

RESOURCE FILE TRANSMISSION METHOD AND APPARATUS, AND DEVICE AND STORAGE MEDIUM

Cross Reference to Related Applications

The present disclosure claims priority to Chinese Patent Application No. 202210570260.7, filed with the Chinese Patent Office on May 24, 2022, entitled “Resource File Transmission Method and Apparatus, Device, and Storage Medium”, the entirety of which is incorporated herein by reference.

Technical Field

The present disclosure relates to the field of data transmission technologies and, in particular, to a resource file transmission method, a resource file transmission apparatus, a device, and a storage medium.

Background Art

With the development of electronic technologies, terminal devices have more and more powerful functions. The terminal devices may perform their powerful functions by installing applications (which may also be called “APP”).

Applications are usually downloaded and installed through application stores. In order to achieve the requirements of the application stores, some applications divide the related code and resources into application packages and resource files. Since the application packages and the resource files are separately stored in different locations, the resource files will not be downloaded simultaneously when users download the application packages. The users will download the resource files only after they find that it is necessary to acquire the resource files when opening the applications. As a result, the entire process of acquiring a resource file is very cumbersome.

Therefore, there is no suitable resource file transmission method in the related art.

Summary

The present disclosure provides a resource file transmission method, a resource file transmission apparatus, a device, and a storage medium to enable a simplified resource file transmission process and improved transmission efficiency.

In a first aspect, the present disclosure provides a resource file transmission method, comprising: obtaining application information about a first application by a first terminal, where the first application is an application in a second terminal that needs to acquire a resource file; obtaining a locally saved resource file associated with the first application according to the application information about the first application by the first terminal, where the resource file is a file necessary for the first application during running; and sending at least the resource file of the first application to the second terminal by the first terminal.

In some possible implementation modes, the step of obtaining application information about a first application by a first terminal may comprise: receiving a file request message sent from the second terminal by the first terminal, where the file request message includes first indication information, and the first indication information is used for indicating the first application; and obtaining the application information about the first application according to the first indication information by the first terminal.

In some possible implementation modes, the file request message contains an explicit request instruction, and the first indication information contains an identifier indicating the first application.

In some possible implementation modes, before obtaining application information about the first application by the first terminal, the method may further comprise: acquiring resource files of a plurality of locally installed applications by the first terminal; and determining an application having a resource file satisfying a preset requirement from the plurality of applications as the first application by the first terminal.

In some possible implementation modes, the step of sending at least the resource file of the first application to the second terminal by the first terminal may comprise: determining, by the first terminal, that the first application is not installed

on the second terminal; and sending the first application and the resource file to the second terminal by the first terminal.

In some possible implementation modes, the step of obtaining a locally saved resource file associated with the first application according to the application information about the first application by the first terminal may comprise: causing the first terminal to determine, according to the application information about the first application, that the first application is locally installed; and acquiring a resource file associated with the first application from a local installation directory of the first application by the first terminal.

In some possible implementation modes, the application information includes: at least one of an application name, a version number, an associated resource file, and a resource file version number.

In a second aspect, the present disclosure provides another resource file transmission method, comprising: receiving at least a resource file associated with a first application sent from a first terminal by a second terminal, where the first application is an application in the second terminal that needs to acquire a resource file; and adding the resource file to an installation directory of the first application by the second terminal.

In some possible implementation modes, before receiving at least the resource file associated with the first application sent from the first terminal by the second terminal, the method may also comprise: sending a file request message to the first terminal by the second terminal, where the file request message includes first indication information, and the first indication information is used for indicating the first application.

In some possible implementation modes, the step of receiving at least a resource file associated with a first application sent from a first terminal by a second terminal may comprise: receiving the first application and the resource file sent from the first terminal by the second terminal.

In some possible implementation modes, after receiving the first application and the resource file sent from the first terminal by the second terminal, the method may also comprise: obtaining application information about the first application by

the second terminal; causing the second terminal to determine, according to the application information about the first application, that the first application is not installed thereon; and installing the first application on the second terminal.

In a third aspect, the present disclosure provides another resource file transmission method, comprising: sending a file request message to a first terminal by a second terminal; obtaining application information about a first application according to the sent file request message by the first terminal; causing the first terminal to determine to send a resource file corresponding to the first application according to the application information about the first application; sending the resource file corresponding to the first application to the second terminal by the first terminal; and receiving the resource file corresponding to the first application and adding the resource file to an installation directory of the first application by the second terminal.

In a fourth aspect, the present disclosure provides still another resource file transmission method, comprising: obtaining application information about a first application according to locally installed applications by a first terminal; obtaining a locally saved resource file associated with the first application according to the application information about the first application by the first terminal; simultaneously sending the first application and the resource file corresponding to the first application to the second terminal by the first terminal; determining, by the second terminal, that the first application is not installed locally; receiving and installing the first application by the second terminal; and receiving the resource file corresponding to the first application and adding the resource file to an installation directory of the first application by the second terminal.

In a fifth aspect, the present disclosure provides a resource file transmission apparatus. The apparatus may be a chip or a system-on-chip in the first terminal, or may be a functional module in the first terminal for implementing the first aspect and any of its possible implementation modes. The resource file transmission apparatus may implement the functions performed by the first terminal in the first aspect and in any of its possible implementation modes, and the functions may be implemented by executing corresponding software by means of hardware. The hardware or software includes one or more modules corresponding to the above

functions. The resource file transmission apparatus comprises: an obtaining module configured to obtain application information about a first application, where the first application is an application in a second terminal that needs to acquire a resource file; an execution module configured to obtain a locally saved resource file associated with the first application according to the application information about the first application, where the resource file is a file necessary for the first application during running; and an output module configured to send at least the resource file of the first application to the second terminal.

In some possible implementation modes, the obtaining module may be further configured to: receive a file request message sent from the second terminal, where the file request message includes first indication information, and the first indication information is used for indicating the first application; and obtain the application information about the first application according to the first indication information.

In some possible implementation modes, the obtaining module may be further configured to: acquire, before obtaining application information about the first application, resource files of a plurality of locally installed applications; and determine an application having a resource file satisfying a preset requirement from the plurality of applications as the first application.

In some possible implementation modes, the output module may be further configured to: determine that the first application is not installed on the second terminal; and send the first application and the resource file to the second terminal.

In some possible implementation modes, the execution module may be further configured to: determine, according to the application information about the first application, that the first application is locally installed; and acquire a resource file associated with the first application from a local installation directory of the first application.

In a sixth aspect, the present disclosure provides a resource file transmission apparatus. The apparatus may be a chip or a system-on-chip in the second terminal, or may be a functional module in the second terminal for implementing the first aspect and any of its possible implementation modes. The resource file

transmission apparatus may implement the functions performed by the second terminal in the second aspect and in any of its possible implementation modes, and the functions may be implemented by executing corresponding software by means of hardware. The hardware or software includes one or more modules corresponding to the above functions. The resource file transmission apparatus comprises: a reception module configured to receive at least a resource file associated with a first application sent from a first terminal, where the first application is an application in a second terminal that needs to acquire a resource file; and an installation module configured to add the resource file to an installation directory of the first application.

In some possible implementation modes, the reception module may be further configured to: send a file request message to the first terminal before receiving at least the resource file associated with the first application sent from the first terminal, where the file request message includes first indication information, and the first indication information is used for indicating the first application.

In some possible implementation modes, the reception module may be further configured to: receive the first application and the resource file sent from the first terminal.

In some possible implementation modes, the reception module may be further configured to: obtain, after receiving the first application and the resource file sent from the first terminal, application information about the first application; determine, according to the application information about the first application, that the first application is not installed; and install the first application.

In a seventh aspect, the present disclosure provides a terminal, comprising: a memory configured to store processor-executable instructions; and a processor, wherein the processor is configured to implement the methods as described in the first aspect, the second aspect, the third aspect, the fourth aspect, and any of their possible implementation modes when executing the executable instructions.

In an eighth aspect, the present disclosure provides a computer-readable storage medium, on which computer-executable instructions are stored, wherein the methods as described in the first aspect, the second aspect, the third aspect,

the fourth aspect, and any of their possible implementation modes can be implemented after the computer-executable instructions are executed by a processor.

The technical solutions according to the present disclosure have the following beneficial effects compared with the related art.

In the present disclosure, when application information about a first application is obtained by a first terminal, a locally saved resource file associated with the first application is sent to a second terminal, and the second terminal receives and stores the resource file sent from the first terminal. In this way, transmission of resource files is enabled between the first terminal and the second terminal, thereby avoiding cumbersome operations of transmitting resource files and improving the efficiency of the transmission of resource files.

It should be understood that the above general description and the following detailed description are exemplary and explanatory only, and do not limit the scope of the present disclosure as claimed.

Brief Description of Drawings

The accompanying drawings here, which are incorporated in and constitute a part of this specification, illustrate embodiments consistent with the present disclosure and serve to explain the principles of the present disclosure together with the specification.

FIG. 1 is a schematic flowchart of an implementation of a resource file transmission method in an embodiment of the present disclosure.

FIG. 2 is a schematic flowchart of another implementation of a resource file transmission method in an embodiment of the present disclosure.

FIG. 3 is a schematic flowchart of yet another implementation of a resource file transmission method in an embodiment of the present disclosure.

FIG. 4 is a schematic flowchart of still another implementation of a resource file transmission method in an embodiment of the present disclosure.

FIG. 5 is a schematic structural diagram of a resource file transmission apparatus in an embodiment of the present disclosure.

FIG. 6 is another schematic structural diagram of a resource file transmission apparatus in an embodiment of the present disclosure.

FIG. 7 is a schematic structural diagram of an electronic device in an embodiment of the present disclosure.

In the figures: 500, 600-resource file transmission apparatus; 501-obtaining module; 502-execution module; 503-output module; 601-reception module; 602-installation module; 700-terminal; 701-processor; 702-memory.

Detailed Description of Embodiments

Exemplary embodiments will be described in detail herein, examples of which are illustrated in the accompanying drawings. When the following description refers to the drawings, the same numbers in different drawings refer to the same or similar elements unless otherwise indicated. The implementation modes described in the following exemplary embodiments do not represent all implementation modes consistent with the present disclosure. Rather, they are merely examples of apparatuses consistent with some aspects of the present disclosure as detailed in the appended claims.

Specific embodiments will be described below, in order to illustrate the technical solutions described in the present disclosure.

With the rapid development of Internet technology, smart terminals have also become popular. Common smart terminals include smartphones, smart watches, PDAs, wearable devices, etc. It is usually necessary to install various APPs on terminals (e.g., smartphones, tablet computers, laptops, etc.), in order to meet user needs, for examples, in terms of social networking, gaming, and the like. Generally, APPs are acquired through application stores (which may also be called “application markets”) recommended by the terminals to achieve the installation of installation packages of the APPs.

Usually, application stores have requirements on sizes of APP packages (e.g., installation files (.apk) in Android systems, installation files (.ios) in IOS systems, installation files (.exe) in Windows systems, etc.) provided by APP developers. For example, application stores of Android systems require that the sizes of

compressed installers (or known as installation packages, installation files, or the like) provided for users to download should not exceed 100 MB. For most APPs, this requirement from application stores will not affect the download of the APPs, because satisfactory space is sufficient to store all code and resources of the APPs. However, some APPs require more space for storage of high-fidelity graphics, media files, and other large resources and thus may not meet the requirement from the application stores. To this end, the application stores propose a resource file to supplement resources of installation files, for example, a universal data package (.obb) for game applications in Android systems. Applications run depending on corresponding resource files.

It should be noted that the above “.apk” represents an APP with an extension of apk, “.ios” represents an APP with an extension of ios, “.exe” represents an APP with an extension of exe, and “.obb” represents a resource file with an extension of obb.

In actual use, an installer and a resource file of the same application are often independent of each other. Therefore, when a user completes the installation of the installer and runs the application, he or she needs to additionally download the corresponding resource file to trigger certain functions in the application. In other words, the application can be considered to run formally, only after the resource file is downloaded. It can be seen that, in this case, there are problems such as low resource file transmission efficiency and complicated transmission operations. Especially in a case where the network condition is relatively poor, resource files may not be downloaded or may take too long time to be downloaded, which seriously affects the use of APPs and hence leads to bad user experience.

Therefore, there is no suitable resource file transmission method.

In order to solve the above problems, an embodiment of the present disclosure provides a data transmission system, comprising: a first terminal and a second terminal. Here, the first terminal and the second terminal may be a smartphone, a tablet computer, a desktop computer, a personal digital assistant, or the like. The first terminal may implement transmission with the second terminal. Here, the first terminal may be a sending terminal for transmission, and the second terminal may

be a receiving terminal for transmission; or the second terminal may be a sending terminal for transmission, and the first terminal may be a receiving terminal for transmission.

The embodiment of the present disclosure is suitable for sending large resource files or resource files with a data volume exceeding a certain threshold between two terminals. For example, when the second terminal wants to implement a game function, the first terminal may transmit a resource file of the game to the second terminal, and the second terminal receives and stores the resource file, so that the original game application in the second terminal can be run. In this case, the first terminal may be a smartphone, and the second terminal may also be a smartphone. Alternatively, when the second terminal wants to implement the function of receiving resource file data, the first terminal may transmit the stored resource file data to the second terminal, so that the second terminal completes the reception of the resource file data. In this case, the first terminal may be a router with a storage function, and the second terminal may be a smartphone.

The embodiments of the present disclosure will be described in connection with the structure of the data transmission system described above and by taking a scenario of transmission of a game resource file between the first terminal and the second terminal as an example. An embodiment of the present disclosure further provides a resource file transmission method to enable transmission of resource files, improve transmission efficiency, and avoid complicated transmission operations, thereby enhancing user experience.

FIG. 1 is a schematic flowchart of an implementation of a resource file transmission method in an embodiment of the present disclosure. Referring to FIG. 1, the resource file transmission method may include S101 to S103.

In S101, a first terminal obtains application information about a first application.

Here, the application information may include: at least one of an application name, a version number, an associated resource file, and a resource file version number.

Optionally, the first application may be an APP in the second terminal that needs to acquire a resource file. For example, in a case where no APP is installed

on the second terminal, an application to be installed in the second terminal may be the first application. Alternatively, in a case where an APP is installed on the second terminal but a resource file corresponding to the APP is not found in the corresponding storage directory, the APP may be the first application. Alternatively, in a case where an APP is installed on the second terminal but a resource file corresponding to the APP has a lower version number, the APP may be the first application.

It should be understood that when the first terminal executes S101, the first terminal may obtain the first application in the second terminal that needs to acquire a resource file, and then obtain the application information about the first application.

In some possible implementation modes, S101 may include, but is not limited to, the following situations.

In the first possible situation, the first terminal receives a file request message sent from the second terminal, where the file request message includes first indication information, and the first indication information is used for indicating the first application; and the first terminal obtains the application information about the first application according to the first indication information.

Here, the file request message contains an explicit request instruction, and the first indication information contains an identifier indicating the first application. For example, when the second terminal needs to acquire the resource file of the first application, the second terminal may use the application name of the first application as a first indication information, and send the first indication information to the first terminal by means of a file request message. After acquiring the first indication information, the first terminal may determine, according to the application name, the first application indicated by the second terminal.

It should be understood that the file request message sent from the second terminal to the first terminal explicitly indicates that the second terminal needs the resource file of the first application. After receiving the above file request message,

the first terminal can obtain the first application according to the indication from the file request message.

Optionally, in the file request message to be sent from the second terminal, the application information about the first application may also be sent to the first terminal, so that the first terminal obtains the application information about the first application. For example, when the first application is installed on the second terminal, the second terminal may obtain application information (the application name, the version number, etc.) of the first application and send the application information to the first terminal. When the first application is not installed on the second terminal, the second terminal may obtain application information about the first application (the obtained application information only includes the application name because the application is not saved in the second terminal), and send the application information to the first terminal.

Exemplarily, it is assumed that three applications, respectively recorded as application A, application B, and application C, are saved in the second terminal. In a first case, if the second terminal needs to acquire a resource file of application A (i.e., the first application), the second terminal sends, to the first terminal, application information about application A together with a message requesting to obtain the resource file of application A, and the first terminal obtains the application information (the application name, the version number, etc.) of application A by obtaining the message from the second terminal. Alternatively, in a second case, if the second terminal needs to acquire a resource file of application D (i.e., the first application), the second terminal sends, to the first terminal, a message indicating that application D is not saved together with a message requesting to obtain the resource file of application D, and the first terminal obtains the application information (only the application name) of application D by obtaining the messages from the second terminal.

In some possible implementation modes, for example, after applications installed on the first terminal are updated, the first terminal may also update the installation file information and send it to the second terminal, so that the second terminal may select the first application by means of the installation file information sent from the first terminal. That is to say, before receiving the file request

message sent from the second terminal by the first terminal, the above method may further include: allowing the first terminal to determine at least one second application from a plurality of locally installed applications; and sending application information about the second application to the second terminal by the first terminal, where the application information about the second application is used for allowing the second terminal to determine the first application from the second applications.

Here, the second application is any one or more applications installed in the first terminal, and the second application has an associated resource file.

It should be understood that the first terminal sends the application information about the second application to the second terminal, so that the second terminal can select, according to the application information about the second application, the first application that needs to acquire the resource file. The first application is one or more applications included in the second applications.

Exemplarily, the second terminal may acquire the application information about the second application, compare it with application information about applications saved in the second terminal, and determine that an application not saved in the second terminal is the first application that needs to acquire the resource file. Alternatively, the second terminal may acquire the application information about the second application, compare it with application information about applications saved in the second terminal, and determine that an application with a resource file of a lower version is the first application that needs to acquire the resource file.

In the second possible situation, the first terminal may acquire resource files of a plurality of locally installed applications, and the first terminal device determines an application having a resource file satisfying a preset requirement from the plurality of applications as the first application. Thereafter, the first terminal obtains the application information about the first application.

Here, the preset requirement is a condition that may be set according to actual needs. For example, where it should be ensured that an APP and a resource file to be sent are of the same version, the preset requirement may be set such that the version number of the resource file matches the version number of the

application. Alternatively, where it should be ensured that a resource file to be sent is of a newer version, the preset requirement may be set such that the update time of the resource file matches the most recent update, where the most recent update may be update in the most recent week or update in the most recent month or the like. In addition to the above, there are other ways to set the preset condition, which is not specifically limited in the embodiments of the present disclosure.

It should be understood that the setting of the preset requirement by the first terminal enables the first terminal to fully grasp the statuses of locally installed resource files and then determine an application corresponding to a resource file satisfying the preset requirement as the first application. In this process, the first terminal is enabled to determine a locally installed application as the first application.

Exemplarily, the first terminal will obtain a list of applications already installed and automatically check resource files of the applications in the application list according to the list. Next, a resource file of obb type will be described as an example. An obb resource file is usually stored in a directory “memorycard/Android/obb/[package-name]”, and the first terminal may search, according to the name of an application (package name), the directory for whether the application has an obb resource file. That is to say, if “memorycard/Android/obb/[A]” exists, it is meant that application A has an obb resource file. Further, obb resource files are named based on the following rules: a main obb resource file is named “main.version-number.com.xxx.xxx.obb”, and a patch obb resource file is named “patch.version-number.com.xxx.xxx.obb”. Hence, the version and type of an obb resource file are acquired by means of the name of the obb resource file, and an application corresponding to an obb resource file satisfying the preset condition or requirement is determined as the first application.

In S102, the first terminal obtains a locally saved resource file associated with the first application according to the application information about the first application.

It should be understood that the first terminal may obtain the application information about the first application after S101 is executed. Then, the first terminal may obtain a resource file associated with the first application from the locally saved files according to the application information about the first application. Optionally, the first terminal may also obtain a storage directory of the resource file.

Exemplarily, it is assumed that, in S101, the second terminal indicates the first application A from the information on the second application that is sent from the first terminal. Then, application A installed on the first terminal will be confirmed as the first application by the first terminal, and subsequently the first terminal acquires the application information about application A. Since application A is installed on the first terminal, the application information about application A that may be obtained by the first terminal includes an application name (A), a version number (3.30), and a resource file version number (3.30). The first terminal obtains a resource file of application A and a storage directory of the resource file according to the above application information (e.g., the application name).

In some possible implementation modes, after the second terminal determines the first application, the second terminal will send application information about the first application to the first terminal, and the first terminal determines the application information about the first application by receiving the application information sent from the second terminal. Because the first application is determined by the second terminal, the first application may be installed in the first terminal, or may not be installed in the first terminal. In this case, the first terminal may determine, according to the application information about the first application, that the first application is locally installed, and then the first terminal acquires a resource file associated with the first application from the local installation directory of the first application.

It should be understood that the first terminal can correspondingly determine whether the first application is installed locally, after the first terminal acquires the application information about the first application. If the first application is installed, the first terminal may acquire a resource file associated with the first application according to the installation directory of the first application.

Exemplarily, it is assumed that application A is confirmed as the first application by the second terminal, and subsequently the second terminal sends the application information about application A to the first terminal. After receiving and acquiring the application information about the first application, the first terminal firstly judges, according to the application information, whether application A is installed on the first terminal. Secondly, if application A is installed, the first terminal obtains a resource file of application A and a storage directory of the resource file according to the application information about application A.

In S103, the first terminal sends at least the resource file of the first application to the second terminal.

It should be understood that the first terminal may obtain the resource file of the first application after S102 is executed. Then, the first terminal executes S103 and may send the resource file to the second terminal. Optionally, the first terminal may further simultaneously send the installation directory of the resource file to the second terminal.

In some possible implementation modes, in the above S103, the first terminal may further determine that the first application is not installed on the second terminal; and the first terminal sends the first application and the resource file to the second terminal.

It should be understood that the first terminal may obtain the application information about the first application after S101 is executed. Then, the first terminal executes S103 and may determine, by means of the obtained application information about the first application, whether the first application is installed on the second terminal. Optionally, if the first application is not installed on the second terminal, the first terminal may simultaneously send both the first application and the resource file to the second terminal.

Exemplarily, it is assumed that the first terminal determines the application information about the first application by means of the file request message sent from the second terminal, and meanwhile, the file request message sent from the second terminal indicates only the application name of the first application and does not contain other information on the first application. Then, the first terminal

may confirm that the first application is not installed in the second terminal in the above situation. It should be understood that the first terminal may otherwise obtain whether the first application is installed in the second terminal, which is not specifically limited in the embodiments of the present disclosure.

In the above embodiment, the first terminal executing S101 to S103 may obtain the application information about the first application, then obtain a locally saved resource file of the first application, and finally transmit the resource file of the first application to the second terminal. The above process enables transmission of resource files between the first terminal and the second terminal, avoids cumbersome operations of transmitting resource files, and improves the efficiency of transmission of resource files. Meanwhile, the two terminals may be connected in a variety of ways. Even in a state where there is no Internet, file transmission can still be performed, which allows for increased paths of transmission of resource files and improved efficiency of transmission of resource files.

Based on the same inventive concept, an embodiment of the present disclosure further provides a resource file transmission method. FIG. 2 is a schematic flowchart of another implementation of a resource file transmission method in an embodiment of the present disclosure. Referring to FIG. 2, the resource file transmission method may include S201 to S202.

In S201, a second terminal receives at least a resource file associated with a first application sent from a first terminal.

Here, the first application is an application in the second terminal that needs to acquire a resource file. For example, in a case where no APP is installed on the second terminal, an application to be installed in the second terminal may be the first application. Alternatively, in a case where an APP is installed on the second terminal but a resource file corresponding to the APP is not found in the corresponding storage directory, the APP may be the first application. Alternatively, in a case where an APP is installed on the second terminal but a resource file corresponding to the APP has a lower version number, the APP may be the first application.

It should be understood that when the first terminal sends the resource file associated with the first application that is required by the second terminal, the second terminal can at least receive and store the resource file.

In some possible implementation modes, the following situations may be included but not limited, prior to S201.

In the first possible situation, when the second terminal can actively request to acquire the resource file of the first application, the second terminal may send a file request message to the first terminal. Here, the file request message includes first indication information, and the first indication information is used for indicating the first application.

It should be understood that the second terminal may determine an application in the second terminal that needs a resource file, determine it as the first application, and then send, to the first terminal, a file request message, which explicitly indicates that the second terminal needs the resource file of the first application.

In the second possible situation, when the second terminal cannot actively request to acquire the resource file of the first application, the second terminal may receive application information about a second application that is sent from the first terminal, where the second application is at least one of a plurality of applications installed locally on the first terminal. The second terminal determines the first application from the application information about the second application.

It should be understood that the first terminal may send the application information about any one or more (i.e., the second application) of the plurality of locally saved applications to the second terminal, and the second terminal determines, by means of the application information, an application (i.e., the first application) in the second terminal that needs a resource file.

Exemplarily, the second terminal may determine the first application by a comparison method. It is assumed that the application information about the second application that is received by the second terminal includes an application name (A), a version number (3.30), and a resource file version number (3.30). Application information about a locally saved application that is obtained by the

second terminal includes an application name (A) and a version number (3.30). By comparing the above application information, the second terminal may know that the second application contains a resource file that is not available locally. When the second terminal needs to acquire the resource file, the application corresponding to the resource file may be determined as the first application, i.e., application A.

In some possible implementation modes, in the above S201, the second terminal may further receive the first application and the resource file sent from the first terminal. The second terminal determines, according to the application information about the first application, that the first application is not installed thereon; and the second terminal installs the first application.

Here, when the second terminal obtains the application name of the first application by means of the message sent from the first terminal, the second terminal may determine, according to the application name, that the first application is not installed thereon. Alternatively, when the second terminal scans the resource file sent from the first terminal, the second terminal determines, according to the resource file name, that the first application is not installed thereon.

It should be understood that the second terminal may also simultaneously receive the first application and the resource file corresponding to the first application when executing S201. The second terminal may install the first application after determining that the first application is not installed thereon.

In S202, the second terminal adds the resource file to an installation directory of the first application.

It should be understood that the second terminal may obtain at least the resource file associated with the first application after S201 is executed. Then, the second terminal may store the resource file in the installation directory of the first application, so that the first application can successfully load the resource file when in use.

In some possible implementation modes, S202 may include, but is not limited to, the following situations.

In the first possible situation, the second terminal may store the resource file in a corresponding directory of the second terminal by means of the original directory of the resource file transmitted by the first terminal. For example, if the original resource file is stored in the directory “memorycard/Android/obb/[packagename]”, the resource file may be stored in the directory “memorycard/Android/obb/[packagename]” of the second terminal.

In the second possible situation, the second terminal may also store the resource file in a corresponding directory in a preset storage mode, where the preset storage mode may be a common storage mode for related resource files, and the second terminal may achieve accurate storage of the resource file by learning the common storage mode.

In the above embodiment, the second terminal executing S201 to S202 may be enabled to obtain the required resource file by receiving at least the resource file associated with the first application sent from the first terminal, and then install and store the resource file to obtain the first application capable of successfully loading the resource file. The above process enables transmission of resource files between the first terminal and the second terminal, avoids cumbersome operations of transmitting resource files, and improves the efficiency of transmission of resource files.

A resource file transmission process in an embodiment of the present disclosure will be described below by way of example.

FIG. 3 is a schematic flowchart of yet another implementation of a resource file transmission method in an embodiment of the present disclosure. As shown in FIG. 3, the method includes:

S301 of sending a file request message to a first terminal by a second terminal and proceeding to S302;

S302 of obtaining application information about a first application according to the sent file request message by the first terminal and proceeding to S303;

S303 of causing the first terminal to determine to send a resource file corresponding to the first application according to the application information about the first application and proceeding to S304;

S304 of sending the resource file corresponding to the first application to the second terminal by the first terminal and proceeding to S305; and

S305 of receiving the resource file corresponding to the first application and adding the resource file to an installation directory of the first application by the second terminal.

In this embodiment, the first terminal may determine, according to the file request message sent from the second terminal, information about the first application required by the second terminal, and then send a resource file corresponding to the first application to the second terminal. The second terminal may receive and store the resource file. This enables transmission of resource files between the first terminal and the second terminal, avoids cumbersome operations of transmitting resource files, and improves the efficiency of transmission of resource files.

FIG. 4 is a schematic flowchart of still another implementation of a resource file transmission method in an embodiment of the present disclosure. As shown in FIG. 4, the method includes:

S401 of obtaining application information about a first application according to locally installed applications by a first terminal and proceeding to S402;

S402 of obtaining a locally saved resource file associated with the first application according to the application information about the first application by the first terminal and proceeding to S403;

S403 of simultaneously sending the first application and the resource file corresponding to the first application to the second terminal by the first terminal and proceeding to S404;

S404 of determining, by the second terminal, that the first application is not installed locally and proceeding to S405;

S405 of receiving and installing the first application by the second terminal and proceeding to S406; and

S406 of receiving the resource file corresponding to the first application and adding the resource file to an installation directory of the first application by the second terminal.

In this embodiment, the first terminal may obtain application information about a first application according to locally installed applications, and determine, according to the application information about the first application, that the first application and a resource file corresponding to the first application can be transmitted externally. After determining that the first application is not installed locally, the second terminal receives the first application and the resource file corresponding to the first application. This enables transmission of resource files between the first terminal and the second terminal, avoids cumbersome operations of transmitting resource files, and improves the efficiency of transmission of resource files.

Based on the same inventive concept, an embodiment of the present disclosure further provides a resource file transmission apparatus. The transmission apparatus may be a chip or a system-on-chip in the first terminal, or may be a functional module in the first terminal for implementing the method described in each of the above embodiments. The resource file transmission apparatus may implement the functions performed by the electronic devices in the above respective embodiments, and these functions may be implemented by executing corresponding software by means of hardware. These hardware or software parts include one or more modules corresponding to the above functions.

FIG. 5 is a schematic structural diagram of a resource file transmission apparatus in an embodiment of the present disclosure. Referring to FIG. 5, the resource file transmission apparatus 500 includes: an obtaining module 501 configured to obtain application information about a first application, where the first application is an application in a second terminal that needs to acquire a resource file; an execution module 502 configured to obtain a locally saved resource file associated with the first application according to the application

information about the first application, where the resource file is a file necessary for the first application during running; and an output module 503 configured to send at least the resource file of the first application to the second terminal.

In some possible implementation modes, the obtaining module 501 is further configured to: receive a file request message sent from the second terminal, where the file request message includes first indication information, and the first indication information is used for indicating the first application; and obtain the application information about the first application according to the first indication information.

In some possible implementation modes, the obtaining module 501 is further configured to: acquire, before obtaining application information about the first application, resource files of a plurality of locally installed applications; and determine an application having a resource file satisfying a preset requirement from the plurality of applications as the first application.

In some possible implementation modes, the output module 503 is further configured to: determine that the first application is not installed on the second terminal; and send the first application and the resource file to the second terminal.

In some possible implementation modes, the execution module 502 is further configured to: determine, according to the application information about the first application, that the first application is locally installed; and acquire a resource file associated with the first application from a local installation directory of the first application.

It should be noted that the specific processes of implementation of the obtaining module 501, the execution module 502, and the output module 503 may be understood with reference to the detailed description of the embodiments in FIG. 1, FIG. 3, and FIG. 4, and will not be repeatedly described herein for the sake of brevity of the specification.

Based on the same inventive concept, an embodiment of the present disclosure further provides a resource file transmission apparatus. The transmission apparatus may be a chip or a system-on-chip in the second terminal, or may be a functional module in the second terminal for implementing the method described

in each of the above embodiments. The resource file transmission apparatus may implement the functions performed by the electronic devices in the above respective embodiments, and these functions may be implemented by executing corresponding software by means of hardware. These hardware or software parts include one or more modules corresponding to the above functions.

FIG. 6 is a schematic structural diagram of another resource file transmission apparatus in an embodiment of the present disclosure. Referring to FIG. 6, the resource file transmission apparatus 600 includes: a reception module 601 configured to receive at least a resource file associated with a first application sent from a first terminal, where the first application is an application in a second terminal that needs to acquire a resource file; and an installation module 602 configured to add the resource file to an installation directory of the first application.

In some possible implementation modes, the reception module 601 is further configured to: send a file request message to the first terminal before receiving at least the resource file associated with the first application sent from the first terminal, where the file request message includes first indication information, and the first indication information is used for indicating the first application.

In some possible implementation modes, the reception module 601 is further configured to: receive the first application and the resource file sent from the first terminal.

In some possible implementation modes, the reception module 601 is further configured to: obtain, after receiving the first application and the resource file sent from the first terminal, application information about the first application; determine, according to the application information about the first application, that the first application is not installed; and install the first application.

It should be noted that the specific processes of implementation of the reception module 601 and the installation module 602 may be understood with reference to the detailed description of the embodiments in FIGS. 2 to 4, and will not be repeatedly described herein for the sake of brevity of the specification.

Based on the same inventive concept, an embodiment of the present disclosure provides a terminal, which may be the first terminal or the second terminal described in one or more embodiments described above. FIG. 7 is a schematic structural diagram of an electronic device in an embodiment of the present disclosure. Referring to FIG. 7, the terminal 700 may employ universal computer hardware and includes a processor 701 and a memory 702.

In some possible implementation modes, at least one processor may constitute any physical device having a circuit which performs logical operations on one or more inputs. For example, the at least one processor may include one or more integrated circuits (ICs), including an application specific integrated circuit (ASIC), a microchip, a microcontroller, a microprocessor, an entirety or part of a central processing unit (CPU), a graphics processing unit (GPU), a digital signal processor (DSP), a field programmable gate array (FPGA), or other circuits suitable for executing instructions or performing logical operations. Instructions to be executed by the at least one processor may, for example, be preloaded into a memory integrated with or embedded in a controller, or may be stored in a separate memory. The memory may include a random-access memory (RAM), a read-only memory (ROM), a hard disk, an optical disk, a magnetic medium, a flash memory, other permanent, fixed, or volatile memories, or any other mechanism capable of storing instructions. In some embodiments, the at least one processor may include more than one processor. Each processor may have a similar structure, or the processors may have different configurations that are electrically connected to or disconnected from one another. For example, the processors may be separate circuits or integrated in a single circuit. When more than one processor is used, the processors may be configured to operate independently or cooperatively. The processors may be coupled electrically, magnetically, optically, acoustically, mechanically, or by other means allowing them to interact with one another.

According to one embodiment of the present disclosure, the present disclosure further provides a computer-readable storage medium on which computer instructions are stored, where the instructions are executed by a processor to implement the steps of the resource file transmission methods described above.

The memory 702 may include computer storage media in the form of volatile and/or non-volatile memories, such as a read-only memory and/or a random-access memory. The memory 702 may store an operating system, APPs, other program modules, executable code, program data, user data, and the like.

In addition, computer-executable instructions for implementing the functions of the respective modules in FIG. 5 and FIG. 6 are stored in the above memory 702. The functions/implementation processes of the respective modules in FIG. 5 and FIG. 6 may be implemented by invoking the computer-executable instructions stored in the memory 702 by the processor 701 of FIG. 7. The specific implementation processes and functions may be understood with reference to the related embodiments described above.

Other embodiments of the present disclosure will be readily apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. The present disclosure is intended to cover any variations, uses, or adaptations of the present disclosure following the general principles of the present disclosure and including common knowledge or customary technical means in the technical field that are not disclosed in the present disclosure. It is intended that the specification and embodiments be considered as exemplary only, with a true scope and spirit of the present disclosure being indicated by the following claims.

It is to be understood that the present disclosure is not limited to the precise structures described above and illustrated in the accompanying drawings, and various modifications and changes may be made without departing from its scope. The scope of the present disclosure is limited only by the appended claims.

Industrial Applicability

The present disclosure provides a resource file transmission method, a resource file transmission apparatus, a device, and a storage medium. When application information about a first application is obtained by a first terminal, a locally saved resource file associated with the first application is sent to a second terminal, and the second terminal receives and stores the resource file sent from the first terminal. In this way, transmission of resource files is enabled between

the first terminal and the second terminal, thereby avoiding cumbersome operations of transmitting resource files and improving the efficiency of the transmission of resource files.

In addition, it can be understood that the resource file transmission method, the resource file transmission apparatus, the device, and the storage medium according to the present disclosure are reproducible and can be applied to a variety of industrial uses. For example, the resource file transmission method, the resource file transmission apparatus, the device, and the storage medium of the present disclosure can be used in the field of data transmission technologies.

What is claimed is:

1. A resource file transmission method, the method comprising:
 - obtaining application information about a first application by a first terminal, wherein the first application is an application in a second terminal that needs to acquire a resource file;
 - obtaining a locally saved resource file associated with the first application according to the application information about the first application by the first terminal, wherein the resource file is a file necessary for the first application during running; and
 - sending at least the resource file of the first application to the second terminal by the first terminal.
2. The method according to claim 1, wherein the step of obtaining application information about a first application by a first terminal comprises:
 - receiving a file request message sent from the second terminal by the first terminal, wherein the file request message comprises first indication information, and the first indication information is used for indicating the first application; and
 - obtaining the application information about the first application according to the first indication information by the first terminal.
3. The method according to claim 2, wherein the file request message contains an explicit request instruction, and the first indication information contains an identifier indicating the first application.
4. The method according to any one of claims 1 to 3, wherein before obtaining the application information about the first application by the first terminal, the method further comprises:
 - acquiring resource files of a plurality of locally installed applications by the first terminal; and

determining an application having a resource file satisfying a preset requirement from the plurality of applications as the first application by the first terminal.

5. The method according to any one of claims 1 to 4, wherein the step of sending at least the resource file of the first application to the second terminal by the first terminal comprises:

determining, by the first terminal, that the first application is not installed on the second terminal; and

sending the first application and the resource file to the second terminal by the first terminal.

6. The method according to any one of claims 1 to 5, wherein the step of obtaining a locally saved resource file associated with the first application according to the application information about the first application by the first terminal comprises:

causing the first terminal to determine, according to the application information about the first application, that the first application is locally installed; and

acquiring a resource file associated with the first application from a local installation directory of the first application by the first terminal.

7. The method according to any one of claims 1 to 6, wherein the application information comprises: at least one of an application name, a version number, an associated resource file, and a resource file version number.

8. A resource file transmission method, the method comprising:

receiving at least a resource file associated with a first application sent from a first terminal by a second terminal, wherein the first application is an application in the second terminal that needs to acquire a resource file; and

adding the resource file to an installation directory of the first application by the second terminal.

9. The method according to claim 8, wherein before receiving at least the resource file associated with the first application sent from the first terminal by the second terminal, the method further comprises:

 sending a file request message to the first terminal by the second terminal, wherein the file request message comprises first indication information, and the first indication information is used for indicating the first application.

10. The method according to claim 8 or 9, wherein the step of receiving at least a resource file associated with a first application sent from a first terminal by a second terminal comprises:

 receiving the first application and the resource file sent from the first terminal by the second terminal.

11. The method according to claim 10, wherein after receiving the first application and the resource file sent from the first terminal by the second terminal, the method further comprises:

 obtaining application information about the first application by the second terminal;

 causing the second terminal to determine, according to the application information about the first application, that the first application is not installed thereon; and

 installing the first application on the second terminal.

12. A resource file transmission method, the method comprising:

 sending a file request message to a first terminal by a second terminal;

 obtaining application information about a first application according to the sent file request message by the first terminal;

 causing the first terminal to determine to send a resource file corresponding to the first application according to the application information about the first application;

 sending the resource file corresponding to the first application to the second terminal by the first terminal; and

receiving the resource file corresponding to the first application and adding the resource file to an installation directory of the first application by the second terminal.

13. A resource file transmission method, the method comprising:

obtaining application information about a first application according to locally installed applications by a first terminal;

obtaining a locally saved resource file associated with the first application according to the application information about the first application by the first terminal;

simultaneously sending the first application and the resource file corresponding to the first application to the second terminal by the first terminal;

determining, by the second terminal, that the first application is not installed locally;

receiving and installing the first application by the second terminal; and

receiving the resource file corresponding to the first application and adding the resource file to an installation directory of the first application by the second terminal.

14. A resource file transmission apparatus, the apparatus comprising:

an obtaining module, configured to obtain application information about a first application, wherein the first application is an application in a second terminal that needs to acquire a resource file;

an execution module, configured to obtain a locally saved resource file associated with the first application according to the application information about the first application, wherein the resource file is a file necessary for the first application during running; and

an output module, configured to send at least the resource file of the first application to the second terminal.

15. The apparatus according to claim 14, wherein the obtaining module is further configured to: receive a file request message sent from the second terminal, wherein the file request message comprises first indication information, and the first indication information is used for indicating the first application; and obtain the application information about the first application according to the first indication information.
16. The apparatus according to claim 14 or 15, wherein the obtaining module is further configured to: acquire, before obtaining application information about the first application, resource files of a plurality of locally installed applications; and determine an application having a resource file satisfying a preset requirement from the plurality of applications as the first application.
17. The apparatus according to any one of claims 14 to 16, wherein the output module is further configured to: determine that the first application is not installed on the second terminal; and send the first application and the resource file to the second terminal.
18. The apparatus according to any one of claims 14 to 17, wherein the execution module is further configured to: determine, according to the application information about the first application, that the first application is locally installed; and acquire a resource file associated with the first application from a local installation directory of the first application.
19. A resource file transmission apparatus, the apparatus comprising:
 - a reception module, configured to receive at least a resource file associated with a first application sent from a first terminal, wherein the first application is an application in a second terminal that needs to acquire a resource file; and
 - an installation module, configured to add the resource file to an installation directory of the first application.
20. The apparatus according to claim 19, wherein the reception module is further configured to: send a file request message to the first terminal before receiving at least the resource file associated with the first application sent

from the first terminal, wherein the file request message comprises first indication information, and the first indication information is used for indicating the first application.

21. The apparatus according to claim 19 or 20, wherein the reception module is further configured to: receive the first application and the resource file sent from the first terminal.
22. The apparatus according to claim 21, wherein the reception module is further configured to: obtain, after receiving the first application and the resource file sent from the first terminal, application information about the first application; determine, according to the application information about the first application, that the first application is not installed; and install the first application.
23. A terminal, comprising:
 - a memory configured to store processor-executable instructions; and
 - a processor, wherein the processor is configured to implement the method according to any one of claims 1 to 13 when executing the executable instructions.
24. A computer-readable storage medium, on which an executable program is stored, wherein the method according to any one of claims 1 to 13 is implemented when the executable program is executed by a processor.