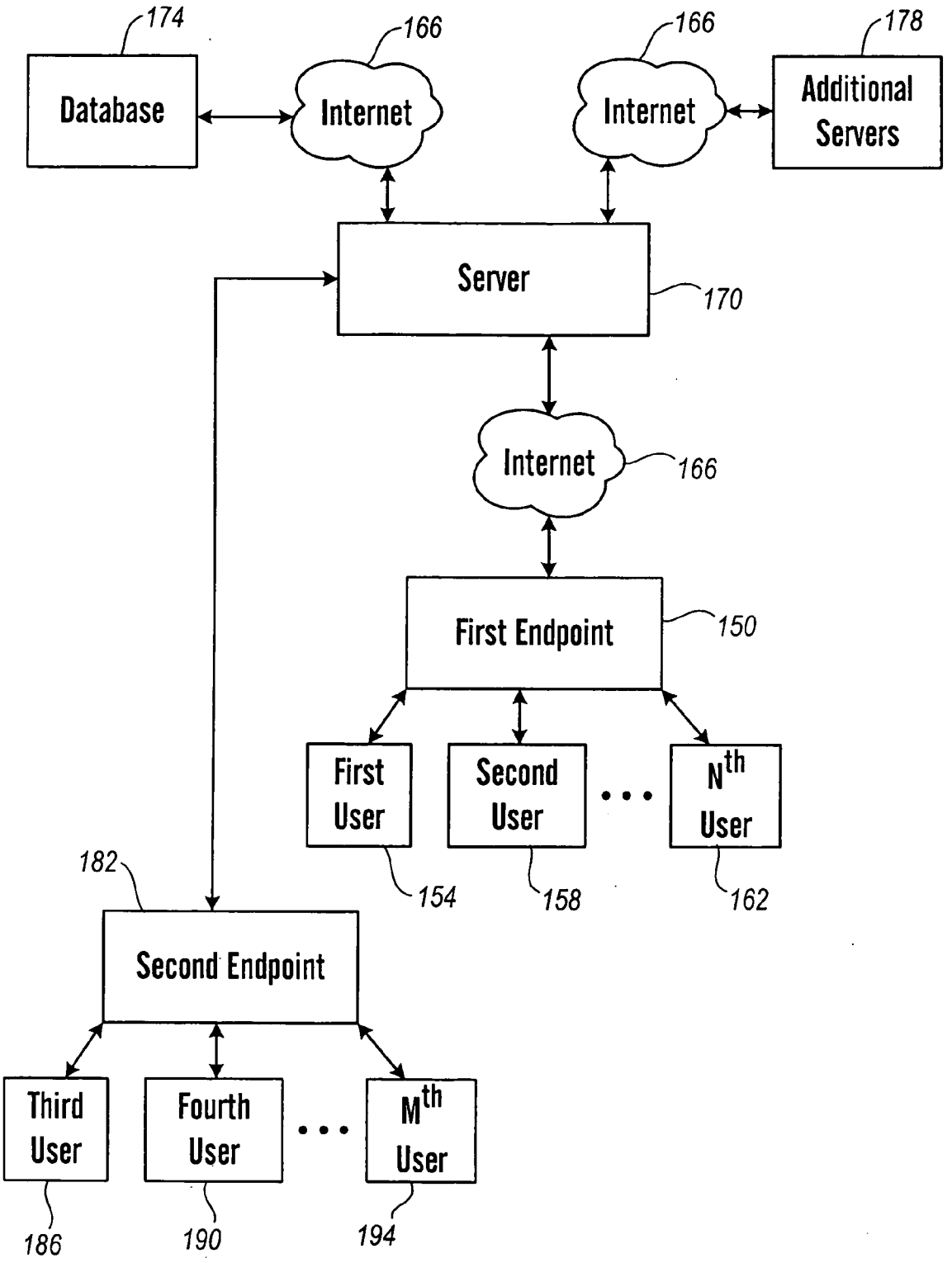

174
Database
166
Internet
166
Internet
178
Additional Servers
Server
170
Internet
166
First Endpoint
150
First User
Second User
Nth User
154
158
162
182
Second Endpoint
Third User
Fourth User
Mth User
186
190
194

FIG. 2

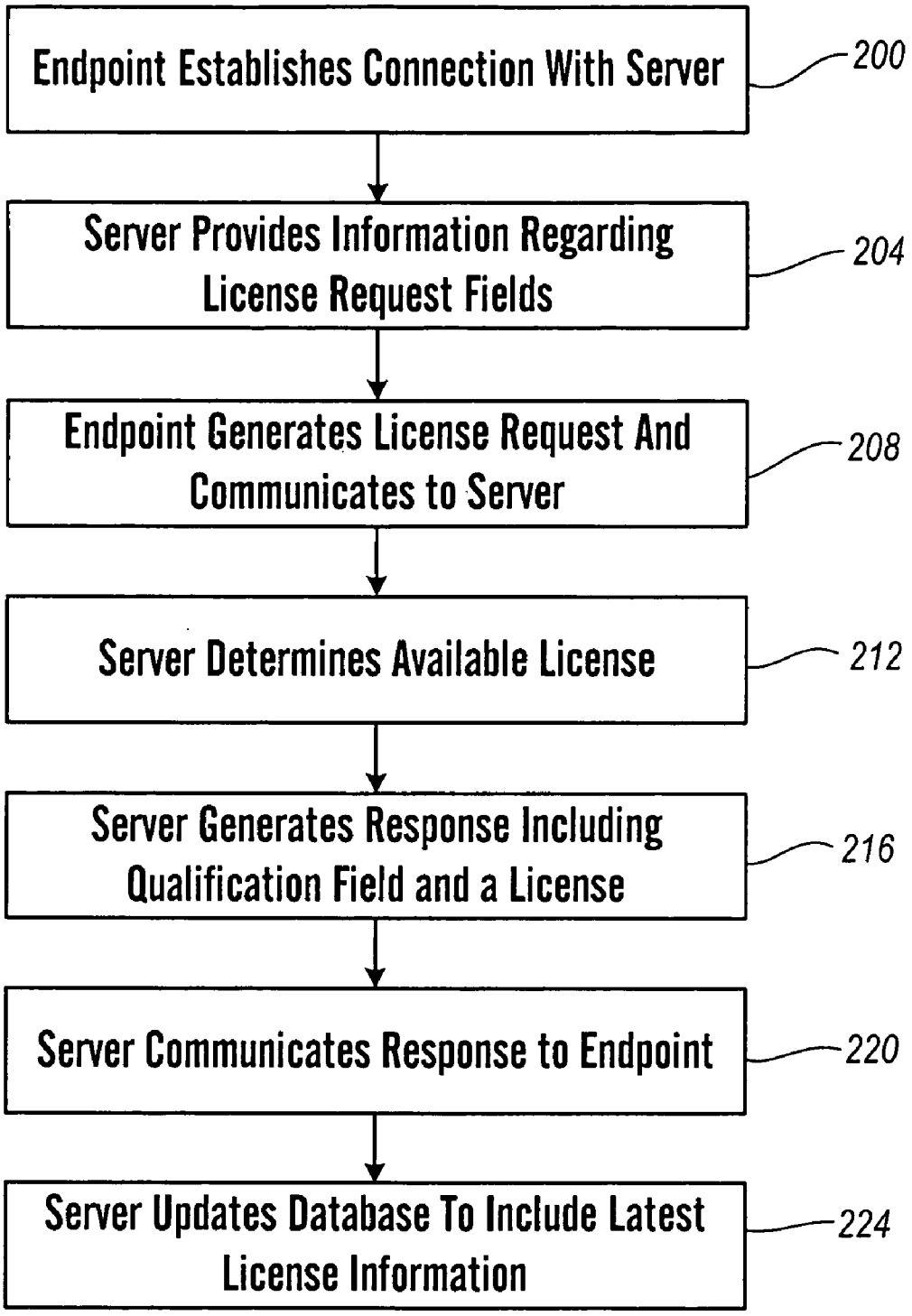

Endpoint Establishes Connection With Server
200
Server Provides Information Regarding License Request Fields
204
Endpoint Generates License Request And Communicates to Server
208
Server Determines Available License
212
Server Generates Response Including Qualification Field and a License
216
Server Communicates Response to Endpoint
220
Server Updates Database To Include Latest License Information
224

FIG. 3

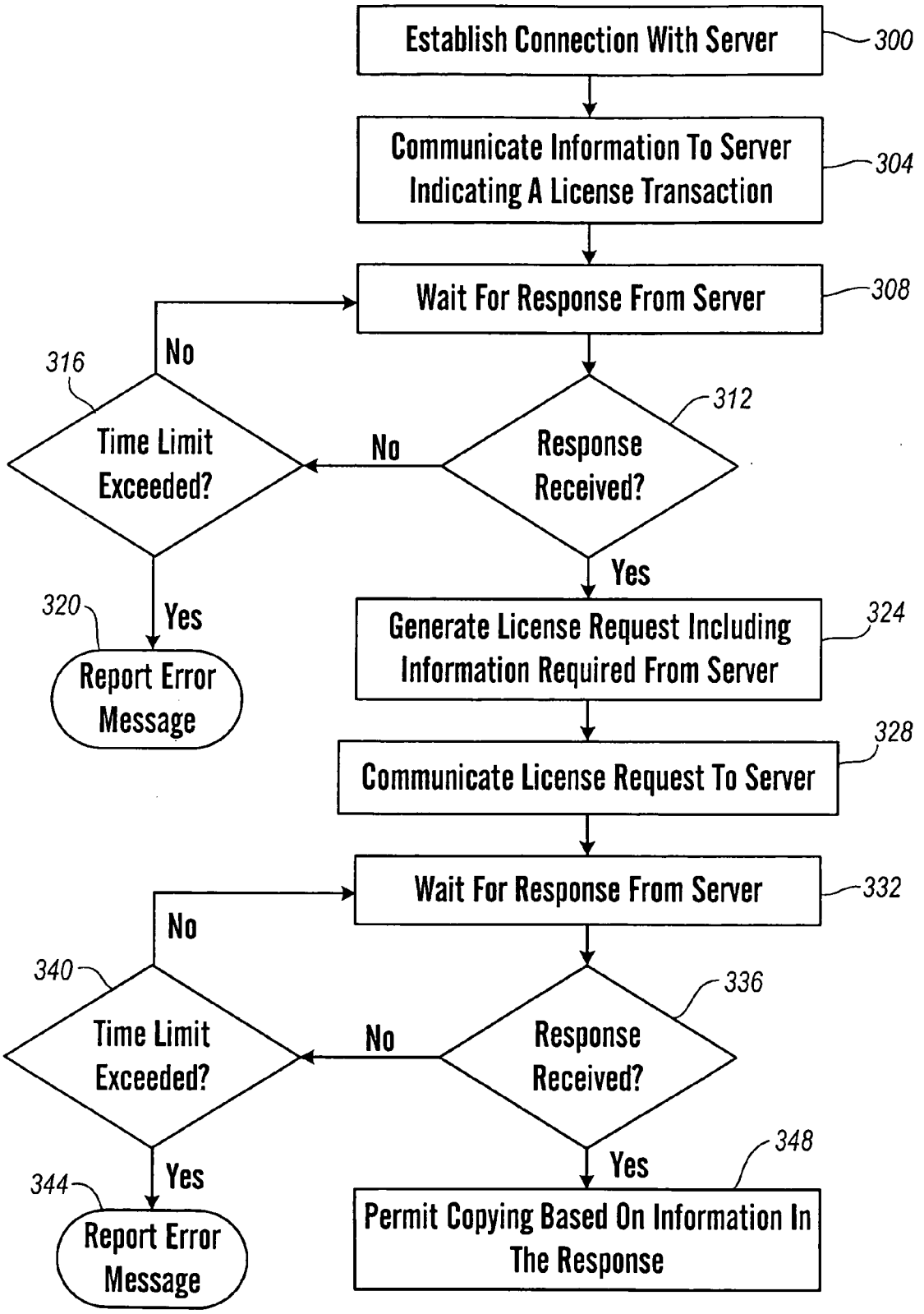
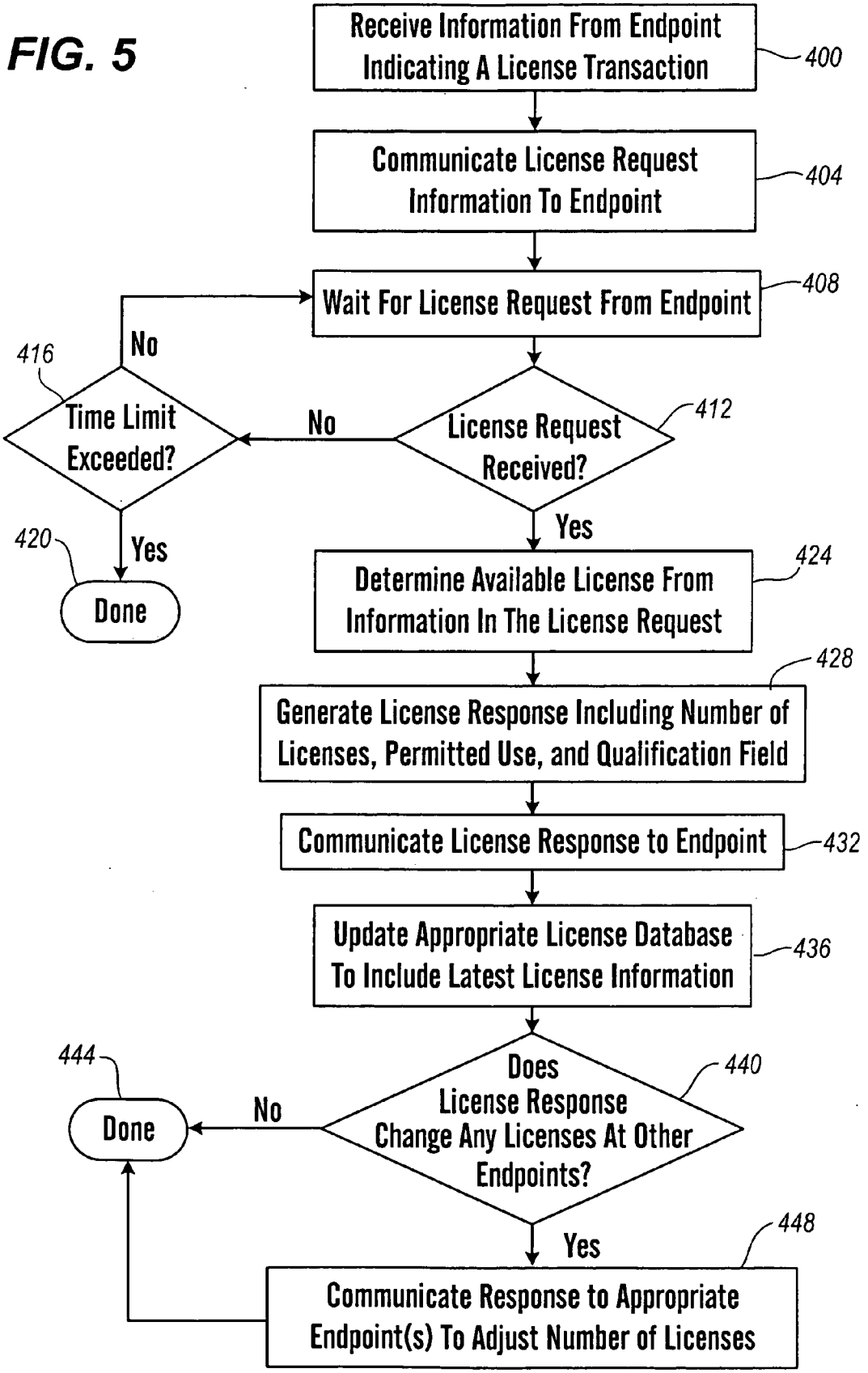

Establish Connection With Server
300
Communicate Information To Server Indicating A License Transaction
304
Wait For Response From Server
308
316
No
Time Limit Exceeded?
No
312
Response Received?
Yes
320
Yes
Report Error Message
Generate License Request Including Information Required From Server
324
Communicate License Request To Server
328
Wait For Response From Server
332
No
340
Time Limit Exceeded?
No
336
Response Received?
Yes
344
Yes
Report Error Message
348
Permit Copying Based On Information In The Response

FIG. 4

FIG. 5


Receive Information From Endpoint Indicating A License Transaction
400
Communicate License Request Information To Endpoint
404
Wait For License Request From Endpoint
408
License Request Received?
412
No
Time Limit Exceeded?
416
No
Yes
Done
420
Yes
Determine Available License From Information In The License Request
424
Generate License Response Including Number of Licenses, Permitted Use, and Qualification Field
428
Communicate License Response to Endpoint
432
Update Appropriate License Database To Include Latest License Information
436
Does License Response Change Any Licenses At Other Endpoints?
440
No
Done
444
Yes
Communicate Response to Appropriate Endpoint(s) To Adjust Number of Licenses
448

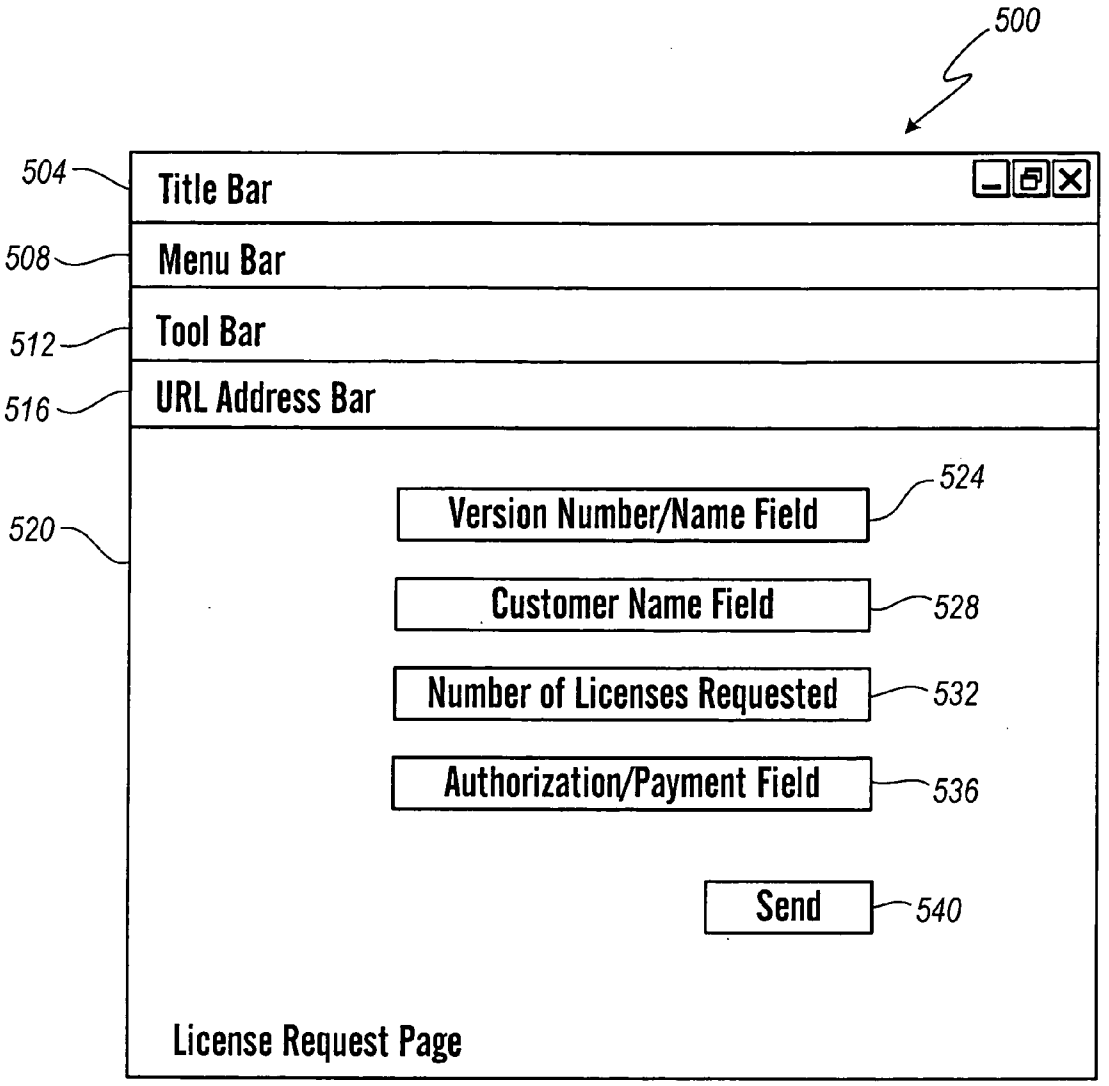

500
504
Title Bar
508
Menu Bar
512
Tool Bar
516
URL Address Bar
520
524
Version Number/Name Field
Customer Name Field
528
Number of Licenses Requested
532
Authorization/Payment Field
536
Send
540
License Request Page

FIG. 6

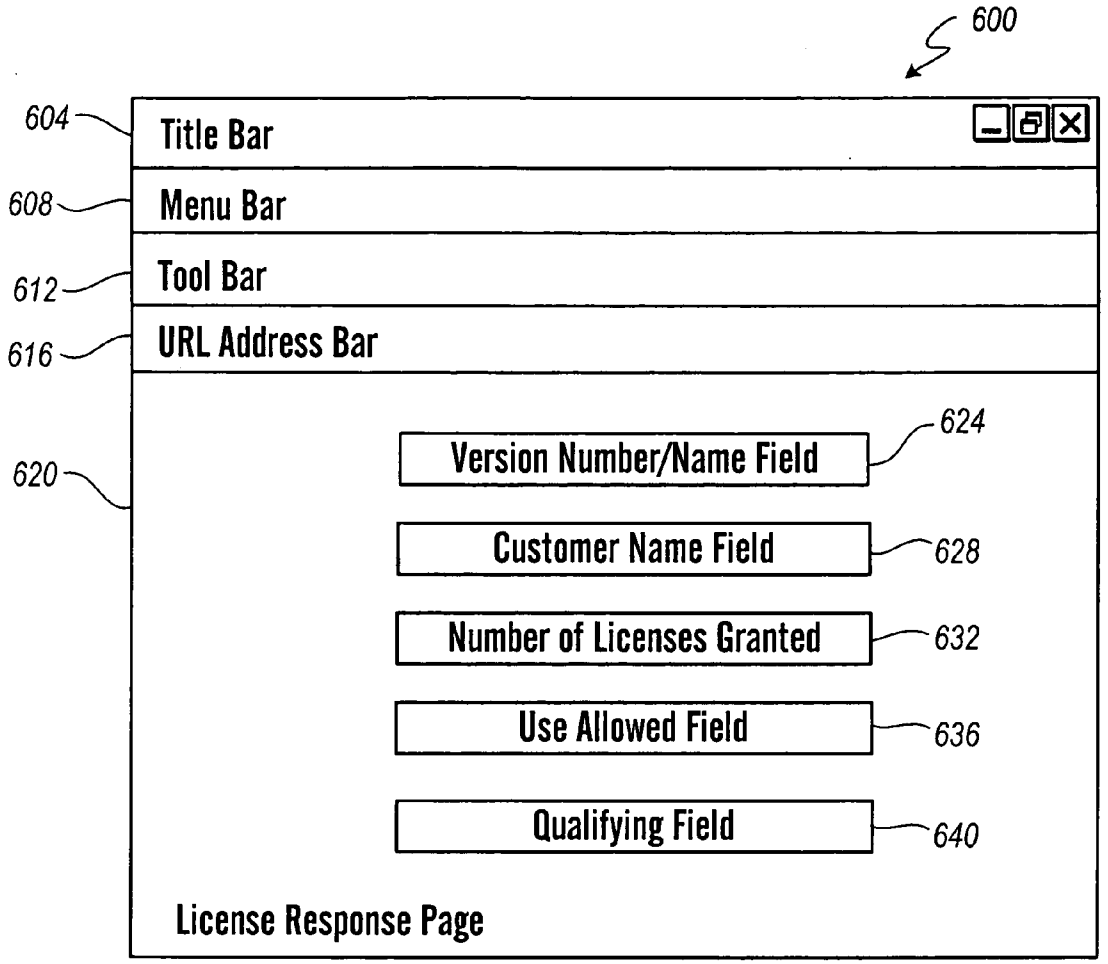

600
604
Title Bar
608
Menu Bar
612
Tool Bar
616
URL Address Bar
620
624
Version Number/Name Field
Customer Name Field
628
Number of Licenses Granted
632
Use Allowed Field
636
Qualifying Field
640
License Response Page

FIG. 7

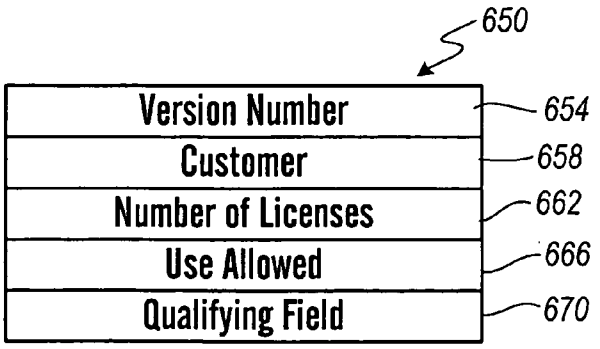

650
Version Number
654
Customer
658
Number of Licenses
662
Use Allowed
666
Qualifying Field
670

FIG.8

METHOD AND APPARATUS FOR LICENSE DISTRIBUTION

FIELD OF THE INVENTION

[0001] The present invention relates generally to the licensing and copy protection of software and video material, more specifically, to portability and distribution of enterprise wide licenses and licenses for copying of software and video material.

BACKGROUND OF THE INVENTION

[0002] To protect software manufacturers' intellectual property rights in software sold to the public, manufacturer's commonly license software to the purchaser. Additionally, in many applications the purchaser has purchased a large number of licenses, commonly referred to as rights to use (RTUs), which are used across many different sites in an enterprise. In particular, a customer may purchase a number of licenses for a release or version of a particular software package for a customer premise telecommunication switching system. Many times the customer also has an enterprise network which includes telecommunication switching systems located at several different sites. Rather than purchase licenses for each individual site, it is often more cost effective to purchase all of the licenses for all of the sites in a bulk package. The licenses may be used across various sites where different telecommunication switching systems are used. In certain instances a customer may need to change the number of licenses for particular sites. For example, a company may initially require 1000 licenses at site A, and 2000 licenses at site B. Due to personnel shifts, the company may later require 500 licenses at site A, and 2500 licenses at site B. Portability of licenses between different sites for an organization is known as "enterprise wide licensing" or "EWL." EWL may also be advantageous for balancing loads at different sites. For example, an enterprise may have three telecommunications switches and thirty total licenses which are initially distributed as ten licenses per switch. It may then be determined that one of the switches has a heavier volume than the other two, and it would be useful to have additional licenses at that site. In such a case, efficient EWL would be advantageous.

[0003] Traditionally, number of licenses available at a site, after the initial license distribution, had to be manually adjusted, which commonly involved contacting the software distributor and obtaining the adjustment of the licenses. This also typically required a technician from the software distributor to visit the sites to install files which allow for the adjusted number of licenses. Thus, it would be advantageous for such a customer to have portability of the licenses, allowing them to automatically adjust the number of licenses available for any given site without requiring the installation of separate files, and without requiring a service call from a technician. As is known, the number of licenses simply indicates the total number of copies of the software package which may be operated at a given time. Accordingly, the licenses control the number of copies of the software package which are available at any given time. Thus, the control of licenses may also be viewed as controlling the number of copies of a software package.

[0004] A similar type of problem is present in the high definition digital video content industry. In this case, a content provider which provides high definition digital content needs to limit the available copying of that digital content. Many content providers, such as broadcast television content providers, are required to allow for fair use copying, such as copying for time-shift purposes, but want to limit other copying. This problem is particularly important for devices which are able to digitally record the digital content. In such cases, there is no deterioration in quality for the copy, and additional copies may be made with no deterioration. Accordingly, there is a large piracy concern for such digital content communication.

[0005] Traditionally, two schemes have been commonly used to protect content providers from unauthorized copying. One scheme, known as Macrovision™, provides an inherent instability within the picture. When the picture goes through an analog conversion, the instability becomes apparent, degrading the picture. However, this scheme only works if the copying is performed using an analog conversion. As digital recording technology advances, digital recording mediums and hardware to record digitally are become more common. Thus, this scheme will not be effective against copying which is performed using a digital recording medium.

[0006] A second scheme is a software restriction on digital transfer of high definition picture. One such method is known as 1080i, which is a digital transmission format defined by the Advanced Television Systems Committee. Embedded in the 1080i digital transmission is an identified transmission quality of picture. This embedded digital encoding is picked up at the receiver, which determines if the transmission is copy protected. While this method can be effective in allowing copying or not allowing copying, it is not flexible with respect to the amount of copying allowed for certain content. For example, in many cases a content provider may need to allow copies of certain content for fair use time-shift purposes. Using this method, if copying of the content is allowed, additional copies may be made following the recording of the original copy. Accordingly, it would be useful to have a system which would allow a single fair use copy, or limited fair use copies, to be made of such content, and limit any additional copies which are made of the content.

[0007] Another method to limit copying of content is known as IEEE1394 or "Firewire." If picture is copy encoded, it is trusted that the receiver will not allow a copy to be made. If the receiver is an original source (i.e. a personal video recorder or "PVR"), a limit on the copies may be given. However, a drawback of this method is that pirates can defeat the digital copy encoding in a relatively simple manner, by locating the information containing the permitted copying information and altering this information to allow for unlimited copies. For example, if a Digital Video Disk (DVD) contains information related to permissible copying of the digital content, a pirate may locate the area on the surface of the disk which contains this information. The pirate may then alter that area such that the information cannot be read, which results in copies being able to be made.

[0008] In order to attempt to limit unauthorized copying, content providers may also encrypt the signal. In such a case, the pirate may also defeat the encryption. While encryption is somewhat effective, it requires that encryption keys be

distributed in a secure manner. Decoding the encryption also degrades the performance of a video system, and can potentially cause a fault if there is an error in the decryption. Thus, it would be advantageous to provide a method for copy protection which does not rely on copy encoding data in the digital content, and does not require encryption.

[0009] Another method for limiting copying of digital content is a failed technology known as DIVX. This technology required a digital player which contacted, via a telephone connection, a center which granted permission to view the digital content. This technology was not successful and raised a number of privacy concerns, as people did not want it to be recorded every time they viewed a movie. Furthermore, permission was required from the authorization source any time the product was viewed. Thus, unlimited copies of the digital content could be made, and the content only viewed upon the grant of permission by the authorization center. This had the effect of removing any incentive for a producer to make any copies of such content, because the content could be copied freely, and an end user would simply pay when the content was actually viewed. Thus, it would be advantageous to provide a copy protection system which maintains incentive for producers to manufacture copies of digital content.

[0010] Another problem area in software and digital content distribution may occur following the distribution of the software or some digital content. Following this distribution, it may be determined that the software or digital content violates a law or some rights of another owner. In the event that such a situation arises, it would be advantageous to limit the amount of additional copying which may be done for the software or digital content. For example, a first customer may purchase 10,000 licenses for telecommunications switching software and divide the number of licenses between two sites, with each site receiving 5000 licenses. The license purchase agreement may specify that the customer is to pay the software distributor an amount of $10,000 per month for one year. If the customer then fails to pay the software distributor, it would be advantageous to provide a solution which does not allow the customer to move copies of the software between the sites. Thus, if the customer in this example, after failing to pay the license fee, wishes to move 1,000 licenses from the first site to the second site, it would be useful to the software distributor to be able to deny the movement of the licenses until proper payment is made. Similarly, if a digital content provider determines that the content which is distributed violates an intellectual property right, it would be useful for the content provider to deny any additional copies of the content from being made. For example, a content provider may distribute a movie in digital format, and later discover that a scene in the movie contains a copyrighted image which the copyright owner demands not be reproduced. In such a case, if the content provider cannot resolve the dispute with the copyright owner, it would be useful to deny that any additional copies of the content be made, thus limiting the amount of damages to the copyright owner.

[0011] Accordingly, it would be advantageous to have a mechanism which provides copy protection for software and digital content while not inhibiting authorized use. It would also be advantageous for the mechanism to not require encryption, and which also does not require transmission of information every time a customer views the content.

SUMMARY OF THE INVENTION

[0012] These and other needs are addressed by the various embodiments and configurations of the present invention. The invention provides a method and apparatus for license distribution. An endpoint requests information from a server related to information required for the server to grant a license. The server provides the information to the endpoint. The endpoint obtains the required information, and forwards the information to the server. The server, upon receiving the information, determines if a license may be granted to the endpoint, and transmits a license authorization to the endpoint, which includes the number of licenses which are granted.

[0013] In accordance with one embodiment, a method for transferring a license in an enterprise network is provided. The method includes allocating a first number of licenses to a first site, and allocating a second number of licenses to a second site, the first and second sites being geographically dislocated from each other. A license reallocation request is received, and at least one of a third number of licenses for the first site and a fourth number of licenses for the second site is determined, without input from a user. A first response is communicated to the first site which includes the third number of licenses, and a second response is communicated to the second site which includes the fourth number of licenses. Following the response steps, the first and second sites are operated subject to the first site being entitled to the third number of licenses and the second site being entitled to the fourth number of licenses.

[0014] The method of this embodiment may also include updating a record indicating the third and fourth number of licenses allocated to the first and second sites, respectively. The record may be updated by accessing a database containing license records, and updating the records to indicate the third and fourth number of licenses allocated to said first and second sites, respectively. The database is accessed, in one embodiment, by establishing communication with a server, and accessing the database on the server which contains said license allocation records.

[0015] When making the determination of the third and fourth number of licenses the method, in one embodiment, includes calculating a difference between the first number and a requested number of licenses in the reallocation request, determining an additional number of licenses required for the first site based on the calculated difference, determining the third number of licenses as the sum of the first number and the additional number of licenses, and determining the fourth number by subtracting the additional number of licenses from the second number. In another embodiment, the determination includes accessing a database containing license allocation records to determine the first number and the second number, calculating a difference between the first number and the requested number of licenses in the reallocation request, determining an additional number of licenses required for the first site based on the calculated difference, and determining the fourth number by subtracting the additional number of licenses from the second number. When accessing the database, in one embodiment, a server is accessed by establishing communication with the server, and the database on the server is accessed to obtain the license allocation records.

[0016] The first response, in one embodiment, includes a number of fields, including a version number field, a cus-

tomer name field, a number of licenses granted field, a use allowed field, and a qualifying field. The license reallocation request may also include a number of fields, including a version number field, a customer name field, a number of licenses requested field, and an authorization field.

[0017] The receiving and communicating may be performed using a number of protocols, including hypertext transfer protocol (http), and hypertext transfer protocol over secure socket layer (https).

[0018] The present invention also includes, in an embodiment, a method for copying digital content by a digital content server. The method includes the steps of displaying digital content, and receiving from a user a request to copy the digital content. Upon receiving the request, a server is accessed, with the server being geographically dislocated from the digital content receiver. The digital content receiver receives, from the server, a request for license information related to requirements for granting a license to copy digital content. The requested license information is determined, and communicated to the server. A copy license is received from the server, with the license including a number of copies which are authorized to be made. A copy of the digital content is generated when the number of copies included in the license is greater than zero. In one embodiment, the digital content receiver has no limitations regarding the viewing of the digital content. The requested license information, in one embodiment, includes several information fields including a content name field, a customer name field, a number of copies requested field, and a payment field. The payment field may include a requirement for credit card information. In one embodiment, the copy license includes a number of information fields, including a content name field, a customer name field, a number of licenses granted field, a use allowed field, and a qualifying field. The qualifying field may include authentication information, and/or a decryption key. In one embodiment, communication to and from the server is performed using hypertext transfer protocol or hypertext transfer protocol over secure socket layer. The copy is generated, in one embodiment, by verifying that the number of copies is greater than zero, verifying that a valid qualifying field is present, generating a copy of the digital content, and decrementing the number of copies.

[0019] The present invention includes, in another embodiment, a method for granting a license to copy digital content. The method includes the steps of, receiving, from a digital content receiver, a request for license information fields; communicating the license information fields to the digital content receiver over a network connection; receiving license information from the digital content recorder over the network connection; determining the availability of a copy license based on the license information; and communicating a license, including a number of copies which the digital content receiver is authorized to make, to the digital content receiver over the network connection. In one embodiment, the determining step includes verifying copy license availability for a content title requested to be copied, verifying proper payment, and determining the number of copies based on the payment and copy license availability. In another embodiment, the determining step includes accessing a database containing copy license permissions to determine if copy licenses are available for the requested digital content, verifying proper payment, and determining the number of copies based on the payment and copy license availability. The database may be accessed by establishing communication with a server, and accessing a database on the server which contains the copy license availability. The license information fields may include a number of fields, including a content name field, a customer name field, a number of licenses requested field, and a payment field. The copy license may include a number of fields, including a content name field, a customer name field, a number of licenses granted field, a use allowed field, and a qualifying field. The qualifying may contain authentication information and/or a decryption key. The receiving and communicating steps in one embodiment, are performed using hypertext transfer protocol, or hypertext transfer protocol over secure socket layer.

[0020] These and other advantages and features of the invention will become apparent from the following description of the invention taken together with the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021] **FIG. 1** is a block diagram illustration of a copy protection system of one embodiment of the present invention;

[0022] **FIG. 2** is a block diagram illustration of one embodiment of a system of the present invention having multiple end users at an endpoint, and which utilizes the Internet for communications;

[0023] **FIG. 3** is a flow chart diagram illustrating the general operational steps for license distribution between a server and an endpoint for one embodiment of the present invention;

[0024] **FIG. 4** is a flow chart diagram illustrating the operational steps performed by an endpoint for one embodiment of the present invention;

[0025] **FIG. 5** is a flow chart diagram illustrating the operational steps performed by a server for one embodiment of the present invention;

[0026] **FIG. 6** is an illustration of a screen shot of a license request page of one embodiment of the present invention;

[0027] **FIG. 7** is an illustration of a screen shot of a license response page of one embodiment of the present invention; and

[0028] **FIG. 8** is a block diagram illustration of the license structure of one embodiment of the present invention.

DETAILED DESCRIPTION

[0029] Referring first to **FIG. 1**, a block diagram illustration of a copy protection system of one embodiment of the present invention is described. An endpoint **100** is in communication with a server **104**. The endpoint **100** may be an individual site for an enterprise software customer, and the endpoint **100** may likewise be a piece of equipment capable of recording digital content. The server **104** may be associated with a software distributor or a content provider. The server **104** communicates with a database **108**, and additional server(s) **112** as may be required. The endpoint **100** may communicate with the server **104** in any of a number of ways. In the embodiment of **FIG. 1**, the endpoint **100** has a port **116** which communicates over a network connection **120** to a port **124** in the server. The network connection **120**

may be any number of well known connections. For example, the network connection **120** may include the Internet. In this case, the endpoint port **116**, and the server port **124**, include Internet connections, and the network connection **120** is the Internet. The network connection **120** may also be a telephone connection, with the ports **116**, **124** being modems. Furthermore, the endpoint **100** and server **104** may be components of a LAN, in which case the network connection **120** would be a standard LAN connection. In another embodiment, the endpoint **100** is a personal computer which is used to access the server **104** through an Internet connection. A user at the personal computer access a web page from the server **104**, and enters information in order to obtain access codes which will allow for a license transfer.

[**0030**] **FIG. 2** is a block diagram illustration of one embodiment of a system of the present invention having multiple end users at an endpoint, and which utilizes the Internet for communications. In this embodiment, a first endpoint **150** has a number of users, including a first user **154**, a second user **158**, and additional users up to and including an Nth user **162**. The first endpoint **150** connects to the Internet **166**, and communicates with a server **170**. Similar to the system described with respect to **FIG. 1**, the server **170** may communicate with a database **174** and additional servers **178**. In the embodiment illustrated in **FIG. 2**, the server **170** communicates with the database **174** and additional servers **178** through the Internet **166**. The system also has a second endpoint **182**, which has a number of users including a third user **186**, a fourth user **190**, and additional users up to and including an Mth user. **194**. The second endpoint **182** also communicates with the server **170** through the Internet **166**. The first endpoint **150** and second endpoint **182** in this embodiment may, for example, represent telecommunications switches, which may be owned and operated by a single enterprise customer in an enterprise network. The enterprise network may be a switch based network, a server based network, or other type of network which allows communication between components and sites within the enterprise network.

[**0031**] The enterprise customer may have purchased a block of licenses which activate certain features in the first and second endpoints **150**, **182**. The total number of combined users at the endpoints **170**, **182** is then limited to the total number of licenses purchased by the enterprise customer. As mentioned above, in certain instances the enterprise customer may need to transfer some or all of the licenses from the first endpoint **150** to the second endpoint **182**, in order to enable the second endpoint **182** to support more users. In this embodiment, the server **170** may be accessed by the second endpoint **182** which requests a transfer of licenses from the first endpoint **150** to the second endpoint **182**. Likewise, the server **170** may be accessed by the first endpoint **150** to request licenses be transferred to the second endpoint **182**.

[**0032**] The server **170**, in one embodiment, is operated by the manufacturer of the endpoints who also distributes the licenses allowing the end users to access features or software located at the endpoints. In another embodiment, the server **170** is operated by an distributor of telecommunications switches, who supplies switches to various customers. The distributor may have purchased a number of switches from the switch manufacturer, and a number of licenses from the switch manufacturer, which the distributor allocates to the different customers. In this embodiment, the customer may access the server **170** and request additional licenses from the distributor.

[**0033**] The server **170** determines availability of licenses, and communicates information to the endpoints **150**, **182** which may adjust the number of available licenses at the endpoints **150**, **182**, thus changing the total number of licenses available for the users connected to each endpoint **150**, **182**. The communications between the endpoints **150**, **182** and server **170** will be described in more detail below.

[**0034**] Referring now to **FIG. 3**, a flow chart diagram illustrating the general operational steps for license distribution between a server and an endpoint for one embodiment of the present invention is described. Initially, as noted by block **200**, the endpoint establishes a connection with the server. When establishing this connection, the endpoint, in one embodiment, accesses the server using an Internet connection and an http or https protocol. However, numerous other connections may be used to connect the endpoint and server, such as telephone, LAN, wireless, instant messaging, and cellular, among others as will be readily understood by one of skill in the art. Likewise, any communication protocol may be used, including proprietary protocols. When the endpoint establishes the connection with the server, the server provides information regarding license request fields, as noted at block **204**. The endpoint receives this information, and populates the license request fields with the relevant information to generate a license request which is communicated to the server, according to block **208**. The license request may have any of a number of structures, as will be described in more detail below.

[**0035**] The server receives the license request, and parses the information contained therein to determine the information in each of the license request fields, and determines the available license which may be provided to the endpoint, as noted by block **212**. At block **216**, the server generates a response which includes a qualification field and a license. The license may be a limited license, such as, for example, a one time copy license for digital content. The license may also be a software license which is then transferred from a first site within an enterprise to a second site within the enterprise. The second site would then have an additional license, and the first site would have one fewer licenses. In such a situation, the license request may also be for any number of licenses, allowing multiple software RTU licenses to be transferred between sites at any given time. The qualification field may be a separate field which is required by the software in order to enable the software. The qualification field may also be a decryption key which the endpoint may use to decrypt an encrypted signal which will enable to endpoint to copy content.

[**0036**] According to block **220**, the server communicates the response to the endpoint, thus granting the license. The server then updates a database to include the latest license information, as noted by block **224**. If there is an access failure at any point, the server can report the same result back to the endpoint following a license request which has the same information in the different fields. The endpoint may be a piece of hardware having a connection to the server, and may generate all of the transactions for the endpoint and receive the license automatically, or the infor-

mation from the endpoint may be input by a user. It will be understood that numerous alternatives exist to the flow of the operational steps of **FIG. 2**. For example, the endpoint and server could communicate individual fields related to the license request rather than include the entire request in one structure. Furthermore, the server may communicate with additional servers when making any determinations regarding licenses which are available to the endpoint.

[**0037**] Referring now to **FIG. 4**, a more detailed flow diagram illustrating the operational steps performed by an endpoint for one embodiment of the present invention is now described. Similarly as mentioned above, the endpoint may perform the operational steps automatically following a command by a user, or a user may input information required for certain operational steps. For example, the endpoint may be a digital video disk (DVD) player, which is capable of both playing digital video disks and recording, or supplying a digital signal to a digital output which another device can connect to in order to record the digital output. The terms "record" or "copy" are used to refer to storage of information on a medium which may be used to view the stored information at a later time. If a user wants to copy a DVD, the user is required to give a copy command, following which the DVD player develops a license request and initiates communication with a licensing authority.

[**0038**] Initially, according to block **300**, the endpoint establishes a connection with the server. The endpoint communicates information to the server indicating that it needs to perform a license transaction, as noted by block **304**. The endpoint then waits for a response from the server, as noted by block **308**. At block **312**, the endpoint determines if a response from the server has been received. If a response has not been received, the endpoint determines if a time limit has been exceeded, according to block **316**. If the time limit is exceeded, the endpoint reports an error message, as noted by block **320**. If, at block **316**, the time limit is not exceeded, the endpoint performs the functions of blocks **308** through **312** again. If the endpoint has received a response at block **312**, a license request is generated including the information which is required by the server, as noted by block **324**. The endpoint, according to block **328**, communicates the license request to the server. The endpoint waits for a response from the server at block **332**, and determines if a response has been received according to block **336**. If a response has not been received from the server, the endpoint determines if a time limit has been exceeded, as noted by block **340**. If the time limit has been exceeded, the endpoint reports an error message, as noted by block **344**. If a response is received from the server at block **336**, the endpoint parses the response and permits copying based on information in the response, as noted by block **348**.

[**0039**] Referring now to **FIG. 5**, a flow chart illustrating the operational steps performed by a server in one embodiment of the present invention is now described. Initially, at block **400**, the server receives information from an endpoint indicating a license transaction is needed. The server, at block **404**, communicates license request information to the endpoint. The server, according to block **408**, waits for a license request from the endpoint. At block **412**, the server determines if a license request has been received from the endpoint. If a license request has not been received, the server determines if a time limit has been exceeded, as noted by block **416**. If the time limit has been exceeded, the server discontinues the operation, as noted by block **420**. If the server determines that a license request has been received at block **412**, the server parses the information in the license request and determines the availability of any licenses requested from the endpoint, as noted by block **424**. At block **428**, the server generates a license response including a number of licenses, which may include zero, the permitted use of the license, and a qualification field. The server communicates the license response to the endpoint at block **432**. The server updates the appropriate license database to include the latest license information, as noted by block **436**. The server then determines, at block **440**, whether the license response results in any changes to the number of licenses at other endpoints. If the license response does not alter the number of licenses available at any other endpoints, the operation is terminated, as noted at block **444**. If the license response does result in a change of licenses at another endpoint, the server communicates a response to the other endpoint(s) to adjust the number of licenses available, as noted at block **448**. As will be understood by one of skill in the art, the operational steps described with respect to **FIGS. 3-5** may be performed using either software or hardware.

[**0040**] Referring now to **FIG. 6**, an illustration of a screen shot of a license request page of one embodiment of the present invention is described. The license request page **500** includes a title bar **504**, a menu bar **508**, a tool bar **512**, and a URL address bar **516**. Each of these bars **504-516** are well known and serve the standard functions of such bars. The license request page includes a content area **520**, which includes a number of fields required for granting a license. A version number/name field **524** prompts for the entry of the version number of software the licenses are requested for, or for the name of the software or other content for which a license is being requested. A customer name field **528** prompts for the entry of the customer name. The customer name may be the name of an enterprise customer, or may be the name of an individual who wishes to copy multimedia content. A number of licenses requested field **532** prompts for the number of licenses requested by the user. This number may correspond to the number of additional software licenses required by one site in an enterprise network, or the number of copies requested by a multimedia content customer. An authorization/payment field prompts for an appropriate authorization, or for the proper payment required for granting a license. The authorization may include an access password for the user, and may also include credit card or personal check information. In one embodiment, the endpoint and server communicate using a secure transfer protocol, such as https, for security purposes. The content area **520** also includes a "send" button **540**, which may be used to send the information included in the license request page to the server.

[**0041**] Referring now to **FIG. 7**, an illustration of a license response page of one embodiment of the present invention is described. The license response page **600** includes a title bar **604**, a menu bar **608** a tool bar **612**, and a URL address bar **616**. Each of these bars **604-616** are well known and serve the standard functions of such bars. The license response page includes a content area **620**, which includes a number of fields describing the license which is granted. A version number/name field **624** displays the version number of software the licenses are granted for, or for the name of the software or other content for which a license is granted.

A customer name field **628** indicates the customer name. A number of licenses requested field **632** indicates the number of licenses which are granted based on the license request, including zero. A use allowed field **636** indicates the use allowed for the license. For example, if a customer is granted a license to copy video content from a HDTV broadcast, the use allowed field may indicate to the device used to copy the content that not all of the content may be copied. For example, if a broadcast of a television program includes additional digital content, such as biographical information for individuals in the program, the use allowed field **636** may indicate that only the video content may be copied, and that the additional digital content may not be copied.

[**0042**] A qualifying field **640** contains qualifying information which may be used by the endpoint to verify the validity of the license. The server generates the qualifying field based on an authentication algorithm which is based on as many of the fields as the provider wishes to use to generate a responding qualification field. The endpoint must receive a valid qualifying field in order to permit any change in licenses. The qualifying field **640** may also contain a decryption key, which would allow the endpoint to decrypt information related to the software or content associated with the license. The qualifying field **640** may be scrambled, or obscured by the device receiving the license response page, thus increasing the difficulty of unauthorized users accessing the qualifying field **640** and determining a system or formula which is used to generate the information contained in the qualifying field **640**.

[**0043**] Referring now to **FIG. 8**, the license structure of one embodiment of the present invention is now described. As illustrated in **FIG. 8**, the license structure **650** has a number of information fields. A first field, the version number field **654** contains the version number, which may be in any format including a binary number string or a text string, and contains information identifying a product. For example, in an EWL application, the version number may indicate a specific software program and the version number of that program. Likewise, if the license is for digital media content, the version number field **654** may include information related to the title content and the date, such as "Movie X, director's version, May, 2000." The license structure **650** contains a customer field **658**, which contains information related to a unique customer identifier.

[**0044**] A number of licenses field **662** contains information indicating the number of licenses being granted. This number may be the number of licenses allocated for a software program for a site, or may contain the total number of copies allowed to be made in a media application. A use allowed field **666** indicates any limited use for the license. For example, if a software application has an initial trial mode use, the use allowed will indicate that the use is a trial mode, and the period of the trial. The use allowed field **666** may also indicate that only portions of digital content may be copied. For example, a content provider may provide digital video content of an event, and additional digital information which is not required for a video image. The use allowed field may indicate that a copy of the digital video content may be copied, and that the additional digital information may not be copied. Finally, the license structure **650** contains a qualifying field **670**, which may contain information for authentication/verification purposes. The license, upon being received at the endpoint, would either allow it to come into service based on the parameters or allow a function to be performed, such as copying of content.

[**0045**] The present invention, in various embodiments, includes components, methods, processes, systems and/or apparatus substantially as depicted and described herein, including various embodiments, subcombinations, and subsets thereof. Those of skill in the art will understand how to make and use the present invention after understanding the present disclosure. The present invention, in various embodiments, includes providing devices and processes in the absence of items not depicted and/or described herein or in various embodiments hereof, including in the absence of such items as may have been used in previous devices or processes, e.g. for improving performance, achieving ease and\or reducing cost of implementation.

[**0046**] The foregoing discussion of the invention has been presented for purposes of illustration and description. The foregoing is not intended to limit the invention to the form or forms disclosed herein. Although the description of the invention has included description of one or more embodiments and certain variations and modifications, other variations and modifications are within the scope of the invention, e.g. as may be within the skill and knowledge of those in the art, after understanding the present disclosure. It is intended to obtain rights which include alternative embodiments to the extent permitted, including alternate, interchangeable and/or equivalent structures, functions, ranges or steps to those claimed, whether or not such alternate, interchangeable and/or equivalent structures, functions, ranges or steps are disclosed herein, and without intending to publicly dedicate any patentable subject matter.

1-12. (canceled)

13. A method for copying digital content by a digital content receiver, comprising:

displaying digital content;

receiving from a user a request to copy the digital content;

accessing a server which is geographically dislocated from the digital content receiver;

receiving, from said server, a request for license information related to requirements for granting license to copy digital content;

determining said requested license information;

communicating said requested license information to said server;

receiving, from said server, a copy license, including a number of copies which are authorized to be made; and

generating a copy of the digital content when said number of copies is greater than zero.

14. The method for copying digital content by a digital content receiver, as claimed in claim 13, wherein there are no limitations on the viewing of the digital content.

15. The method for copying digital content by a digital content receiver, as claimed in claim 13, wherein said requested license information includes a plurality of fields, including a content name field, a customer name field, a number of copies requested field, and a payment field.

16. The method for copying digital content by a digital content receiver, as claimed in claim 15, wherein said payment field includes a requirement for credit card information.

17. The method for copying digital content by a digital content receiver, as claimed in claim 13, wherein said copy license includes a plurality of fields including a content name field, a customer name field, a number of licenses granted field, a use allowed field, and a qualifying field.

18. The method for copying digital content by a digital content receiver, as claimed in claim 17, wherein said qualifying field includes authentication information.

19. The method for copying digital content by a digital content receiver, as claimed in claim 17, wherein said qualifying field includes a decryption key.

20. The method for copying digital content by a digital content receiver, as claimed in claim 13, wherein said accessing and communicating steps are performed using hyper text transfer protocol (HTTP).

21. The method for copying digital content by a digital content receiver, as claimed in claim 13, wherein said accessing and communicating steps are performed using hyper text transfer protocol over secure socket layer (HTTPS).

22. The method for copying digital content by a digital content receiver, as claimed in claim 13, wherein said generating a copy step includes:

verifying that said number of copies is greater than zero;

verifying that a valid qualifying field is present in said copy license;

generating a copy of the digital content when said number of copies is greater than zero and said valid qualifying field is present; and

decrementing said number of copies.

23. A method for granting a license to copy digital content, comprising:

receiving, from a digital content receiver, a request for license information fields;

communicating said license information fields to said digital content receiver over a network connection;

receiving license information from said digital content receiver over the network connection;

determining the availability of a copy license based on said license information; and

communicating a license, including a number of copies which the digital content receiver is authorized to make, to said digital content receiver over the network connection.

24. The method for granting a license to copy digital content, as claimed in claim 23, wherein said determining step comprises:

verifying copy license availability for a content title requested to be copied;

verifying a proper payment; and

determining said number of copies based on said payment and said copy license availability.

25. The method for granting a license to copy digital content, as claimed in claim 23, wherein said determining step comprises:

accessing a database containing copy license permissions to determine if copy licenses are available for said digital content;

verifying a proper payment; and

determining said number of copies based on said payment and said copy license availability.

26. The method for granting a license to copy digital content, as claimed in claim 25, wherein said accessing step comprises:

establishing communication with a server; and

accessing a database on the server which contains said copy license availability.

27. The method for granting a license to copy digital content, as claimed in claim 23, wherein said license information includes a request to copy digital content.

28. The method for granting a license to copy digital content, as claimed in claim 23, wherein said license information fields include a plurality of fields, including a content name field, a customer name field, a number of licenses requested field, and a payment field.

29. The method for granting a license to copy digital content, as claimed in claim 23, wherein said copy license includes a plurality of fields including a content name field, a customer name field, a number of licenses granted field, a use allowed field, and a qualifying field.

30. The method for granting a license to copy digital content, as claimed in claim 29, wherein said qualifying field includes authentication information.

31. The method for granting a license to copy digital content, as claimed in claim 29, wherein said qualifying field includes a decryption key.

32. The method for granting a license to copy digital content, as claimed in claim 23, wherein said receiving and communicating steps are performed using hyper text transfer protocol (HTTP).

33. The method for granting a license to copy digital content, as claimed in claim 23, wherein said receiving and communicating steps are performed using hyper text transfer protocol over secure socket layer (HTTPS).

34-57. (canceled)

58. A computer readable medium containing instructions for directing a computer to perform a method for granting a license to copy digital content to a digital content receiver which is geographically dislocated from said computer, comprising:

receiving, from the digital content receiver, a request for license information fields;

communicating said license information fields to the digital content receiver;

receiving license information from the digital content receiver;

determining the availability of a copy license based on said license information; and

communicating a license, including a number of copies which the digital content receiver is authorized to make, to the digital content receiver.

59. The computer readable medium of claim 58, wherein said determining step comprises:

verifying copy license availability for a content title requested to be copied;

verifying a proper payment; and

determining said number of copies based on said payment and said copy license availability.

60. The computer readable medium of claim 58, wherein said determining step comprises:

accessing a database containing copy license permissions to determine if copy licenses are available for said digital content;

verifying a proper payment; and

determining said number of copies based on said payment and said copy license availability.

61. The computer readable medium of claim 60, wherein said accessing step comprises:

establishing communication with a server; and

accessing a database on the server which contains said copy license availability.

62. The computer readable medium of claim 58, wherein said license information includes a request to copy digital content.

63. The computer readable medium of claim 58, wherein said license information fields include a plurality of fields, including a content name field, a customer name field, a number of licenses requested field, and a payment field.

64. The computer readable medium of claim 58, wherein said copy license includes a plurality of fields including a content name field, a customer name field, a number of licenses granted field, a use allowed field, and a qualifying field.

65. The computer readable medium of claim 58, wherein said qualifying field includes authentication information.

66. The computer readable medium of claim 58, wherein said qualifying field includes a decryption key.

67. The computer readable medium of claim 58, wherein said receiving and communicating steps are performed using hyper text transfer protocol (HTTP).

68. The computer readable medium of claim 58, wherein said receiving and communicating steps are performed using hyper text transfer protocol over secure socket layer (HTTPS).

69. A computer readable medium containing instructions for directing a digital content receiver to perform a method copying digital content, comprising:

displaying digital content;

receiving from a user a request to copy the digital content;

accessing a server which is geographically dislocated from the digital content receiver;

receiving, from said server, a request for license information related to requirements for granting license to copy digital content;

determining said requested license information;

communicating said requested license information to said server;

receiving, from said server, a copy license, including a number of copies which are authorized to be made; and

generating a copy of the digital content when said number of copies is greater than zero.

70. The computer readable medium of claim 69, wherein said requested license information includes a plurality of fields, including a content name field, a customer name field, a number of copies requested field, and a payment field.

71. The computer readable medium of claim 70, wherein said payment field includes a requirement for credit card information.

72. The computer readable medium of claim 69, wherein said copy license includes a plurality of fields including a content name field, a customer name field, a number of licenses granted field, a use allowed field, and a qualifying field.

73. The computer readable medium of claim 72, wherein said qualifying field includes authentication information.

74. The computer readable medium of claim 72, wherein said qualifying field includes a decryption key.

75. The computer readable medium of claim 69, wherein said accessing and communicating steps are performed using hyper text transfer protocol (HTTP).

76. The computer readable medium of claim 69, wherein said accessing and communicating steps are performed using hyper text transfer protocol over secure socket layer (HTTPS).

77. The computer readable medium of claim 69, wherein said generating a copy step includes:

verifying that said number of copies is greater than zero;

verifying that a valid qualifying field is present in said copy license;

generating a copy of the digital content when said number of copies is greater than zero and said valid qualifying field is present; and

decrementing said number of copies.

* * * * *