According to the information about the game time of all online game accounts of the user recorded in the PPP server, acquire cumulative online time of all online game accounts of the user after the user logs in through an online game account.

Count time on the basis of the acquired cumulative online time, and limit the game time of the user according to the counted time.

Update the information about the game time of the user in the PPP server after the user logs out through an online game account.
According to the information about the game time of all online game accounts of the user recorded in the PPP server, acquire cumulative online time of all online game accounts of the user after the user logs in through an online game account.

Count time on the basis of the acquired cumulative online time, and limit the game time of the user according to the counted time.

Update the information about the game time of the user in the PPP server after the user logs out through an online game account.

Figure 1
Figure 2
Anti-addiction Online game system

301 Log in to the game, get connected and perform data interaction

302 Send the user's account login message

303 Authenticate the license information

304 Update the PPP information

305 Update confirmation message and the user's game time information

306 User's account login message and game time information

307 Start counting time and monitoring

308 Quit the game

309 User's online game account logout message and PPP identifier information

310 Authenticate the license information

311 Return an update confirmation message

312 Account logout message

312 Finish counting time and monitoring

Figure 3
When the cumulative offline time does not exceed the threshold of refreshing the online time, count the online time on the basis of the cumulative online time upon the next login.

Online status of the user

Offline status of the user

Figure 4

Online game server system

Anti-addiction system

Figure 5
Online game server A
Online game server B
Online game server C

Anti-addiction system

User attribute authentication unit

Uniform access management unit

User terminal

Figure 7
METHOD AND SYSTEM FOR LIMITING TIME FOR ONLINE GAME USERS, PPP SERVER, AND ONLINE GAME SERVER

CROSS-REFERENCE TO RELATED APPLICATIONS


FIELD OF THE INVENTION

[0002] The present invention relates to online game services, and in particular, to a method and system for limiting time for online game users, a personal portable profile (PPP) server, and an online game server.

BACKGROUND OF THE INVENTION

[0003] Online games bring social problems such as Web addiction while providing a means of entertainment. Therefore, online games are negatively known as “electronic heroin.” As a side effect of online games, Web addiction troubles the development of the Internet culture industry. It is a common responsibility of governments, enterprises and the society to work out an effective solution to Web addiction, especially juvenile addiction to online games.

[0004] Limiting the time of playing online games may help solve juvenile addiction to online games. In the prior art, after a user logs in through an online game account, the online game server counts the online game time of the account from 0, and monitors the game time of the account according to the counted time.

[0005] Specifically, the anti-addiction system in the online game server limits the online game time of the user. The online game server further includes an online game server system and an online game account management system. In the prior art, the foregoing anti-addiction system executes a time limit on an online game based on a single online game account of the user.

[0006] Consequently, a single online game account is under the time limit, but online games come in many types, and a user can have many online game accounts for each type of online game. For a user with multiple online game accounts, the time limit based on a single online game account is futile. For example, user A has three online game accounts: account 1, account 2 and account 3. User A logs in to the online game server through account 1, and logs out after reaching the fatigue time threshold; and then logs in to the online game server through account 2 to play, and logs out after reaching the fatigue time threshold; and then logs in through account 3. In this way, the total game time of the user is far greater than the fatigue time threshold, but the online game server system is unable to limit the bonus of the user. Therefore, the prior art is unable to limit the game time of an online game user that has multiple online game accounts.

SUMMARY OF THE INVENTION

[0007] A method for limiting the game time of an online game user provided in an embodiment of the invention includes:

[0008] acquiring cumulative online time of all online game accounts of the user after the user logs in through an online game account according to the information about the game time of all online game accounts of the user; and

[0009] counting time on the basis of the acquired cumulative online time, and limiting the game time of the user according to the counted time.

[0010] A system for limiting the game time of an online game user provided in an embodiment of the invention includes an anti-addiction system and an online game server system, wherein:

[0011] the anti-addiction system is adapted to receive the login message of an online game account of the user, acquire cumulative online time of all online game accounts of the user according to the information about the game time of all online game accounts of the user, count time on the basis of the cumulative online time, and limit the game time of the user according to the counted time; and

[0012] online game server system is adapted to send the login message of an online game account of the user to the anti-addiction system.

[0013] A PPP server provided in an embodiment of the invention includes: a PPP access control unit, and a PPP storage unit, wherein:

[0014] the PPP storage unit is adapted to store the PPP data about the game time of all online game accounts of the user; and

[0015] the PPP access control unit is adapted to receive a login update request and a logout update request, update the information about the game time in the PPP storage unit according to the received request, read the information about the game time from the PPP storage unit, and send the read information; or, further search for the PPP requests of the user, read the information in the PPP of the user, and return the user’s PPP identifier information to the user terminal.

[0016] An online game server provided in an embodiment of the invention includes an anti-addiction system and an online game server system, wherein:

[0017] the anti-addiction system is adapted to receive the login message of an online game account of a user, acquire cumulative online time of all online game accounts of the user according to the information about the game time of all online game accounts of the user, count time on the basis of the cumulative online time and limit the game time of the user according to the counted time; and

[0018] the online game server system is adapted to send the login message of an online game account of the user to the anti-addiction system.

[0019] The foregoing scheme may bring the following benefits: In the embodiments of the present invention, the system may acquire the cumulative online time of all online game accounts of the user according to the information about the game time of all online game accounts of the user after the user logs in through an online game account, and execute a time limit on the user; and update the information about the game time of the user in the PPP server after the user logs out through an online game account, thus executing a time limit on an online game user who has multiple online game accounts.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] FIG. 1 is a general flowchart of the method provided in embodiments of the invention;

[0021] FIG. 2 is a flowchart of the method provided in the first embodiment of the invention;
FIG. 3 is a flowchart of the method provided in the second embodiment of the invention;

FIG. 4 shows the cumulative online time of a user acquired in the method provided in the second embodiment of the invention;

FIG. 5 shows the general architecture of the system provided in a embodiment of the invention;

FIG. 6 shows the architecture of the system provided in the first embodiment of the invention; and

FIG. 7 shows the architecture of the system provided in the second embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

The embodiments of the invention comprise acquiring the game time of multiple online game accounts of a user, and limiting the game time of the user according to the acquired game time of multiple online game accounts.

Network operators have network resources that are unavailable from application service providers. By providing the basic access service for users, operators can provide unified access management for users and application service providers. Operators can provide a portable personal profile (PPP, also known as communication fingerprint) for a user through the access number of the user (for example, mobile telephone number in the case of a mobile operator; fixed telephone number in the case of a fixed network operator; access account in the case of a broadband operator) or through the specific user attribute information such as sound wave, fingerprint, and Radio Frequency Identification (RFID) information. The PPP is a minimum complete set that is established by a network operator to uniquely identify communication attributes of a user. For example, the PPP may contain the attributes of the bearer network resources used by the user, and attributes of service resources such as upper-layer service capability components, platforms, and applications. Such information may serve as basic information for network authentication and service authentication of the user.

The embodiments of the invention set information about the game time of all online game accounts of a user in the PPP of the user; acquire the information about the game time of all online game accounts of the user according to the interaction between the PPP server and the online game server system, or the online game account management system, or the online game client system; and limit the game time of the user according to the acquired information about the game time of all online game accounts of the user, thus effectively controlling the game time of an online game user who has multiple online game accounts.

The following elaborates on the method and the system for limiting the game time of an online game user provided in an embodiment of the invention.

As shown in FIG. 1, the general process of a method for limiting the game time of an online game user provided in an embodiment of the invention includes the following steps:

Step 101: According to the information about the game time of all online game accounts of the user recorded in the PPP server, acquire cumulative online time of all online game accounts of the user after the user logs in through an online game account.

Step 102: Count time on the basis of the acquired cumulative online time, and limit the game time of the user according to the counted time.

Step 103: Update the information about the game time of the user in the PPP server after the user logs out through an online game account.

The foregoing steps 101 and 102 may be performed by an attached anti-addiction system or a standalone anti-addiction system. The information about the game time of all online game accounts of a user recorded in a PPP server may be cumulative online time, cumulative offline time and user status information acquired by the PPP server, which derive from the processed login time and logout time of every online game account of the user. In this case, the way for the anti-addiction system to acquire the information about the game time of all online game accounts of the user may be: the PPP server sends the cumulative online time acquired after information processing to the anti-addiction system directly. The information about the game time of a user recorded in a PPP server may be the login time and logout time of every online game account of the user acquired by the PPP server from each online game server. In this case, the way for the anti-addiction system to acquire the information about the game time of all online game accounts of the user may be: acquiring the login time and logout time of every online game account of the user from the PPP server through an online game server.

The method of the present invention is hereinafter described in detail with reference to two specific embodiments.

As shown in FIG. 2, the process of the method provided in the first embodiment of the invention includes the following steps, where step 201 to step 206 describe how a user accesses the network through a terminal to perform PPP-related authentication and processing:

Steps 201-203: The user accesses the network through a terminal. The user attribute collection unit in the terminal collects the user attributes in the terminal, and sends the attributes to the user attribute authentication unit in the uniform access management unit of the operator for authentication. After the authentication is passed, step 204 is executed.

In this embodiment, the user attribute information is associated with the PPP of the user. When the user gets registered on the network, the user attribute information is registered. The user attribute information may be information that uniquely identifies the user such as an ID card number, or other user attribute information such as signature, fingerprint, portrait, and RFID, or special hardware of the user terminal such as CPU serial number or MAC address.

Step 204: The user attribute authentication unit in the uniform access management unit sends the attribute identifier to the PPP server, and the PPP server searches for the corresponding PPP information of the user. If the user accesses the network for the first time, the PPP server generates the corresponding PPP information for the user. In the present invention, the operator generates a PPP for each user that accesses the network. Here the uniform access management unit may also send the network access identifier of the user to the PPP server, and the PPP server searches the PPP database for the PPP or generates a PPP for the user according to the network access identifier of the user.

Step 205: The PPP server performs network authentication and service authentication for the user.

The authentication here is not to verify the identifier of the user, but to verify the PPP information of the user, including the basic service capability attributes and the network capability attributes in the PPP; for example, network
elements and service capability components used by the user. After the authentication is passed, the user can use the network normally.

[0043] The user’s PPP records the information about communication facilities and resource facilities. The generation network (NGN) technology based on IP Multimedia Subsystem (IMS) separates control from bearer and separates service from control. Here the network control layer authenticates the bearer capabilities of the user (for example, access bandwidth, or line QoS) according to the PPP of the user. The service capability authentication here is not to authenticate the specific service applications, but to authenticate the basic service capabilities of the network operator.

[0044] Step 206: The PPP server returns the user’s PPP-related information to the terminal.

[0045] The PPP-related information here may be the user’s PPP identifier information, or the user’s PPP information. The user’s PPP identifier information includes some attributes of the PPP server such as authentication mode and license, and the uniform resource locator (URL) of the user’s PPP. The PPP server may also send the PPP information to the terminal directly, where the PPP information contains information about the game time of the user. In this case, the anti-addiction system will limit the game time of the user according to the information about game time acquired by the online game server from the terminal.

[0046] A part of XML-based PPP identifier information of the user is exemplified below:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<PppIds>
  <PppId>0016800289007</PppId>
  <UserIds>4030610052800</UserIds>
  <PppURL>www.pppserver.com/0016800289007</PppURL>
</PppIds>
```

[0047] As shown in FIG. 2, the process of monitoring the user after the user logs in to a game includes steps 207-217:

[0048] Step 207: The online game client logs in to the game through a registered online game account. The game client sends a login message to the online game server system. This message includes not only the online game account information, but also the user’s PPP identifier information, or even the user’s PPP information. If the login message includes the user’s PPP information, the PPP information includes at least the information about the game time of the user, for example, cumulative online time of the user.

[0049] Step 208: The online game server sends an online game account login message to the anti-addiction system, carrying the user’s PPP identifier information or the user’s PPP information.

[0050] Step 209: The anti-addiction system sends a login update request to the PPP server, carrying the PPP identifier information.

[0051] Step 210: The PPP server authenticates the license in the PPP identifier information sent by the anti-addiction system.

[0052] Here the authentication of the license in the PPP identifier information aims to ensure that the modification of the user’s PPP is legal, and prevent attackers from forging the online game server to modify the user’s PPP. If the authentication is failed, the PPP server may take some traces and restrictive measures such as masking the IP address of the opposite party. Generally, any system that performs data exchange with the PPP server has been certified by the operator. Therefore, the PPP information of the user can be protected from illegal modification through a user confirmation mechanism in addition to use of a license. A user confirmation mechanism may include: After receiving an update request from the anti-addiction system, the PPP server sends an anti-addiction system update notification to the terminal, and executes the update operation only after the user makes a confirmation; once the terminal user returns a reject message to the PPP server, the PPP server may return an error message to the anti-addiction system without modifying the user’s PPP, and then the anti-addiction system notifies the online game server.

[0053] Step 211: After the authentication is passed, the information about the game time in the user’s PPP will be updated.

[0054] In this embodiment, the game time information recorded by the PPP server in the user’s PPP includes: the user’s cumulative online time, cumulative offline time, and user status. The PPP server may count time automatically according to the user status, including: If the user is online, the PPP server counts the cumulative online time of the user; if the user is off-line, the PPP server counts the cumulative offline time of the user. Besides, if the PPP server detects that the cumulative offline time of the user reaches or exceeds the preset threshold of refreshing the cumulative online time, for example, 5 hours, the user’s cumulative online time may be refreshed to 0. In this case, the process of updating the game time information in the user’s PPP includes: First, check the user status recorded in the user’s PPP information. If the user status recorded in the user’s PPP is “off-line,” set the user status recorded in the user’s PPP to “online,” set the cumulative offline time recorded in the user’s PPP to “0,” and continue counting the user’s online time on the basis of the originally recorded cumulative online time, starting from the foregoing offline time; if the user status recorded in the PPP is “online,” it indicates that another online game account is being used under time monitoring, and step 212 will be performed directly.

[0055] Step 212: The PPP server returns an update confirmation message together with the user’s cumulative online time to the anti-addiction system.

[0056] Step 213: The anti-addiction system starts counting time based on the cumulative game time sent from the PPP server, and monitors the game time of the user according to the preset policy.

[0057] The preset policy in this step may be: A prompt message is sent to the online game server according to the healthy game time, fatigue game time, and unhealthy game time mentioned in the anti-addiction system standard formulated by the General Administration of Press and Publication of the People’s Republic of China. After receiving the prompt message, the online game server may reduce the bonuses of the user, and send a prompt message to the user. Here the cumu-
ative game time sent from the PPP server includes cumulative online time, and cumulative offline time. If the cumulative offline time reaches the threshold of refreshing the online time, for example, 5 hours, the anti-addiction system starts from 0 to count the online game time; otherwise, if the cumulative offline time is less than 5 hours, the anti-addiction system counts the user’s online time on the basis of the acquired cumulative online time. For example, if the cumulative online time sent from the PPP server is 02:30:00 and the anti-addiction system sets the fatigue time to 3 hours, the anti-addiction system counts time on the basis of the received cumulative online time. After the user spends 30 minutes in the game, the 3-hour fatigue time threshold is reached, and the anti-addiction system sends a prompt message to the online game server to adjust the game status of the user, for example, reduce the bonus.

[0058] A part of XML-based PPP that records the game time of the user in the foregoing steps is exemplified below:

```
<?xml version="1.0" encoding="UTF-8"?>
<Ppml>
  <PpmlHeader>
    <PpmlId>08016800289007</PpmlId>
    <Userld>4000510592800</Userld>
  </PpmlHeader>
  <PpmlBody>
    <dimension name="Base Information" typeId="1">/Other dimension information</dimension>
    <dimension name="PIM" typeId="2">/User data dimension information</dimension>
    <item id="PIM001" name="Total" type="Time">
      <Description>cumulative online time</Description>
      <item description="online" onlines="02:30:20" offline="00:00:00" state="online"/>
    </item>
  </PpmlBody>
</Ppml>
```

[0059] Step 214: After the user quits the game through an online game account, the terminal sends a quit message to the online game server. The message may include the PPP identifier of the user.

[0060] Step 215: The online game server notifies the anti-addiction system about the logout of the user’s online game account and the user’s PPP identifier information.

[0061] Step 216: The anti-addiction system sends a logout update request to the PPP server, carrying the PPP identifier information.

[0062] Steps 217-218: The PPP server authenticates the license in the PPP identifier information sent by the anti-addiction system, and updates the user’s PPP information after the authentication is passed, and then proceeds to step 219.

[0063] As in step 210, here the authentication of the license in the PPP identifier information aims to ensure that the modification of the user’s PPP is legal, and prevent attackers from faking the online game server to modify the user’s PPP. If the authentication is failed, the PPP server may take some tracking and restrictive measures such as masking the IP address of the opposite party. Generally, any system that performs data exchange with the PPP server has been certified by the operator. Therefore, the PPP information of the user can be protected from illegal modification through a user confirmation mechanism in addition to use of a license. A user confirmation mechanism includes: After receiving an update request from the anti-addiction system, the PPP server sends an anti-addiction system update notification to the terminal, and executes the update operation only after the user makes a confirmation; once the user terminal returns a reject message to the PPP server, the PPP server may return an error message to the anti-addiction system without modifying the user’s PPP.

[0064] The PPP server updates the user’s PPP information in this way: The PPP server searches out the user corresponding to the received PPP identifier, and judges whether all online game accounts of the user are offline. If so, the PPP server records the user status as "offline," whereupon the PPP server counts offline time until receiving the login message of an online game account of the user. The PPP server can monitor the game time during the counting. For example, when the offline time exceeds 5 hours, the PPP server refreshes the cumulative online time to 0; if the user keeps online, the PPP server proceeds to step 219 directly.

[0065] To accurately know whether all online game accounts are offline, the PPP server may set a counter for the user beforehand, and set the initial value of the counter. When receiving the login message of an online game account of the user, the PPP server increases the counter value; when receiving the logout message of an online game account of the user, the PPP server decreases the counter value. The PPP server judges whether all online game accounts of the user are offline, namely, whether the foregoing counter value set by the PPP server for the user is the initial value. If so, the PPP server determines that all online game accounts of the user are offline; otherwise, the PPP server determines that the user is online.

[0066] Steps 219-220: The PPP server returns an update confirmation message to the anti-addiction system, and the anti-addiction system finishes time monitoring on the online game account of the user.

[0067] The first embodiment of the method of the present invention has been described above. Unlike the information recorded in the first embodiment of the method of the present invention, the game time information recorded in the PPP server in the second embodiment is the game time information of every online game account of the user rather than the cumulative time information, and includes the login time (namely, when to log in) and logout time (namely, when to log out) of every online game account. Here, for an online user, the logout time may be recorded as a logout identifier, for example, 00:00:00, to indicate that the online game account is online. In this case, when the user logs out at midnight exactly, the time is recorded as 24:00:00 to be different from the logout identifier. In addition, the online status of every online game account may be set to indicate whether the user is online.

[0068] A part of XML-based PPP that includes the game time of online game accounts in this embodiment of the invention is exemplified below:

```
<?xml version="1.0" encoding="UTF-8"?>
<PpmML>
  <PpmHeader>
    <PpmId>08016800289007</PpmId>
    <Userld>4000510592800</Userld>
  </PpmHeader>
  <PpmBody>
    <dimension name="Base Information" typeId="1">/Other dimension information</dimension>
    <dimension name="PIM" typeId="2">/User data dimension information</dimension>
    <item id="PIM001" name="Total" type="Time">
      <Description>cumulative online time</Description>
      <item description="online" onlines="02:30:20" offline="00:00:00" state="online"/>
    </item>
  </PpmBody>
</PpmML>
```
Because the game time information recorded in the user’s PPP information is different, the interaction process is different. The process of this embodiment is shown in FIG. 3. The process for the user to access the network through a terminal to undergo PPP-related authentication and processing is the same as the case of the first embodiment, and is not described further. The following elaborates on how a user logs in to a game and how to limit the game time of the user in this embodiment of the invention.

Step 301: The online game client logs in to a game through a registered online game account, and gets connected with the online game server to perform data interaction. This step differs from step 207 only in that the login message sent by the online game client to the online game server system includes the PPP identifier information of the user.

Step 302: The online game server sends an online game account login message to the PPP server, carrying the user’s PPP identifier information.

Step 303: The PPP server authenticates the license in the PPP identifier information sent from the online game server.

Step 304: After the authentication is passed, the PPP server updates the PPP information of the corresponding online game account.

In this step, the update of the PPP information of the corresponding online game account of the user is to update the online time of the corresponding online game account to the current time; and record the logout time as 00:00:00, or set the online game account to the online state.

Step 305: The PPP server sends an update confirmation message and the information about game time of all online game accounts of the user before PPP update to the online game server.

Step 306: The online game server sends an online game account login message and the game time of all online game accounts of the user to the anti-addiction system.

Alternatively, in this step, the online game server determines the current cumulative online time after processing the game time of all online game accounts of the user according to the game time of all online game accounts of the user sent from the PPP server, and then sends the cumulative online time to the anti-addiction system. As shown in FIG. 4, the processing of the game time of all online game accounts of the user includes: If the online game server determines that all online game accounts are offline according to such information, the online game server judges whether the duration from the last logout time among all online game accounts to the current time exceeds the threshold of refreshing the online time. If so, the online game server sets the cumulative online time to 0; if not, the online game server calculates the cumulative online time of the user according to the login time and the logout time of all online game accounts. If the online game server determines that all online game accounts of the user are online currently according to the game time of all online game accounts of the user, the online game server calculates the cumulative online time of the user according to the login time and the logout time of all online game accounts.

Step 307: The anti-addiction system monitors the game time of the user according to the login and logout message of all online game accounts of the user, the anti-addiction system processes the time information, determines the cumulative online time of the user, counts time on the basis of such cumulative online time, and monitors the game time of the user; if the information sent from the online game server contains cumulative online time, the anti-addiction system counts time directly on the basis of the cumulative online time and monitors the game time of the user.

Step 308: After the user quits the game through an online game account, the terminal sends a quit message to the online game server. The message may include the PPP identifier information of the user.

Step 309: The online game server sends an online game account logout message and the user’s PPP identifier information to the PPP server.

Step 310: The PPP server authenticates the license in the PPP identifier information sent from the online game server, and updates the PPP information of the user after the authentication is passed.

The PPP server updates the user’s PPP information by setting the logout time of the corresponding online game account to the current time in the user’s PPP information.

Step 311: The PPP server returns an update confirmation message to the online game server.

Step 312: The online game server sends an online game account logout message to the anti-addiction system to notify the anti-addiction system that the online game account of the user has logged out.

Step 313: The anti-addiction system stops monitoring the game time of the corresponding online game account of the user according to the received online game account logout message.

In this embodiment, the online game server may perform step 312 before performing step 308.
The specific embodiments of the method of the present invention have been described above. The system provided in an embodiment of the invention is described in detail below with reference to accompanying drawings.

As shown in FIG. 5, the system provided in an embodiment of the invention includes an anti-addiction system 501 and an online game server system 502. The anti-addiction system 501 is adapted to receive the login message of an online game account of a user, acquire cumulative online time of all online game accounts of the user according to the information about the game time of all online game accounts of the user, count time on the basis of the cumulative online time and limit the game time of the user according to the counted time; the online game server system 502 is adapted to send an online game account login message to the anti-addiction system.

The foregoing system further includes: a PPP server, adapted to store information about the game time of all online game accounts of the user in the user's PPP and provide such information to the anti-addiction system. This PPP server may provide the information about the game time of all online game accounts of the user to the anti-addiction system directly, or provide such information to the anti-addiction system through an online game server system.

The PPP server may send the information about the game time of all online game accounts of the user to the online game server system through an online game client system, and the online game server system sends the information to the anti-addiction system.

The foregoing system may further include: a user attribute collection unit, adapted to collect the attributes that can identify the user from a terminal, and send the collected user attribute information to the user attribute authentication unit; and a user attribute authentication unit, adapted to acquire information through interaction with the PPP server, authenticate user attributes from the user attribute collection unit, and notify the authentication result to the PPP server.

According to the authentication result sent from the user attribute authentication unit, the PPP server sends PPP-related information to the terminal, including the information about the game time of all online game accounts of the user.

The foregoing anti-addiction system is set in an online game server, or set in a service provision platform connected to the online game server and the operator's network, or set separately.

FIG. 6 shows the composition of the system provided in the first embodiment of the invention, where an online game server 61 is connected to a PPP server 63 through a service provision platform 62, and connected to a user terminal 65 through a service provision platform 62 and a uniform access management unit 64.

The online game server 61 includes an anti-addiction system 611, an online game server system 612 and an online game account management system 613. The anti-addiction system 611 and the online game server system 612 have the functions of the foregoing anti-addiction system 501 and the online game server system 502, respectively, except that, as shown in FIG. 6, the anti-addiction system 611 and the online game server system 612 interact with other parts through the uniform open service gateway 621 in the service provision platform 62. The online game account management system 613 is adapted to manage all online game accounts of a user, for example, interact with the online game client system on the user terminal for account login, login authentication, and account logout. The online game account management system interacts with the outside through the uniform open service gateway 621.

The service provision platform 62 includes a uniform open service gateway 621, adapted to connect components of the online game server, serve as an interface gateway for interaction between the foregoing components and the interior parts of the operator's network such as a PPP server and a uniform access management unit, and be responsible for protocol conversion in the interaction process.

The PPP server 63 includes a PPP access control unit 631 and a PPP storage unit 632. The PPP storage unit 632 is adapted to store the PPP data of the user. The PPP access control unit 631 is adapted to (i) receive a login request sent from the anti-addiction system or the online game server system, and authenticate the request message; (ii) if the authentication is passed, update the data in the PPP storage unit, and return the information about the game time of the user read from the PPP storage unit to the anti-addiction system or the online game server system; (iii) receive a logout request sent from the anti-addiction system or the online game server system, and authenticate the request message; (iv) if the authentication is passed, update the data in the PPP storage unit, and return an update confirmation message to the anti-addiction system or the online game server system upon completion of update; (v) according to the request for searching for the user's PPP sent from the user attribute authentication unit, read the information in the user's PPP, and perform network authentication and service authentication for the user; (vi) if the authentication is passed, return the user's PPP identifier to the terminal. The specific embodiments of the PPP server are described in the Chinese Patent Application No. CN200510135987.9, filed with the Chinese Patent Office on Dec. 19, 2005, and will not be described further here. Chinese Patent Application No. CN200510135987.9 is hereby incorporated by reference in its entirety and for everything that it teaches.

The uniform access management unit 64 includes a uniform access gateway 641, which serves as an interface gateway between the online game client on the user terminal and the PPP server or the online game server and may perform traffic control and content charging. The uniform access management unit 64 may further include a user attribute authentication unit 642, adapted to acquire information through interaction with the PPP server and authenticate the user attribute information sent from the terminal.

The user terminal 65 includes an online game client system 651, adapted to interact with the online game server system 612 about game logics and data; interact with the online game account management system to authenticate the online game account of the user; and send the user's PPP information received from the PPP server to the online game server system.

The user terminal 65 may further include a user attribute collection unit 652, adapted to collect the attributes that can identify the user; and, through the uniform access gateway 641, send the collected user attributes to the user attribute authentication unit for authentication. The user attribute collection unit may be a voice collection unit, a hardware information collection unit inside a special computer, fingerprint collection unit, portrait collection unit, intelligent card information collection unit, or a combination thereof.
[0102] The system provided in first embodiment of the present invention has been described above. As shown in FIG. 7, the system provided in the second embodiment differs from the system provided in the first embodiment: The anti-addiction system 722 is set on a service provision platform, and performs the functions of the anti-addiction system 611 except that the anti-addiction system is connected to the online game server system through a uniform open service gateway and is directly connected to the PPP server.

[0103] Although the invention has been described through some exemplary embodiments, the invention is not limited to such embodiments. It is apparent that those skilled in the art can make various modifications and variations to the invention without departing from the spirit and scope of the invention. The invention is intended to cover the modifications and variations provided that they fall in the scope of protection defined by the following claims or their equivalents.

What is claimed is:

1. A method for limiting the game time of an online game user, comprising:
   - acquiring cumulative online time of all online game accounts of the user after the user logs in through an online game account according to the information about the game time of all online game accounts of the user;
   - counting time on the basis of the acquired cumulative online time, and limiting the game time of the user according to the counted time.

2. The method of claim 1, wherein the information about the game time of all online game accounts of the user is stored in a personal portable profile (PPP) server.

3. The method of claim 1, wherein the information about the game time includes the user's cumulative online time, cumulative offline time, and user status; and
   - the method further comprises: updating the user status to “offline” after the user logs out.

4. The method of claim 3, further comprising:
   - counting the cumulative online time of the user when the user is online; and counting the cumulative offline time of the user when the user is offline.

5. The method of claim 4, further comprising:
   - resetting the cumulative online time of the user to zero if the user's cumulative offline time reaches or exceeds the threshold of refreshing the cumulative online time, when the user is offline.

6. The method of claim 3, wherein the process of acquiring cumulative online time of all online game accounts of the user after the user logs in through an online game account according to the information about the game time of all online game accounts of the user comprises:
   - by the user, logging in to an online game server through the online game account, and sending the user’s PPP-related information to the online game server;
   - by the online game server, a user login message and the user’s PPP-related information to the anti-addiction system;
   - by the anti-addiction system, a login update request to the PPP server, carrying the user’s PPP-related information;
   - by the PPP server, after receiving the request, updating the game time information in the user’s PPP according to the user’s PPP-related information in the login update request, and returning the cumulative online time of the user to the anti-addiction system; and
   - the process of updating the user status to “offline” after the user logs out comprises:
     - sending, by the online game server, a user logout message and the PPP identifier in the user’s PPP-related information to the anti-addiction system after the user logs out of the online game server through an online game account;
     - updating, by the anti-addiction system, a logout update request inclusive of the user’s PPP identifier to the PPP server; and
     - updating, by the PPP server after receiving this request, the information about the game time in the user’s PPP according to the PPP identifier in the logout update request.

7. The method of claim 6, wherein the process of updating the game time information in the user’s PPP according to the PPP identifier information after the PPP server receives a login update request comprises:
   - by the PPP server, querying the user status in the user’s PPP after receiving a login update request; if the user status in the user’s PPP is “offline,” setting the user status in the user’s PPP to “online,” setting the cumulative offline time in the user’s PPP to “0,” and continuing to count the online time of the user on the basis of the cumulative online time; if the user status in the user’s PPP is “online,” returning the cumulative online time of the user to the anti-addiction system directly;
   - the process of updating the game time information in the user’s PPP after the PPP server receives a logout update request comprises:
     - by the PPP server, judging whether all online game accounts of the user are offline after receiving a logout update request; if so, setting the user status to “offline”; otherwise, finishing the step directly.

8. The method of claim 7, wherein the PPP server presents an online status counter for the user and sets an initial value; further, upon receiving a login update request, the PPP server increases the online status counter value of the user by one; and
   - further, upon receiving a logout update request, the PPP server decreases the online status counter value of the user by one; and
   - the process of judging whether all online game accounts of the user are offline comprises: judging whether the online status counter value of the user is the initial value.

9. The method of claim 1, wherein the information about the game time includes login time and logout time of every online game account of the user;
   - the process of acquiring the cumulative online time of all online game accounts of the user comprises:
     - acquiring the login time and the logout time of every online game account of the user;
     - and calculating the cumulative online time of the user according to the acquired login time and logout time of every online game account of the user;
   - after acquiring the cumulative online time of all online game accounts of the user, the method further comprises: updating the login time of the online game account that logs in to the game server;
   - the method further comprises: updating the logout time of the online game account after the online game account logs out.

10. The method of claim 9, wherein the process of acquiring cumulative online time of all online game accounts of the user after the user logs in through an online game account according to the information about the game time of all online game accounts of the user comprises:
    - by the user, logging in to the online game server through an online game account, and sending the user’s PPP-related information to the online game server;
sending, by the online game server, an online game account login message and the user’s PPP-related information to the PPP server;
by the PPP server, updating the game time information in the user’s PPP according to the received information, and returning the login time and the logout time of all online game accounts of the user before update to the online game server;
by the online game server, forwarding the time information from the PPP server to an anti-addiction system; by the anti-addiction system, acquiring the cumulative online time of the user according to the received time information;
by the anti-addiction system, acquiring cumulative online time of all online game accounts of the user after the user logs in through an online game account according to the information about the game time of all online game accounts of the user, and the process of updating the logout time of an online game account after the online game account logs out comprises:
by the online game server, after the user logs out through the online game account, sending a logout message of the online game account of the user and the corresponding PPP identifier information to the PPP server;
by the PPP server, updating the logout time of the online game account, and returning an update confirmation message to the online game server;
by the online game server, sending an online game account logout message to the anti-addiction system; and by the anti-addiction system upon receiving the message, stopping monitoring the game time; or
the process of updating the logout time of an online game account after the online game account logs out comprises:
by the online game server, after the user logs out through the online game account, sending an online game account logout message to the anti-addiction system; by the anti-addiction system upon receiving the message, stopping monitoring the game time;
by the online game server, sending a logout message of the online game account of the user and the corresponding PPP information to the PPP server; and
by the PPP server, updating the logout time of the online game account, and returning an update confirmation message to the online game server.

11. The method of claim 10, wherein the online game server forwards the time information from the PPP server to the anti-addiction system; and the anti-addiction system acquires the cumulative online time of the user according to the received time information, comprising:
by the online game server, processing the time information after receiving the time information from the PPP server, acquiring the cumulative online time of the user, and sending the acquired cumulative online time to the anti-addiction system; or,
by the online game server, sending the time information to the anti-addiction system after receiving the time information from the PPP server; and
by the anti-addiction system, processing the received time information, and acquiring the cumulative online time of the user.

12. The method of claim 6, further comprising:
  - sending, by the PPP server, the user’s PPP-related information to the user terminal when the user accesses the network through a terminal.
13. The method of claim 10, further comprising:
  - sending, by the PPP server, the user’s PPP-related information to the user terminal when the user accesses the network through a terminal.
14. The method of claim 13, wherein after the user accesses the network through a terminal, the method further comprises:
  - sending, by the terminal, the user attribute information to the network;
  - before the PPP server sends the user’s PPP-related information to the user terminal, the method further comprises:
    - by the network, authenticating the user attribute information from the terminal, and notifying the PPP server if the authentication is passed.
15. The method of claim 6, wherein the PPP-related information comprises the user’s PPP identifier information or the user’s PPP information.

16. A system for limiting the game time of an online game user, comprising an anti-addiction system wherein:
the anti-addiction system is adapted to receive the login message of an online game account of the user, acquire cumulative online time of all online game accounts of the user according to the information about the game time of all online game accounts of the user, count time on the basis of the cumulative online time, and limit the game time of the user according to the counted time.

17. A system of claim 16, further comprising an online game server system, adapted to send the login message of an online game account of the user to the anti-addiction system.

18. The system of claim 16, further comprising a personal portable profile (PPP) server, adapted to store the information about the game time of all online game accounts of the user in the user’s PPP, and provide the information to the anti-addiction system.

19. The system of claim 18, further comprising:
  - a user attribute collection unit, adapted to collect the attributes that may identify the user, and send the collected user attributes to a user attribute authentication unit;
  - a user attribute authentication unit, adapted to acquire information through interaction with the PPP server, authenticate the user attribute information from the user attribute collection unit, and notify the PPP server according to the authentication result; and
  - the PPP server send the user’s PPP-related information to the terminal according to the authentication result from the user attribute authentication unit.

20. A personal portable profile (PPP) server, comprising a PPP access control unit, and a PPP storage unit, wherein:
the PPP storage unit is adapted to store the PPP data about the game time of all online game accounts of a user; and
the PPP access control unit is adapted to receive a login update request and a logout update request, update the information about the game time in the PPP storage unit according to the received request, read the information about the game time from the PPP storage unit, and send the read information; or, further search for the PPP requests of the user, read the information in the PPP of the user, and return the user’s PPP identifier information to the user terminal.