

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
18 September 2008 (18.09.2008)

PCT

(10) International Publication Number  
**WO 2008/112783 A2**

(51) International Patent Classification: Not classified

(74) Agent: GEORGE, Christopher N.; Mcandrews, Held & Malloy, Ltd., 500 W. Madison St., 34th Floor, Chicago, IL 60661 (US).

(21) International Application Number:  
PCT/US2008/056689

(22) International Filing Date: 12 March 2008 (12.03.2008)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/894,278 12 March 2007 (12.03.2007) US

(71) Applicant (for all designated States except US): ARIS-TOCRAT TECHNOLOGIES AUSTRALIA PTY, LTD [AU/AU]; 71 Longueville Road, Lane Cove, New South Wales (AU).

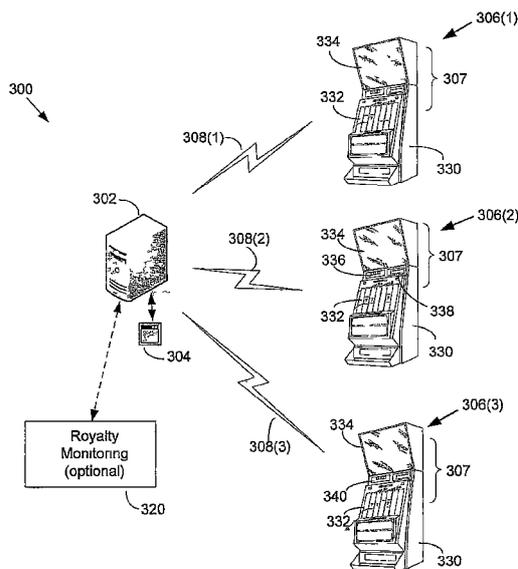
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT,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

(72) Inventors; and

(75) Inventors/Applicants (for US only): ANDERSON, Philip Jeffrey [US/US]; 7521 Shallowford Avenue, Las Vegas, NV 89131 (US). YOUNG, Kent [AU/US]; 821 Peachy Canyon Circle, Las Vegas, NV 89144 (US). JOHNSON, Bradley [US/US]; 3751 South Nellis Boulevard, Las Vegas, NV 89121 (US). TOPHAM, Jeffrey S. [US/US]; 10541 Casa Bianca Street, Las Vegas, NV 89141 (US).

Published:  
— without international search report and to be republished upon receipt of that report

(54) Title: SYSTEMS AND METHODS FOR SERVER-BASED GAMING



(57) Abstract: Aspects of the present disclosure present systems, methods, and apparatus for server-based gaming. Embodiments of the disclosure are directed to systems and methods that include gaming system functionality on a host computer that provides such to individual player-operated electronic gaming machines as thin clients in thin-client architecture. Embodiments of the disclosure can provide systems and methods for tracking and/or downloading a downloadable game, and may include royalty calculation functionality for the use of proprietary gaming software at one or more electronic gaming machines.

WO 2008/112783 A2

## SYSTEMS AND METHODS FOR SERVER-BASED GAMING

### CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application No. 60/894,278 filed March 12, 2007 entitled "SYSTEMS AND METHODS FOR SERVER-BASED GAMING," which is hereby incorporated by reference in its entirety.

### FIELD OF THE INVENTION

The present invention relates to server based downloadable gaming and related services.

### BACKGROUND OF THE INVENTION

[0002] Makers and developers of wagering games, such as those used in casinos, continually strive to provide new and entertaining games. One way of increasing entertainment value associated with casino-style wagering games (e.g., video slots, video poker, video blackjack, and the like) includes offering a base game and a variety of bonus events. Despite the variety of bonus events, players often lose interest in repetitive wager gaming content. In order to maintain player interest, wagering game machine makers frequently update game themes, game settings, bonus events, and other wager gaming content.

[0003] In order to satisfy player demands, wager casino operators license and install new gaming content in their casinos. Casino operators typically order new gaming content "kits" to change the games offered at their casino. These kits may include software to operate at a gaming terminal stored in a game electronically programmable read only memory (EPROM) as well as "belly glass" and the like to reconfigure the physical gaming terminal from one game into another, e.g., game "A" into a game "B". For casino operators owning scores or hundreds of terminals, this process can be cumbersome and expensive. The reconfiguration kit must be purchased, the gaming terminals must be taken out of service and a technician must remove and replace the EPROM and glass of

game A with the EPROM and glass of game B as well as record the transaction and initialize game B.

[0004] Still further, the casino operator may change game A for poor performance, e.g. little play by the players, to game B without knowing if game B will perform any better. Thus the operator must go through trial and error to configure the games on the casino floor in an attempt to attract players, fulfill the player's entertainment needs and maximize the profit to the casino.

[0005] In regards to game choices presented to the operator, currently casino operators are restricted to changing games to games offered by the manufacturer of the gaming terminal. That is, the manufacturer of the terminal will have a suite of games from which the operator can select to reconfigure the terminal. Currently it is rare for third parties other than the terminal manufacturer to offer reconfiguration kits to casino operators due to legal and regulatory restrictions. Thus, when the operator buys the terminal it is tied to the suite of games offered by the terminal manufacturer. Casino operators stock their casino floor with games of different manufacturers to expand their configuration options by getting access to the suites of games offered by the manufacturers.

[0006] Recently casino operator demand and technology advances have resulted in gaming manufacturers providing systems where games can be downloaded from a central server to a gaming terminal to reconfigure the terminal to a new game. This system avoids the requirement of physically changing EPROMs and glass. The suite of games offered for download are stored in a server and made available for download.

[0007] Copyright laws afford a copyright owner the exclusive right to reproduce the copyrighted work in copies, to distribute such copies, and to publicly perform and display the work. Game content such as the graphics, images, photographs, text, operational source code and the like is subject to copyright protection for the owner. Each time a digital file is transferred over a network and copied onto or displayed at a user's terminal, the copyright owner's exclusive reproduction right is implicated (and possibly violated). Likewise, transmission of the copyrighted work over the

physical wire is tantamount to a distribution. Indeed, in an open digital system (e.g., a personal computer accessing the World Wide Web through an Internet Service Provider (ISP)), copies of copyrighted materials can undergo unlimited further copying and transmission without the ability of the owner to collect appropriate compensation (e.g., royalties).

[0008] Many publishers or other content providers naturally are hesitant to make their copyrighted works available over the Internet due to the ease with which these materials may be copied and widely disseminated without adequate compensation. Presently, Internet commerce remains highly unregulated, and there is no central authority for managing collection and allocation of content provider royalties. Moreover, while publishers and content rights societies and organizations are attempting to address the legal and logistical issues, the art has yet to develop viable technical solutions.

[0009] One technique that has been proposed involves wrapping a copyrighted work in a copy protection "environment" to facilitate charging users for use of that information obtained from the Internet or World Wide Web. This approach, called COPINET, links a copyright protection mechanism with a copyright management system, and it is described in Charging, Paying and Copyright-information Access in Open Networks, Bennett et al., 19th International Online Information Meeting Proceedings, Online Information 1995 pp. 13-23 (Learned Information Europe Ltd.).

[0010] Other known techniques for managing use of software content over the Internet typically involve electronic "wallets" or smart cards. Known prior art systems of this type are illustrated, for example, in U.S. Pat. Nos. 5,590,197 and 5,613,001 (the contents of both of which are incorporated herein in their entireties by reference.) These systems described in these patents involve complex hardware and encryption schemes, which are expensive and difficult to implement in practice. They are not readily adaptable to provide general royalty payment schemes for Internet content usage.

[0011] Other known techniques for managing use of software content are described in Berstis, U.S. Patent No. 6,282,653 (the contents of which are incorporated herein in their entirety by reference), which describes a method for managing copies of a digital file that includes content subject to copyright on behalf of a content provider.

[0012] While applications of the prior art may be suitable for their respective intended purposes, there remains a need to provide improved methods and systems for downloadable and server-based gaming systems, including systems and methods for monitoring and collecting royalties for the use of copyrighted gaming content and/or for systems and methods providing thin-client functionality for electronic gaming systems that is not envisioned or motivated by the prior art.

#### SUMMARY OF THE DISCLOSURE

[0013] Aspects of the present disclosure present systems, methods, and apparatus for downloadable as well as server-based content delivery in a gaming environment. Embodiments of the disclosure in one aspect are directed to systems and methods that include content delivery functionality in a gaming environment on a host computer that provides such to individual player-operated game machines thin-client architectures/configurations. Content delivery may be game displays, interfaces and information or other content such as video and audio content to the thin terminal. Embodiments of the disclosure can provide systems and methods for tracking and/or downloading a downloadable game, and may include royalty calculation functionality.

[0014] Other features and advantages of the present disclosure will be understood upon reading and understanding the detailed description of exemplary embodiments, described herein, in conjunction with reference to the drawings, in which like numerals represent like elements.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0015] Aspects of the disclosure may be more fully understood from the following description when read together with the accompanying drawings, which are to be regarded as illustrative in

nature, and not as limiting. The drawings are not necessarily to scale, emphasis instead being placed on the principles of the disclosure. In the drawings:

[0016] FIG. 1 is a schematic representation depicting a server-based gaming system according to an embodiment of the present disclosure;

[0017] FIG. 2 is a schematic diagram of a method of providing a royalty calculation based on use of downloadable gaming software at an electronic gaming machine;

[0018] FIG. 3 is a schematic representation depicting a system for providing a thin-client software application at one or more electronic gaming machines; and

[0019] FIG. 4 is a schematic diagram of a method of providing a thin-client software application at one or more electronic gaming machines.

[0020] One skilled in the art will appreciate that the embodiments depicted in the drawings are illustrative and that variations of those shown, as well as other embodiments described herein, may be envisioned and practiced within the scope of the present disclosure.

#### DETAILED DESCRIPTION OF THE INVENTION

[0021] Aspects of the present disclosure provide systems, methods, and apparatus useful for server-based downloadable gaming and royalty calculations.

[0022] The present disclosure provides systems, methods, and apparatus useful for server-based and downloadable gaming. Embodiments of the disclosure are directed to systems and methods that include gaming system functionality on a host server that provides such to individual player-operated electronic gaming machines, e.g., server based gaming. Further embodiments of the present disclosure can provide systems and methods where gaming software is downloaded or uploaded to a gaming terminal, for tracking and/or downloading a downloadable gaming software, and may include royalty calculation functionality relating to the use of such downloadable gaming software.

[0023] Exemplary embodiments of the present disclosure are directed to systems and methods that include gaming system functionality on a host server that provides such to individual player-operated electronic gaming machines. In certain embodiments, the electronic gaming machines may be implemented in a casino or other gaming facility, and the machines can be linked to one another in various configurations.

[0024] Further embodiments of the present disclosure can provide systems and methods for tracking and/or downloading a downloadable gaming software and providing such gaming software to one or more electronic gaming machines, and may include royalty or use fee calculation functionality relating to the use of such downloadable gaming software.

[0025] It is expected that in the future electronic gaming terminals will be able to accept game downloads from various content providers, even from third parties who did not supply the gaming terminals.

[0026] In a related development, systems have been and are being developed to provide server based gaming. In server based gaming the terminals are "dumb" and merely provide for the display of the game and game functions and instructions and input by the player for play of the game. The game control such as random number generators, as opposed to downloadable games, reside at the server which interfaces with the terminals connected thereto. For such systems, the server would store a suite of available games which could be played. These games may be from various game content providers.

[0027] For either of downloadable or server based gaming, the content which may be provided at the terminals may be controlled by the casino operator who chooses which games are played. In an alternative scenario players can choose the games they wish to play.

[0028] Downloadable and/or server based gaming is being or will be deployed to operate in brick and mortar casinos and, through a wireless network, on handheld devices such as tablet terminals,

cellular telephones, personal digital assistants (PDAs) and other such gaming terminals. Where remote gaming is permitted gaming may take place on in-home personal computers, cellular telephones, PDAs and the like.

[0029] In addition to gaming files, it may also be desired to download or broadcast to terminals other content such as advertising, information or other video and audio content to a gaming terminal or a display associated therewith.

[0030] FIG. 1 depicts a gaming system 100 for downloading gaming software code or program(s) for use one or more electronic gambling or gaming machines 106(1)-106(3), e.g., in a casino environment. System 100 can include a first host server 102, which can be configured and arranged to provide gaming software, shown as 104, to one or more electronic gaming machines 106(1)-106(3) by way of a suitable communications link or links 108(1)-108(3). Gaming software 104 can include gaming applications, and/or subcomponents of gaming applications such as graphics, audio, video, operational code, updates, etc.

[0031] With continued reference to FIG. 1, system 100 can also include a second server 110, acting as a gaming software content source and configured to provide gaming software content (e.g., gaming software) to the first server 102 and/or directly to electronic gaming machines 106(1)-106(3). The second server 110 may be configured to deliver such electronic gaming software over suitable communication link(s), e.g., such for example wireless links 112(1)-112(2) and the Internet 114.

[0032] System 100 also includes a royalty calculator 120. Royalty calculator 120 may be any combination of hardware and/or software configured to calculate, track, store, report, adjust, and/or remit royalty or use fee amounts (collectively referred to a "royalty"). One embodiment of the royalty calculator 120 provides for a royalty calculator specifically adapted to calculate royalty amounts related to electronic gaming machines and their related software 104. The royalty calculator 120 may be a general purpose processor with related instruction set. In another

embodiment, the royalty calculator 120 may be a personal computer type processor. Alternatively, the royalty calculator may be part of a slot account system or a processor within server 102. Royalty calculator 120 may be a standalone processor, or may be functionality provided by a general purpose processor such as the type acting as the CPU of server 102. As shown in Fig. 1, royalty calculator 120 may be connected to server 102, as well as other parts/components of system 100, e.g., server 110 and/or electronic gaming machines 106(1) -106(3), in exemplary embodiments.

[0033] The downloadable gaming system depicted in FIG. 1 provides for downloadable content and game operational code to the gaming machines 106(1) - 106(3). The system 100 provides for gaming machines 106(1) - 106(3) operable to download a software payload consisting of gaming software 104. The software payload is capable of configuring a gaming machine operable to play the downloaded game. For example, the software payload may include a game as well as configuration instructions to change the appearance of the gaming machine. More specifically, a casino operator could cause a gaming machine to download a new game recently released. The software payload would include the game, as well as configuration instructions that could alter the appearance of the gaming machine to indicate the gaming machine is configured to play the newly downloaded game. One example configuration is an instruction to change the name displayed on a configurable electronic display. In another example embodiment, a gaming machine player may be able to cause a software payload to be downloaded to a machine. After the payload has been received the gaming machine 106(1) - 106(3) can function independently of the system 100 to receive wagers, player input, select and display outcomes and issue awards to the players for those outcomes.

[0034] The software payload may include graphics, displays, functions, operational controls, input output interfaces and other code. This software payload may be used to configure the gaming devices 106(1)-(3), with the resident hardware and software at the gaming device 106(1)-(3), to

display and operate a game. As such the software payload may include proprietary code, software architecture, and/or multimedia. This software payload may include intellectual property that is protected by patents or copyright, and/or may cause a gaming machine to operate in a manner that implicates the intellectual property rights of a third party. Thus, a third party may seek to collect royalties based on the downloading and/or use of the software payload, as well as the used of a gaming machine.

[0035] In modern casinos the system 100 may include a slot accounting feature which may be hosted at the server 102 or a dedicated server. A slot accounting system may be used to automate slot machine meter reporting and event logging, as well as for player tracking, bonus reward, ticketing and cashless gaming. The gaming machines 106(1) - 106(3) are in communication with the server 102 through a wired or wireless network to communicate operational information to the server 102.

[0036] This information may be security information related to the physical security of a machine, such as whether a machine door is open or a whether component has been tampered with or suffered a security breach. Additionally, this information may be accounting related such as wagers made by the player, payouts, etc. This information is used to measure the operation and performance of the gaming machines 106(1) - 106(3) for accounting, budgeting and forecasting purposes as well as for determining "comps" or "perks" to be offered to the player. The slot accounting system can determine the value wagered and paid at each gaming machine 106(1)-(3).

[0037] As shown in FIG. 2, described below, embodiments of the present disclosure, e.g., similar to system 100 of FIG. 1, can operate to account and thereby provide a royalty to a software vendor for use of that vendor's proprietary gaming software payload, which may include patented, proprietary, or copyrighted technology and/or images or symbols subject to trademarks, rights of publicity or other intellectual property rights. The royalty scheme for using proprietary software may be, for example, (1) a flat fee when the download has been received by the gaming device

106(1)-106(3), (2) a fee related to the net profit (value wagered minus value paid out) of the gaming device 106(1) - 106(3) while the player is playing the device configured by the software, (3) a fee based upon the amount wagered, (4) a flat fee per day whether or not the software is downloaded, (5) based upon player usage time, (6) a combination of (1) —(5) or some other schema which may be mutually agreeable between the software owner and the casino. Other examples include a site license, a varied rate based upon premium versus regular games, a trial period before royalties start accruing, a royalty that changes based upon the percentage of the gaming floor have the company's games, volume discounts, and a varying royalty based upon a relationship to floor average. Further embodiments of the invention allow for an operator to input a royalty schema or algorithm at a gaming machine. Other embodiments provide for the royalty schema to be downloaded to the gaming machine. Additionally, the royalty schema may incorporate minimum and/or maximum thresholds to adjust the royalty fee. While example (1) above calls for a flat fee based upon a download, the royalty could be triggered by any other event, such as a game update. Still further the required fee may have to be shared, for example, between the software owner and the download host entity. Certain software may also be owned outright such that no royalties would be required to be paid. Such downloadable gaming software can be provided to a casino and/or a host (e.g., a facility or server), which in turn can provide the gaming software or various portions thereof to one or more casinos or gaming facilities having electronic gaming machines.

[0038] FIG. 2 depicts a method 200 of providing a royalty calculation based on use of downloadable gaming software at an electronic gaming machine at a casino. At step 202, game software suitable for use in conjunction with an electronic gaming machine, similar to the electronic gaming machine 108(1) of FIG. 1, can be downloaded or transferred, to a host computer from a content source such as a server in communication with the Internet. As described above the software may also be stored at the server in any suitable form such as on a CD-ROM, DVD, hard drive, etc.

[0039] At step 204, the gaming software can be provided for use at one or more electronic gaming machines from the host computer. The gaming software may include new game application data, updated application data, gaming machine configuration information, etc. The gaming software may be provided through wired or wireless information links. Additionally, the gaming software transfer may be initiated by a user or device remote from the gaming machine, host computer, and/or content server.

[0040] At step 206, a royalty is calculated related to the download and/or usage of the gaming software. Software and/or hardware are provided so that the royalty calculation applicable to the downloaded game software payload can be made, stored, reported and retrieved. Royalty calculations can be made on any suitable basis as described above. In embodiments utilizing drop, value in, jackpots paid and the like, meter data can be retrieved from the slot accounting system and saved to provide a redundancy or back up for royalty calculation.

[0041] At step 208, different games (or gaming software) may be provided on different royalty schedules. Therefore, when a game software payload is downloaded the applicable royalty calculation schema is also identified and used in calculating the royalty. For example, Game X may be a free game whereas Game Y may have a royalty based on net win and Game Z a royalty based on a daily rate. A royalty calculator can be used whenever a royalty generated event is triggered. For example, Game Z may be downloaded for a day and then replaced with Game X. In this example, a royalty for Game Z may be owed, because Game Z was on a gaming machine for one day. Alternatively, Game Z may have a daily royalty rate that does not come into effect until a minimum play threshold is triggered. If Game Z was never played, the royalty schema may dictate no royalty is due for Game Z because no play or insufficient play occurred for Game Z.

[0042] Continuing with this example, Game X may be replaced with Game Y, which may collect a royalty related to the value of money input into the gaming machine. Where the royalty is related to the value handled by the gaming machine the calculator may constantly update the royalty fee or

retain information while the game is presented on the gaming device to make periodic, e.g. daily, royalty calculations.

[0043] At step 210, a royalty payment may be remitted. For example, the calculator may be configured to calculate the gross or net royalties due for all interested owners or third parties and prepare corresponding royalty reports with the corresponding back-up information so that the owner can validate the calculation. Still further the calculator or system may be configured to periodically, e.g., monthly, print royalty payment checks or drafts or make electronic deposits for the payment of royalties due.

[0044] In certain circumstances the owner of the game content software may desire to promote certain games or content for downloading. In those circumstances the royalty schema may include an initial discount rate, an initial free trial period or physical or virtual coupons which the casino may use to receive a discount from the royalty. Where coupons are provided the casino may include the coupons into the royalty calculator and the coupon would be accounted for in calculating the royalty. Where the coupon is electronic, the casino would need to accept the terms at which time the coupon terms would be included in the royalty calculation,

[0045] The royalty calculation as described above can be employed for server based gaming as well. Returning to FIG. 1, in a server based gaming environment server 102 would contain the game software to control "dumb" gaming devices 106(1)-106(3) to interface with and display the game features. In this embodiment, in the event the network communication with the gaming terminals 106(1)-106(3) is lost the gaming devices 106(1)-106(3) might not be able to operate. A game would be provided at the gaming device 106(1) - 106(3) and a player could interact with the gaming device, causing the gaming device to interface with the server 102 for the play of the game. At the server, the outcome is selected and signals are sent to the gaming device to display the outcome, issue awards, etc.

[0046] In an example embodiment, a plurality of game software stored at the server has an associated royalty scheme or schedule whereby the casino or game host is charged a fee for the use of the game. The royalty calculator calculates the royalty and if so configured remits the same to the game software owner or other entitled party. Also as described above coupons and/or vouchers may be included to provide incentives to casino owners to provide a game on their gaming machines.

[0047] FIG. 3 depicts a system 300 for providing a thin-client software application at an electronic, thick client, gaming machine 306(1)-306(3). A thin client is a client computer or client software in client-server architecture network which depends primarily on a central server for processing activities, and mainly focuses on conveying input and output between the user and the remote server. Many thin client devices run only web browsers or remote desktop software, meaning that all significant processing occurs on the server. However, recent devices marketed as thin clients can run complete operating systems qualifying them as diskless nodes or hybrid clients. The term "thin client", in terms of hardware, has come to encompass any device marketed as, or used as, a thin client in the original definition - even if its actual capabilities are much greater.

[0048] In contrast, a thick client does as much processing as possible and passes only data for communications and storage to the server. A thick client is a computer in client-server architecture networks which typically provides rich functionality independently of the central server.

[0049] Each gaming machine 306(1)-306(3) may include a cabinet 330 which supports a game display 332 of a type well known in the art such as a CRT, flat screen display or electro-mechanical reels. Disposed within the cabinet 330 is a processor (not shown) of a type known in the art which controls the display 332 and the overall operation of the gaming machine 306(1)-306(3). In this embodiment, the gaming machine 306(1)-306(3) can function as or be a "thick" client, in that it contains the software and hardware to operate a game apart from the server 302. The game

software may be fixed by an EPROM or hard drive or CD or other memory device or, as described above game software may be downloaded to the gaming machine 306(1)-(3).

[0050] Each gaming machine 306(1)-306(3) has one or more "thin" client processing units 307. For example a thin client may be functionally coupled to a secondary display 334 which may be a flat screen display mounted above the main game display. Alternatively or additionally the gaming machine 306(1)-(3) may include a player tracking module (PTM) 336 having thin client architecture and a PTM display 338 which may be a small flat screen display. The PTM module 336 provides an interface for the player to interact with a player tracking system server (e.g., server 302 or other server/computer). For example, a PTM module may have a keyboard, touchpad, touchscreen, or any other input/output mechanism enabling communication between a player and a system server. A card reader 340 can be provided to read a player card (not shown) to provide access to the player's account retained at the player tracking system as described in Acres et al, US Patent 5,655,961 titled "Method for Operating Networked Gaming Devices, the disclosure of which is hereby incorporated by reference. Alternatively, a biometric identification device such as a fingerprint scanner may be used to access a player's account. The PTM display 338 has been provided to display player tracking related information and to enable the player to interface with the player tracking system.

[0051] System 300 includes first (or host) server 302 that is configured and arranged to control one or more of the thin clients and their secondary display 334 or PTM display 338 to display graphics, video, audio, interfaces or deliver server based bonus or secondary gaming features to the player over suitable communications link(s) 308(1)-308(3) using suitable protocols. In exemplary embodiments, a gaming device or machine implemented in system 300 can be a Sentinel <sup>TM</sup> III player tracking module 336, as available by the assignee of the present disclosure, Aristocrat Technologies, Inc. of Las Vegas, Nevada USA.

[0052] Such thin-client applications can include, for example, one or more graphics applications/features, bonus applications/features, and/or additional gaming applications/features, on any of the one or more electronics gaming machines, and/or one or more separate displays. Further adjunct functions for multiple electronic gaming devices or machines 306(1)-306(3) can be operated and controlled through server 302.

[0053] System 300 accordingly provides one or more electronic gaming machines 306(1)-306(3) while server 302, operating through a thin-client architecture, can control a portion of the gaming machine functionality (e.g., more complex functionality) such as functions related to secondary or bonus gaming offered through the secondary display 334 or PTM display 338 including computational processing, random number generation, driving displays, operating player interfaces and/or memory, etc. Because the thin client(s) processing units 307 do not need to include intensive processing and memory storage for running games, bonus games, related game features or the like, system 300 can offer a lower cost for gaming applications. Further, increased flexibility can be provided, e.g., as changes can be implemented at a host computer, e.g., server 302, rather than reconfiguring all of the connected/linked gaming machines 308(1)-308(3) or player tracking modules 336. System 300 may also include a royalty calculator, shown as component 320, for calculating, storing, and/or remitting royalties related to the use of software 304. The royalty calculator 320 may be similar to the royalty calculator 120 described above.

[0054] FIG. 4 depicts a method 400 of providing thin-client software gaming related application at one or more electronic gaming machines, e.g., machines similar to the machines 306(1)-306(3) of FIG. 3. For such a method 400, each electronic gaming machine can include a base game which is operationally displayed at the base game display. In addition to the base game, a server, e.g., server 302 of FIG. 3, can be configured to control the PTM display to operate as a display for a server based game such as Keno. For example, a player would select their keno ticket(s) at the PTM display and the server would randomly select the Keno outcomes and control the PTM display to

display the outcome at the player's PTM display as well as notify the player of any winning outcomes. Thus this Keno game can operate, as a server based game, parallel to the base game being played by the player. Server based gaming may also function to provide casino wide or multi-site progressive games at the PTM display such as lottery, Caribbean stud, etc. These thin client application could be displayed at the secondary display as well.

[0055] At step 402, electronic gaming functionality is provided to players at one or more electronic gaming machines. As described elsewhere, this gaming functionality may be in the form a of a thin client architecture. The electronic gaming machine may be used to accept user input and provide gaming output to the player in form of audio, video, graphics, or payouts. A server in the thin client architecture may be used to perform all or a substantial portion of the processing power to the electronic gaming machine, which would be considered to be the thin-client. For example, the server would provide all or most of the calculations related to the gaming outcomes, royalty calculations, and/or multimedia generation. The client gaming machine may process accepting the input and providing the output generated by the server.

[0056] At step 404, an electronic gaming machine with a thin client processing unit similar to the thin client processing unit 307 of Fig. 3 may perform gaming functions. For example, a thin client processing unit may perform random number generation (RNG), memory functions, and/or royalty calculations.

[0057] At step 406, the thin client architecture may also be used to deliver video, graphics, audio or other non-gaming content to the secondary display or PTM display. This may be in addition to or alternative to providing server based gaming to thick client gaming machines, e.g., machines. For example, a gaming machine may provide thick client functionality to operate a game independent of a central server. Concurrently or alternatively, the gaming machine may also interact with a server to provide thin client functionality on a secondary display and input system. For example, a

player may be playing a thick client video poker game while concurrently playing a thin client keno game at an electronic gaming machine.

[0058] At step 408, bonus game features can be provided as thin-client applications in addition to or separate from the base game. In exemplary embodiments, method 400 may include calculating a royalty for use of one or more software components, similar to method 200 described previously. At step 410, a royalty payment can be calculated and remitted.

[0059] Accordingly, embodiments of the present disclosure can provide for the use and play of downloadable and/or server-based games (e.g., based on gaming software). These embodiments may be useful for providing base games and/or bonus game feature(s) from developer(s) such as third party developers who create game software. Additionally, game software may be provided to casinos for downloading and play at a casino or to a host who will then provide the software to one or more casinos. Thus, game providers may be paid for their software, e.g., which may have copyrighted, trademarked, and/or patented content. Further, one or more gaming features utilized at one or more electronic gaming machines can be provided at the machine(s) as thin-client applications provided from a server.

[0060] In exemplary embodiments, operation of the downloading of gaming software and/or providing a thin-client software application may occur in conjunction with use of OASIS(TM) PersonalBanker(R) Advanced Funds Transfer (AFT) solution, made available by the assignee of the present disclosure, Aristocrat Technologies, Inc. PersonalBanker(R) AFT allows players to download promotional credits, convert points to cash, and upload and download cashable credits to their PersonalBanker(R) account at the gaming machine, significantly expanding casinos' ability to implement high-impact marketing and promotions programs and can provide casinos the flexibility to better tailor rewards for player loyalty and capitalize on additional promotional opportunities at the gaming machine level not available before in a single-wire solution. Players can convert their

loyalty points to cash at the gaming machine and upload funds from the gaming machine to their PersonalBanker(R) account and then download funds to other machines for play.

[0061] Exemplary embodiments of the present disclosure may utilize OASIS(TM) Sentinel IH(TM) player-interface hardware, the next generation of the OASIS(TM) floor network, as provided by Aristocrat Technologies, Inc. An IP/Ethernet-based device, the Sentinel IH(TM) features downloadable multi-media graphics and sound capability and uses a touch screen interface powered by Aristocrat's SpeedMedia(TM) technology. The included high-resolution visual display allows casinos to advertise player and hotel promotions at the gaming machine using a suitable high-speed delivery system. The high-resolution visual display may be one of the current "HD" standards such as 720p, 1080i, and/or 1080p. Alternatively, the high-resolution visual display may be a form of the "Ultra HD" format comprising a resolution of 7,680 x 4,320 pixel display. The high-speed delivery system may be any networking standard capable of providing such signals, such as wired or wireless Ethernet, 3G cellular standard, or any other broadband delivery system.

[0062] Embodiments of the present disclosure may operate or be used in conjunction with BlackBart PRIME(TM) with Multi-Game Analyzer PRIME(TM). This functionality can allow casinos to easily manage and monitor multi-game product performance and adjust the theoretical hold percentage accordingly. Exemplary embodiments may use Aristocrat's OASISv.11.5.2.NV, the first system to be approved by the Nevada Gaming Control Board for meeting Nevada Regulation 14, Technical Standards for Gaming Devices and Technical Standard 3: Integrity of and Proper Accounting for On-Line Slot Systems.

[0063] The embodiments above provide a solution for managing the collection of royalties and/or the allocating of such payments to content providers in a downloadable or server based gaming environment. Additionally certain embodiments of the invention provide for a solution in the context of an open personal computer (PC) architecture such as implemented in the public Internet. Further the embodiments of the invention do not require the use of a separate trusted subsystem to

generate the authorizations for particular content transfers. The embodiments described above may also be applicable to the distribution and royalty calculation of electronic media such as video, music, television, graphics, advertisements, as well as gaming.

[0064] While certain embodiments have been described herein, it will be understood by one skilled in the art that the methods, systems, and apparatus of the present disclosure may be embodied in other specific forms without departing from the spirit thereof. For example, while embodiments have been described herein as including the downloading of gaming software components to a host server that subsequently conveys such software to one or more individual electronic gaming machines, such software may within the scope of the present disclosure be downloaded directly to the one or more electronic gaming machines, with or without control by an associated host server or computer.

[0065] Accordingly, the embodiments described herein are to be considered in all respects as illustrative of the present disclosure and not restrictive.

## CLAIMS

What is claimed is:

1. A system for providing a royalty calculation, the system comprising:
  - one or more electronic gaming machines configured to receive gaming software from a communications link;
  - a first server configured to provide said gaming software to said one or more electronic gaming machines over a first communications link;
  - a second server configured to provide said gaming software to said first server over a second communications link; and
  - a royalty calculator configured to calculate a royalty for use of said gaming software at said one or more electronic gaming machines.
2. The system of claim 1, wherein said royalty calculator calculates a royalty based on a usage time of said gaming software at said one or more electronic gaming machines.
3. The system of claim 1, wherein said royalty calculator calculates a royalty based on a time-based calculation.
4. The system of claim 1, wherein said royalty calculator calculates a royalty based on an event-based calculation.
5. The system of claim 4, wherein said event-based calculation is based on downloads of said gaming software.
6. The system of claim 1, wherein said royalty calculator calculates a royalty based on the net profit of said gaming device.

7. The system of claim 1, wherein said royalty calculator calculates a royalty based on the amount of money wagered at said gaming device.
8. The system of claim 1, wherein said royalty calculator calculates a royalty based on a daily rate.
9. A method of providing a royalty calculation, the method comprising:
  - selecting gaming software from a remote software vendor;
  - downloading said gaming software to a local server from said remote software vendor over a communications link;
  - providing said gaming software to one or more electronic gaming machines for use by a player; and
  - calculating a royalty calculation related to the use of the gaming software.
10. The method of claim 9, further comprising providing a payment of a royalty fee to said remote software vendor based on said royalty calculation.
11. The method of claim 10, wherein said royalty calculation is based on usage time of said gaming software at said one or more electronic gaming machines.
12. The method of claim 10, wherein said royalty calculation is based on a percentage of money wagered at said one more electronic gaming machines.
13. The method of claim 9, further including providing said gaming software as a thin-client application.
14. The method of claim 13, wherein said thin-client application comprises a graphical user interface viewable at said one or more electronic gaming machines.

15. The method of claim 9, further comprising providing a plurality of distinct gaming software, wherein each said distinct gaming software includes a distinct royalty rate and/or schema.
16. A system for providing a thin-client software application at an electronic gaming machine, the system comprising:
- a host server configured to provide a thin-client electronic gaming software application to a communications link;
  - a plurality of electronic gaming machines configured to receive said thin-client electronic gaming software application from said communications link; and
  - a royalty calculator configured to calculate a royalty related to said thin-client electronic gaming software application.
17. The system of claim 16, wherein said host server is configured to provide graphics functionality to said plurality of electronic gaming machines.
18. The system of claim 16, wherein said host server is configured to provide random number generation functionality to said plurality of electronic gaming machines.
19. The system of claim 16, wherein said host server is configured to provide a wagering outcome to at least one of said plurality of electronic gaming machines based on input received from at least one of said plurality of electronic gaming machines.
20. The system of claim 16, wherein said host server is configured to provide a bonus game application to at least one of said plurality of electronic gaming machines concurrent with the operation of said thin-client electronic gaming software application.
21. The system of claim 20, wherein said bonus game application is provided based on an outcome of a play of said thin-client electronic gaming software application.

22. A method of providing a thin-client software application at an electronic gaming machine, the method comprising:

providing electronic gaming functionality to one or more electronic gaming machines;

controlling a first portion of the gaming functionality for said one or more electronic gaming machines through a thin-client architecture with a server; and

controlling a second portion of said gaming functionality for said one or more electronic gaming machines through a thick-client architecture.

23. The method of claim 22, wherein providing said first portion of the gaming functionality to said one or more electronic gaming machines includes downloading gaming software onto a host server linked to said one or more electronic gaming machines.

24. The method of claim 23, further comprising selecting gaming software from a vendor remote from a casino and downloading said gaming software from the software vendor over the Internet.

25. The method of claim 24 further comprising calculating a royalty calculation related to said gaming software.

26. The method of claim 25 further comprising providing a payment of a royalty fee to said software vendor based on said royalty calculation.

27. The method of claim 22, wherein controlling a first portion of the gaming functionality for said one or more electronic gaming machines through a thin-client architecture with a server comprises providing a bonus game feature to said one or more electronic gaming machines.

28. The method of claim 22, wherein controlling a first portion of the gaming functionality for said one or more electronic gaming machines through a thin-client architecture with a server

comprises providing a random number generation functionality to said one or more electronic gaming machines.

29. A method for a providing electronic games and recording related royalties, the method comprising:

establishing a link between a host device and a gaming terminal;

storing at said host device a plurality of game files, each gaming file having an associated royalty schema;

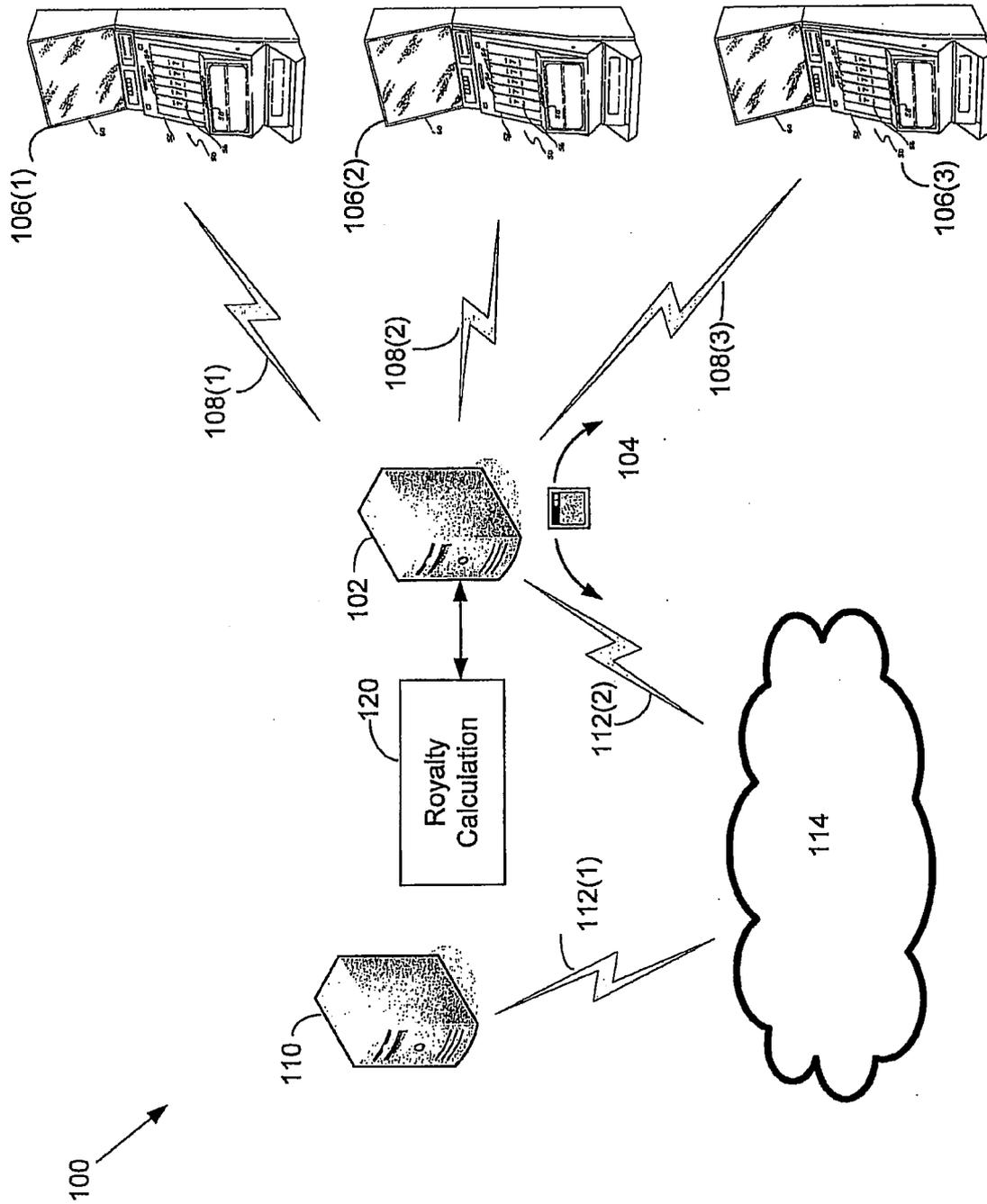
selecting a first game file from said plurality of game files to provide for play at said gaming terminal;

determining a royalty related to the selected game file according to said associated royalty schema; and

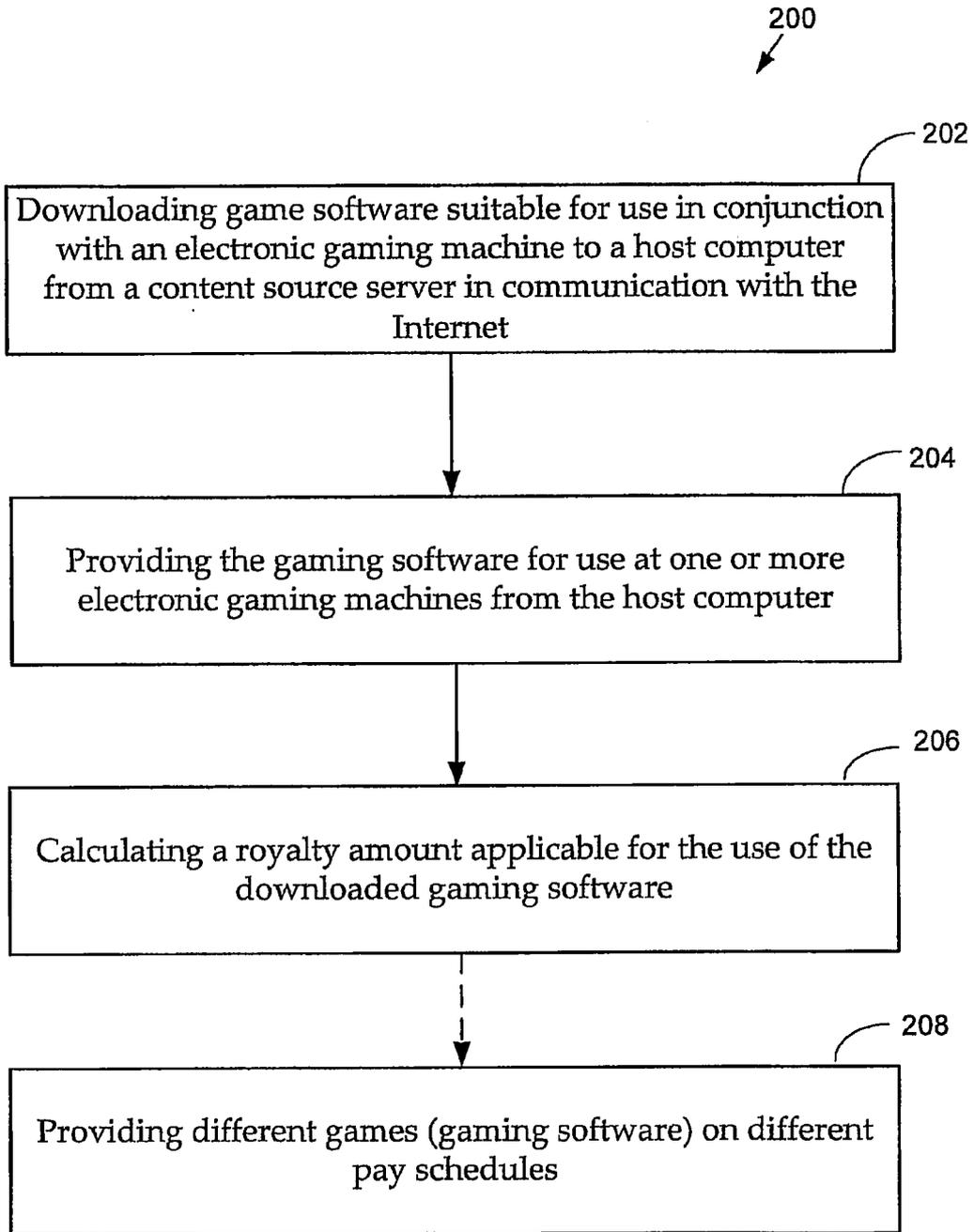
recording said royalty.

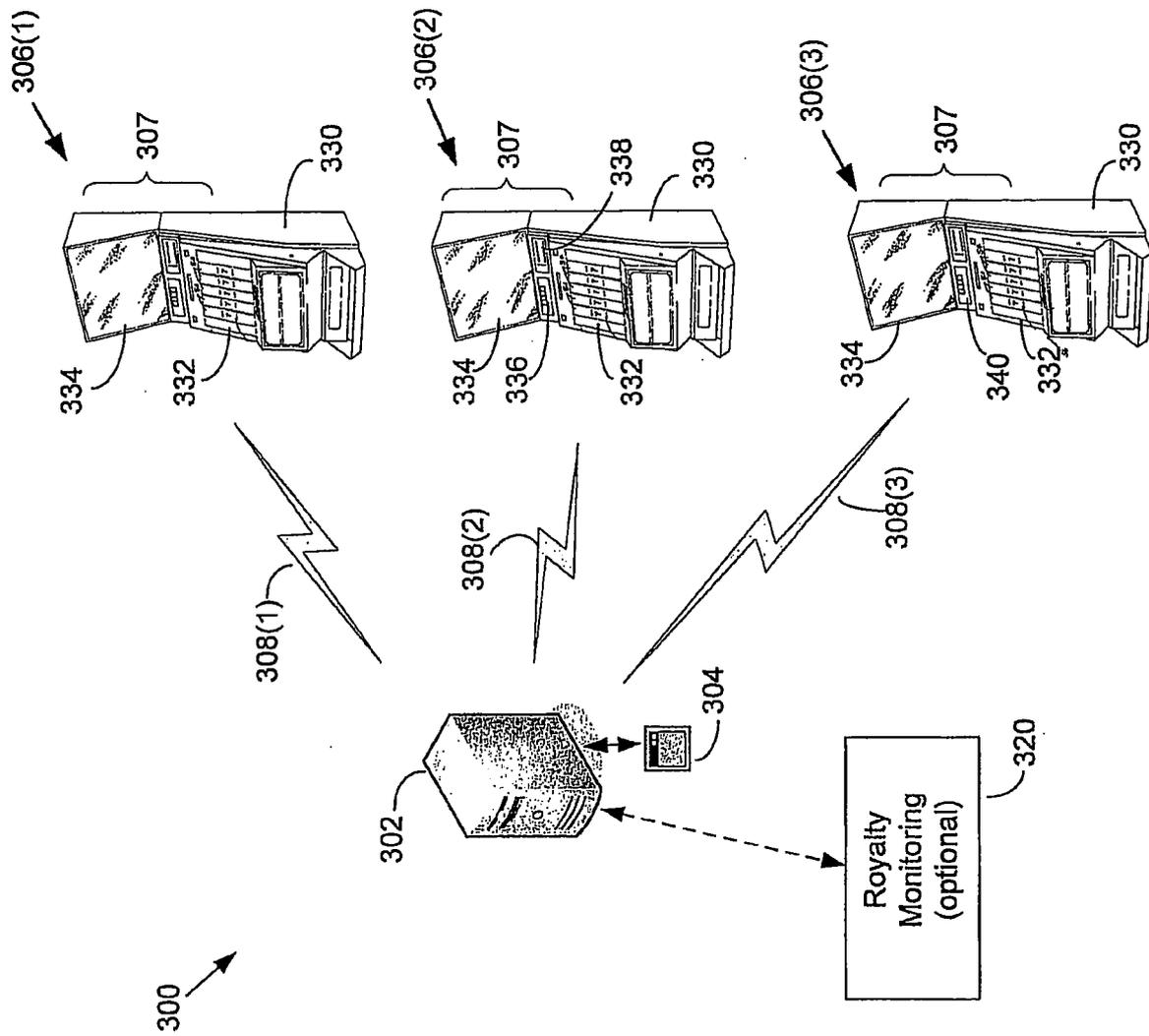
30. The method of claim 29, wherein each game file of said plurality of game files has a distinct royalty schema.

31. The method of claim 30, wherein said royalty is based upon a plurality of royalty schema.



2/4





4/4

400

