

Application-Based Data Interaction Method and Apparatus

Technical Field

The present application relates to the field of mobile network technologies, and in particular, to an application-based data interaction method and apparatus.

Background

With continuous development of mobile network technologies, mobile applications are increasingly diversified. More and more applications require networks to perform data interaction. These applications may include payment-based applications, entertainment-based applications, and instant messaging-based applications. These applications typically perform data interaction via WIFI or a mobile communication network.

With the current technologies, the inventors have found the following technical problems: in places with dense traffic, such as subways and shopping malls, WIFI signals or mobile communication network signals are relatively weak, and a mobile device may not be able to smoothly connect to the Internet, leading to a poor user experience of the applications.

The deployment of free public WIFI may solve the problem of weak WIFI signals. However, on one hand, the public WIFI has a potential security risk; on the other hand, due to the large number of mobile devices connected to the public WIFI, the experience of data interaction of the applications may be also poor.

Therefore, there is a need to provide a technical solution for a good user experience of data interaction.

Summary

Embodiments of the present application provide a technical solution for a good user experience of data interaction.

In one example, the application-based data interaction method comprises:
sending a data interaction request;
selecting to establish a first channel for data interaction with a third party;
establishing, by the third party and an application server, a second channel for data interaction;
selectively opening the first channel and the second channel; and
when both the first channel and the second channel are open, performing data interaction with the application server.

The embodiments of the present application further provide another application-based data interaction method, comprising:

sending a preset application-based data interaction request;

when the preset application-based data interaction request cannot be sent to an application server directly, providing an option to establish a first channel for data interaction with a third party;

upon receiving an instruction to select the option, establishing the first channel; and performing data interaction indirectly with the application server through the first channel.

The embodiments of the present application further provide another application-based data interaction method, comprising:

establishing a second channel for data interaction with an application server;

receiving a data interaction request; and

when the data interaction request is a preset application-based data interaction request, opening the second channel.

The embodiments of the present application further provide an application-based data interaction apparatus, comprising:

a request module configured to send a data interaction request;

a selection module configured to select to create a first channel for data interaction with a third party;

a bridging module configured to establish, by the third party and an application server, a second channel for data interaction;

a routing module configured to selectively open the first channel and the second channel; and

a data interaction module configured to, when both the first channel and the second channel are open, perform data interaction with the application server.

The embodiments of the present application further provide another application-based data interaction apparatus, comprising:

a request module configured to send a preset application-based data interaction request;

a selection module configured to, when the preset application-based data interaction request cannot be sent to an application server directly, provide an option to establish a first channel for data interaction with a third party, and upon receiving an instruction to select the option, establish the first channel; and

a first data interaction module configured to perform data interaction indirectly with the application server through the first channel.

The embodiments of the present application further provide another application-based data interaction apparatus, comprising:

a bridging module configured to establish a second channel for data interaction with an application server;

a second data interaction module configured to receive a data interaction request; and

a routing module configured to, when the data interaction request is a preset application-based data interaction request, open the second channel.

The embodiments of the present application further provide another application-based data interaction apparatus, comprising:

a network egress configured to be only connected to a server of a preset application; and

a network ingress configured to only open an IP address reserved for the preset application.

The data interaction method and system according to the embodiments of the present application achieve at least the following advantageous effects:

when data interaction with the application server cannot be directly performed, the data interaction with the application server may be indirectly performed through the opened first channel and second channel, thereby improving the user satisfaction of data interaction of the application.

Brief Description of the Drawings

The accompanying drawings to be described here are used to provide a better understanding of the present application and constitute a part of the present application. The exemplary embodiments of the present application and the description of the exemplary embodiments are used to describe the present application and do not constitute improper limitations to the present application. In the accompanying drawings:

FIG. 1 is a schematic diagram of a process of an application-based data interaction method according to some embodiments of the present application.

FIG. 2 is a schematic diagram of a process of another application-based data interaction method according to some embodiments of the present application.

FIG. 3 is a schematic diagram of a process of another application-based data interaction method according to some embodiments of the present application.

FIG. 4 is a schematic diagram of an application-based data interaction scenario according to some embodiments of the present application.

FIG. 5 is a schematic structural diagram of an application-based data interaction apparatus according to some embodiments of the present application.

FIG. 6 is a schematic structural diagram of another application-based data interaction apparatus according to some embodiments of the present application.

FIG. 7 is a schematic structural diagram of another application-based data interaction apparatus according to some embodiments of the present application.

Detailed Description

To make objectives, technical solutions, and advantages of the present application clearer, the technical solutions of the present application will be clearly and completely described below with reference to the embodiments and the accompanying drawings of the present application. It is obvious that the described embodiments are merely some, but not all, embodiments of the present application. On the basis of the embodiments of the present application, all other embodiments obtainable by one of ordinary skill in the art without creative effort shall fall within the scope of the present application.

Referring to FIG. 1, a data interaction method of an application according to some embodiments of the present application comprises the following steps:

S100: sending a data interaction request.

To meet user needs, the mobile applications become increasingly diversified. Many of these applications require networks to perform functions. These applications include, for example, various e-wallets, payment tools, mobile games, instant messaging tools, etc.

When using an application, a network is required to perform data interaction, so that the data on the application server and the local data on the mobile device can be consistent.

An application installed on a mobile device may send a data interaction request. For example, an e-wallet sends a data interaction request for making a payment, a payment tool sends a data interaction request for verifying a payment, a mobile game sends a data interaction request for updating information, and an instant messaging tool sends a data interaction request for receiving a notification message.

S200: establishing a first channel for data interaction with a third party.

When the application installed on the mobile device sends a data interaction request, the data interaction request may be transferred to an application server by connecting to an Internet node via WIFI. The server performs data interaction in response to the data interaction request. Therefore, the data interaction performed between the mobile device and the application server can support the application's functions. In addition to relying on an Internet node, the data interaction between the mobile device and the application server may also be performed via a mobile communication network, such as a 4G network.

The embodiments of the present application further provide an alternative solution of data interaction. The data interaction between a mobile device and an application server may be performed via a third-party relay.

In some embodiments of the present application, the third party is a preset application-based bridging device.

In one example, the “third party” may be an application-specific wireless networking device for bridging between the mobile device and the application server to perform data interaction. In an application example, the third party is customized based on a standard wireless router device, providing network links for specific software or network services, and providing proxy access services to the application software by providing Socks proxy, etc.

In some other embodiments of the present application, the establishing a first channel for performing data interaction with a third party may include:

when the data interaction request is a preset application-based data interaction request, providing an option to establish a first channel for data interaction with a third party; and upon receiving an instruction to select the option, establishing the first channel.

For example, the mobile device is installed with a payment application and other applications. The “third party” is particularly a payment application-based bridging device. When the data interaction request is a payment application-based data interaction request, the payment application provides an establishing option for a user to select. When the payment application receives an instruction that the option is selected by the user, the mobile device establishes a first channel capable of data interaction with the third party. When the data interaction request is not based on the payment application but based on another application, for example, an instant messaging application, the option for establishing a first channel capable of data interaction between the mobile device and a third party may not be provided.

When data interaction can be performed via a conventional path, such as private WIFI, public WIFI, mobile communication network, etc., the user may select data interaction via a third-party relay. Since the third party is a preset application-based bridging device, the security may be ensured, and moreover, the data interaction efficiency may be ensured.

Furthermore, in some other embodiments of the present application, the method further comprises:

when a preset application-based data interaction request cannot be sent to an application server directly, providing the establishing option.

In places with dense traffic, such as high-speed rail stations, train or bus stations, shops, etc., signals in a conventional path, such as private WIFI, public WIFI, mobile communication networks, etc., may be affected and become weak. When the preset application-based data interaction request cannot be sent to an application server directly, the application provides an establishing option. When an instruction to select the option is

received, the first channel is established between the mobile device and the third party. The data interaction between the mobile device and the application server is transferred via the third party, thereby ensuring a smooth data interaction and improving the user satisfaction of the application.

S300: establishing, by the third party and the application server, a second channel for data interaction.

The second channel for data interaction may be established between the third party and the application server via fiber-optic broadband, a dedicated network, etc. For example, the second channel for data interaction may be established via telecommunication broadband or a business network.

S400: selectively opening the first channel and the second channel.

Furthermore, in some other embodiments of the present application, the selectively opening the first channel and the second channel comprises: when the data interaction request is a preset application-based data interaction request, opening the first channel and the second channel.

The mobile device is connected to the application server through the first channel and the second channel. When the data interaction request is a preset application-based data interaction request, the first channel and the second channel are opened for data interaction. When the data interaction request is not a preset application-based data interaction request, at least one of the first channel and the second channel intercepts the data interaction request. In one example, the interception may be performed in either the first channel or the second channel, or the interception may also be performed in both the first channel and the second channel. Only a preset application-based data interaction request may pass through the first channel and the second channel. This way, the preset application-based data interaction request and the preset application-based data interaction have exclusive access to the first channel and the second channel between the mobile device and the application server, thereby improving the data interaction efficiency and improving the degree of user satisfaction.

S500: when both the first channel and the second channel are open, performing data interaction with the application server.

When both the first channel and the second channel are open, data interaction is performed between the mobile device and the application server via a third-party relay.

Furthermore, in some other embodiments of the present application, the preset application is a payment application or a payment offset application.

In the embodiments of the present application, when data interaction with the application server cannot be directly performed, data interaction with the application server may be indirectly performed through the opened first channel and second channel, thereby improving the user satisfaction of data interaction of the application.

The above-described is an implementation process of the application-based data interaction method. A process of implementing the application-based data interaction method at the mobile device side will be described below.

FIG. 2 illustrates the process of implementing, at the mobile device side, the application-based data interaction method according to some embodiments of the present application.

S101: sending a preset application-based data interaction request.

A preset application of the mobile device may send a data interaction request during executing a function. In one example, an e-wallet sends a data interaction request for making a payment, a payment tool sends a data interaction request for verifying a payment, a mobile phone game sends a data interaction request for updating information, and an instant messaging tool sends a data interaction request for receiving a notification message.

S102: when the preset application-based data interaction request cannot be sent to an application server directly, providing an option to establish a first channel for data interaction with a third party.

In places with a dense traffic, such as high-speed rail stations, train or bus stations, shops, etc., signals in a conventional path, such as private WIFI, public WIFI, mobile communication network, etc., may be affected and become weak. When the preset application-based data interaction request cannot be sent to an application server directly, the application provides the establishing option.

S103: upon receiving an instruction to select the establishing option, establishing the first channel.

When an instruction that the establishing option is selected is received, the first channel is established between the mobile device and the third party.

S104: performing data interaction indirectly with the application server through the first channel.

The data interaction between the mobile device and the application server is transferred via the third party, thereby ensuring a smooth data interaction and improving the user satisfaction of the application.

Furthermore, in some other embodiments of the present application, the preset application

is a payment application or a payment offset application.

In the embodiments of the present application, when the preset application-based data interaction request cannot be sent to an application server directly, data interaction with the application server may be indirectly performed through the opened first channel, thereby improving the user satisfaction of data interaction of the application.

The above-described is a process of implementing the application-based data interaction method at the mobile device side. A process of implementing the application-based data interaction method at a third party will be described below.

FIG. 3 illustrates the process of implementing, at a third party, the application-based data interaction method according to some embodiments of the present application.

S201: establishing a second channel for data interaction with an application server.

The second channel for data interaction may be established between the third party and the application server via fiber-optic broadband, dedicated networks, etc. For example, the second channel for data interaction may be established via telecommunication broadband or a business network.

S202: receiving a data interaction request.

As seen in the description above, the data interaction request sent by the mobile device may be received by the third party. The data interaction request may be a preset application-based data interaction request, such as a payment application-based data interaction request — a request for making a payment or an offset request for a payment. The data interaction request may also not be a preset application-based data interaction request, such as a data interaction request for accessing movie & TV data.

S203: when the data interaction request is a preset application-based data interaction request, opening the second channel.

The third party filters the data interaction request. The third party is a preset application-based bridging device. Assuming that the third party is a payment application-based bridging device, when the data interaction request is a payment application-based data interaction request, the third party opens the second channel.

The third party may manage data interaction requests of preset applications. For example, the third party may open the second channel for a type of data interaction requests. For example, the third party may open the second channel for a payment application-based data interaction request. For other types of data interaction requests, the third party may decide whether to open the second channel according to actual situations. For example, the third party may also open the second channel for a payment offset application-based data

interaction request. The third party may close the second channel for a data interaction request for accessing movie & TV data.

Furthermore, in some other embodiments of the present application, the method further comprises: when the data interaction request is not a preset application-based data interaction request, closing the second channel.

The third party may manage data interaction requests of preset applications. For a preset application-based data interaction request, the third party may open the second channel, while for all data interaction requests based on applications other than the preset applications, the third party closes the second channel.

Furthermore, in some other embodiments of the present application, the preset application is a payment application or a payment offset application.

In the embodiments of the present specification, the third party may manage data interaction requests of preset applications. When the preset application-based data interaction request cannot be sent to an application server directly, the preset application-based data interaction may be performed through the second channel, and ultimately data interaction is performed with the application server, thereby improving the user satisfaction of data interaction of the application.

Referring to FIG. 4, an exemplary application scenario of the present application will be described below:

It is assumed that a payment application and an instant messaging application are installed on a mobile device 1. A third party 2 establishes a second channel with a server 3 of the payment application via a broadband. When a user uses the payment application to make a payment, the payment application prompts the user that an establishing option may be selected. The user may decide whether to select the establishing option according to the current network communication status. When the current network communication status is good, the user may select the establishing option as a backup. When the mobile terminal device receives an instruction that the creation option is selected, the mobile terminal device creates a first channel between the mobile terminal device 1 and the third party 2. The mobile terminal device 1 and the third party 2 are connected via the first channel. When the current network communication state is poor and none of the conventional paths, such as private WIFI, public WIFI, mobile communication networks, etc., is able to complete the payment, the user may select the establishing option. When the mobile device receives an instruction that the establishing option is selected, the mobile device 1 establishes a first channel between the mobile device 1 and the third party 2. The mobile device 1 and the third party 2

are connected through the first channel. When the mobile device 1 sends an instant messaging application-based data interaction request, the instant messaging application-based data interaction request is intercepted as the instant messaging application is not a preset application that is supported by the third party 2. In other words, the second channel is closed to the instant messaging application-based data interaction request. When the mobile device 1 sends a payment application-based data interaction request, the second channel is opened, as the payment application is a preset application that is supported by the third party 2. Data interaction may be performed between the mobile device 1 and the application server 3 via third party 2. The application server 3 responds to the data interaction request, and the data interaction is performed between the mobile device 1 and the application server 3.

The above-described is an application-based data interaction method according to the embodiments of the present application. Based on the same concept, referring to FIG. 5, the present application further provides an application-based data interaction apparatus, comprising:

- a request module 11 configured to send a data interaction request;
- a selection module 12 configured to establish a first channel for data interaction with a third party;
- a bridging module 13 configured to establish, by the third party and an application server, a second channel for data interaction;
- a routing module 14 configured to selectively open the first channel and the second channel; and
- a data interaction module 15 configured to, when both the first channel and the second channel are open, perform data interaction with the application server.

Furthermore, in some other embodiments of the present application, the selection module 12 is configured to:

- when the data interaction request is a preset application-based data interaction request, provide an option to establish a first channel for data interaction with the third party; and
- upon receiving an instruction to select the option, establish the first channel.

Furthermore, in some other embodiments of the present application, the selection module 12 is further configured to when the preset application-based data interaction request cannot be sent to an application server directly, provide the establishing option.

Furthermore, in some other embodiments of the present application, the third party is a preset application-based bridging device.

Furthermore, in some other embodiments of the present application, the routing module

14 is configured to when the data interaction request is a preset application-based data interaction request, open the first channel and the second channel.

Furthermore, in some other embodiments of the present application, the preset application is a payment application or a payment offset application.

Referring to FIG. 6, the present application further provides an application-based data interaction apparatus, comprising:

- a request module 11 configured to send a preset application-based data interaction request;

- a selection module 12 configured to when the preset application-based data interaction request cannot be sent to an application server directly, provide an option to establish a first channel for data interaction with a third party, and upon receiving an instruction to select the option, establish the first channel; and

- a first data interaction module 151 configured to perform data interaction indirectly with the application server through the first channel.

Furthermore, in some other embodiments of the present application, the preset application is a payment application or a payment offset application.

Referring to FIG. 7, the present application further provides an application-based data interaction apparatus, comprising:

- a bridging module 13 configured to establish a second channel for data interaction with an application server;

- a second data interaction module 152 configured to receive a data interaction request; and

- a routing module 14 configured to, when the data interaction request is a preset application-based data interaction request, open the second channel.

Furthermore, in some other embodiments of the present application, the routing module 14 is further configured to when the data interaction request is not a preset application-based data interaction request, close the second channel.

Furthermore, in some other embodiments of the present application, the preset application is a payment application or a payment offset application.

The present application further provides an application-based data interaction apparatus, the apparatus may include:

- a network egress, configured to be only connected to a server of a preset application; and

- a network ingress, configured to only open an IP address reserved for a preset application.

In an exemplary embodiment of the present application, the application-based data interaction apparatus may be a wireless networking device specific to the application for

bridging between the mobile device and the application server to perform data interaction. In another example, the application-based data interaction apparatus may be customized based on a standard wireless router device and providing network links for particular software or network services, and providing proxy access services by providing Socks proxy, etc. A firewall is provided between the application-based data interaction apparatus and the preset application server. A preset application-based data interaction request may pass this firewall, while data interaction requests not based on the preset application may be intercepted. A port of the application-based data interaction apparatus is configured to be open only to an IP address reserved for the preset application. For example, an IP address reserved for a preset application is 192.168.1.100. Then, the DHCP (Dynamic Host Configuration Protocol) of the application-based data interaction apparatus is configured to be: device IP 192.168.1.100, subnet mask 255.255.255.0, and routing IP 192.168.1.1. This way, the preset applications may access the application-based data interaction apparatus, while other applications may not access the application-based data interaction apparatus, thereby reducing the data interaction burden on the application-based data interaction apparatus.

One of ordinary skill in the art should understand that the embodiments of the present invention may be provided as a method, a system, or a computer program product. Therefore, the present invention may be implemented as a complete hardware embodiment, a complete software embodiment, or an embodiment combining software and hardware. Moreover, the present invention may be in the form of a computer program product implemented on one or more computer usable storage media (including, but not limited to, a magnetic disk memory, CD-ROM, an optical memory, etc.) comprising computer usable program codes.

The present invention is described with reference to flowcharts and/or block diagrams of the method, device (system), and computer program product according to the embodiments of the present invention. It should be understood that a computer program instruction may be used to implement each process and/or block in the flowcharts and/or block diagrams and a combination of processes and/or blocks in the flowcharts and/or block diagrams. These computer program instructions may be provided for a general-purpose computer, a special-purpose computer, an embedded processor, or a processor of other programmable data processing devices to generate a machine, causing the instructions executed by a computer or a processor of other programmable data processing devices to generate an apparatus for implementing a function specified in one or more processes in the flowcharts and/or in one or more blocks in the block diagrams.

These computer program instructions may also be stored in a computer readable memory

that can instruct a computer or other programmable data processing devices to work in a particular manner, causing the instructions stored in the computer readable memory to generate a manufactured article that includes an instruction apparatus. The instruction apparatus implements a function specified in one or more processes in the flowcharts and/or in one or more blocks in the block diagrams.

These computer program instructions may also be loaded onto a computer or other programmable data processing devices, causing a series of operational steps to be performed on the computer or other programmable devices, thereby generating computer-implemented processing. Therefore, the instructions executed on the computer or other programmable devices provide steps for implementing a function specified in one or more processes in the flowcharts and/or in one or more blocks in the block diagrams.

In a typical configuration, the computation device includes one or more processors (CPUs), input/output interfaces, network interfaces, and a memory.

The memory may include computer readable media, such as a volatile memory, a Random Access Memory (RAM), and/or a non-volatile memory, e.g., a Read-Only Memory (ROM) or a flash memory (flash RAM). The memory is an example of a computer readable medium.

Computer readable media include permanent, volatile, mobile, and immobile media, which can implement information storage through any method or technology. The information may be computer readable instructions, data structures, program modules, or other data. Examples of storage media of computers include, but are not limited to, Phase-change Random Access Memories (PRAMs), Static Random Access Memories (SRAMs), Dynamic Random Access Memories (DRAMs), other types of Random Access Memories (RAMs), Read-Only Memories (ROMs), Electrically Erasable Programmable Read-Only Memories (EEPROMs), flash memories or other memory technologies, Compact Disk Read-Only Memories (CD-ROMs), Digital Versatile Discs (DVDs) or other optical memories, cassettes, cassette and disk memories or other magnetic memory devices, or any other non-transmission media, which can be used for storing information accessible to a computation device. According to the definitions in the specification, the computer readable media do not include transitory media, such as modulated data signals and carriers.

It should be further noted that the terms of “including,” “comprising,” or any other variants of the terms are intended to encompass a non-exclusive inclusion, causing a process, method, commodity, or device comprising a series of elements to not only comprise these elements, but also comprise other elements that are not clearly listed, or further comprise

elements that are inherent to the process, method, commodity, or device. When there is no further restriction, elements defined by the statement “comprising one...” does not exclude that a process, method, commodity, or device comprising the above elements further comprises additional identical elements.

One of ordinary skill in the art should understand that the embodiments of the present application may be provided as a method, a system, or a computer program product. Therefore, the present application may be implemented as a complete hardware embodiment, a complete software embodiment, or an embodiment combining software and hardware. Moreover, the present application may be in the form of a computer program product implemented on one or more computer usable storage media (including, but not limited to, a magnetic disk memory, CD-ROM, an optical memory, etc.) comprising computer usable program codes.

The above-described is only embodiments of the present application, which are not used to limit the present application. To one of ordinary skill in the art, the present application may have various modifications and changes. Any modification, equivalent substitution, or improvement made within the spirit and principle of the present application shall be encompassed by the claims of the present application.

Claims:

1. An application-based data interaction method, comprising:
 - sending, by a mobile device, a data interaction request;
 - selecting, by the mobile device, to establish a first channel for data interaction with a preset application-based bridging device configured to provide network connection for a preset application;
 - establishing, by the bridging device, a second channel for data interaction between the bridging device and an application server;
 - selectively opening, by the bridging device, the first channel and the second channel;
 - determining, by the bridging device, whether the data interaction request is a preset application-based data interaction request,
 - when the data interaction request is the preset application-based data interaction request, opening, by the bridging device, the first channel and the second channel, and
 - when the data interaction request is not the preset application-based data interaction request, intercepting, by the bridging device, the data interaction request in at least one of the first channel and the second channel; and
 - when both the first channel and the second channel are open, performing, by the mobile device, data interaction with the application server via the bridging device.
2. The method according to claim 1, wherein selecting, by the mobile device to establish the first channel for data interaction with the bridging device comprises:
 - when the data interaction request is the preset application-based data interaction request, providing an option to establish the first channel for data interaction with the bridging device; and
 - upon receiving an instruction to select the option, establishing the first channel.
3. The method according to claim 2, further comprising:
 - when the preset application-based data interaction request cannot be sent to the application server directly, providing the option to establish the first channel.
4. The method according to claim 2, wherein the preset application is a payment application or a payment offset application.
5. An application-based data interaction method, implementable by a mobile device, comprising:
 - sending a preset application-based data interaction request;
 - when the preset application-based data interaction request cannot be sent to an application server, providing an option to establish a first channel for data interaction with a preset

application-based bridging device configured to provide network connection for a preset application;

upon receiving an instruction to select the option, establishing the first channel; and performing data interaction indirectly with an application server through the first channel.

6. The method according to claim 5, wherein the preset application is a payment application or a payment offset application.

7. An application-based data interaction method, implementable by a preset application-based bridging device configured to provide network connection for a preset application, comprising:

establishing a second channel for data interaction with an application server;

receiving a data interaction request from a mobile device;

determining whether the data interaction request is a preset application-based data interaction request; and

when the data interaction request is a preset application-based data interaction request, opening the second channel and a first channel for data interaction between the mobile device and the application server, wherein the first channel is configured for data interaction between the mobile device and the bridging device.

8. The method according to claim 7, further comprising:

when the data interaction request is not the preset application-based data interaction request, closing the second channel.

9. The method according to claim 7, wherein the preset application is a payment application or a payment offset application.

10. An application-based data interaction apparatus, comprising:

a request module configured to send a data interaction request;

a selection module configured to select to establish a first channel for data interaction with a preset application-based bridging device configured to provide network connection for a preset application;

a bridging module configured to establish, by the bridging device, a second channel for data interaction between the bridging device and an application server;

a routing module configured to:

selectively open the first channel and the second channel,

determine whether the data interaction request is a preset application-based data interaction request,

when the data interaction request is the preset application-based data interaction

request, open the first channel and the second channel, and

when the data interaction request is not the preset application-based data interaction request, intercept the data interaction request in at least one of the first channel and the second channel; and

a data interaction module configured to, when both the first channel and the second channel are open, perform data interaction with the application server via the bridging device.

11. The apparatus according to claim 10, wherein the selection module is configured to:

when the data interaction request is the preset application-based data interaction request, provide an option to establish the first channel for data interaction with the bridging device; and

upon receiving an instruction to select the option, establish the first channel.

12. The apparatus according to claim 11, wherein the selection module is further configured to, when the preset application-based data interaction request cannot be sent to the application server directly, provide the option to establish the first channel.

13. The apparatus according to claim 11, wherein the preset application is a payment application or a payment offset application.

14. An application-based data interaction apparatus, comprising:

a request module configured to send a data interaction request;

a selection module configured to:

when the preset application-based data interaction request cannot be sent to an application server directly, provide an option to establish a first channel for data interaction with a preset application-based bridging device configured to provide network connection for a preset application, and

upon receiving an instruction to select the option, establish the first channel; and a first data interaction module configured to perform data interaction indirectly with the application server through the first channel.

15. The apparatus according to claim 14, wherein the preset application is a payment application or a payment offset application.

16. An application-based data interaction apparatus, comprising:

a bridging module configured to establish a second channel for data interaction with an application server;

a second data interaction module configured to receive a data interaction request from a mobile device; and

a routing module configured to,

determine whether the data interaction request is a preset application-based data interaction request, and

when the data interaction request is a preset application-based data interaction request, open the second channel and a first channel for data interaction between the mobile device and the application server, wherein the first channel is configured for data interaction between the mobile device and the second data interaction module.

17. The apparatus according to claim 16, wherein the routing module is further configured to, when the data interaction request is not a preset application-based data interaction request, close the second channel.

18. The apparatus according to claim 16, wherein the preset application is a payment application or a payment offset application.

19. The apparatus according to claim 10, further comprising:

a network egress configured to be only connected to the application server of the preset application; and

a network ingress configured to only open an IP address reserved for the preset application.