

PRODUCT UPGRADE METHOD, ELECTRONIC DEVICE, STORAGE MEDIUM, AND SYSTEM

TECHNICAL FIELD

[0001] This specification relates to the field of Internet technologies, and in particular, to a
5 product upgrade method, an electronic device, a storage medium, and a system.

BACKGROUND

[0002] With rapid development of science and technology and wide popularization of the
Internet, a POS device becomes a carrier of a payment solution product. Based on the payment
solution product, the POS device can implement a payment function, or can implement a series of
10 functions from order placing to payment.

[0003] The payment solution product in the POS device may need to be upgraded over time.
In the conventional technology, the upgrade is mainly implemented by returning the POS device
to the factory.

[0004] However, the above-mentioned factory-return upgrade manner has at least the
15 following disadvantages: lack of upgrade intelligence and being highly time-consuming and labor-
intensive.

[0005] It is worthwhile to note that, content of the related technology is merely information
known to the inventor, and neither means that the information has entered a public domain before
an application date of this specification, nor means that the information can become a conventional
20 technology of this specification.

SUMMARY

[0006] This specification provides a product upgrade method, an electronic device, a storage
medium, and a system, to avoid at least one of the above-mentioned technical problems.

[0007] According to a first aspect, this specification provides a product upgrade method,
25 applied to a server in a product upgrade system. The product upgrade system further includes a

plurality of POS devices that are communicatively connected to the server, each POS device is installed with a payment solution product, and the method is used to upgrade the payment solution product. The method includes: determining, based on version information to be ungraded to, upgrade indication information corresponding to a target POS device, where the target POS device is a POS device that has an upgrade requirement in the plurality of POS devices; and sending the upgrade indication information to the target POS device, to guide, based on the upgrade indication information, the target POS device to upgrade a current version to a version to be ungraded to.

[0008] According to a second aspect, this specification provides a product upgrade method, applied to a target POS device in a product upgrade system. The product upgrade system includes a server and a plurality of POS devices that are communicatively connected to the server, each POS device is installed with a payment solution product, the target POS device is a POS device that is determined by the server from the plurality of POS devices based on version information to be ungraded to and that has an upgrade requirement, and the method is used to upgrade the payment solution product. The method includes: obtaining upgrade indication information sent by the server; and upgrading a current version of the target POS device to a version to be upgraded to based on the upgrade indication information.

[0009] According to a third aspect, this specification provides an electronic device serving as a server in a product upgrade system. The product upgrade system further includes a plurality of POS devices that are communicatively connected to the server, and each POS device is installed with a payment solution product. The electronic device includes at least one storage medium that stores at least one instruction set, and at least one processor that is communicatively connected to the at least one storage medium. When running, the at least one processor reads the at least one instruction set, and performs the following operations based on an instruction of the at least one instruction set: determining, based on version information to be upgraded to, upgrade indication information corresponding to a target POS device, where the target POS device is a POS device that has an upgrade requirement in the plurality of POS devices; and sending the upgrade indication information to the target POS device, to guide, based on the upgrade indication information, the target POS device to upgrade a current version to a version to be upgraded to.

[0010] According to a fourth aspect, this specification provides an electronic device serving as a target POS device in a product upgrade system. The product upgrade system includes a server and a plurality of POS devices that are communicatively connected to the server, each POS device

is installed with a payment solution product, and the target POS device is a POS device that is determined by the server from the plurality of POS devices based on version information to be upgraded to and that has an upgrade requirement. The electronic device includes at least one storage medium that stores at least one instruction set, and at least one processor that is communicatively connected to the at least one storage medium. When running, the at least one processor reads the at least one instruction set, and performs the following operations based on an instruction of the at least one instruction set: obtaining upgrade indication information sent by the server; and upgrading a current version of the target POS device to a version to be upgraded to based on the upgrade indication information.

[0011] According to a fifth aspect, this specification provides a computer-readable non-transitory storage medium. The computer-readable non-transitory storage medium stores at least one instruction set, and the at least one instruction set is executed by at least one processor to implement the method according to the first aspect or the second aspect.

[0012] According to a sixth aspect, this specification provides a product upgrade system. The product upgrade system includes a server and a plurality of POS devices that are communicatively connected to the server, and each POS device is installed with a payment solution product. The server is configured to: determine, based on version information to be upgraded to, upgrade indication information corresponding to a target POS device, where the target POS device is a POS device that has an upgrade requirement in the plurality of POS devices; and send the upgrade indication information to the target POS device, to guide, based on the upgrade indication information, the target POS device to upgrade a current version to a version to be upgraded to. The target POS device is configured to: obtain the upgrade indication information sent by the server, and upgrade the current version of the target POS device to the version to be upgraded to based on the upgrade indication information.

[0013] It can be learned from the above-mentioned technical solutions that, according to the product upgrade method, the electronic device, the storage medium, and the system provided in this specification, a POS device that needs to be upgraded is determined by a server from a plurality of POS devices, and a payment solution product of an old version in the POS device that needs to be upgraded is upgraded through interaction between the server and the POS device that needs to be upgraded. There is no need to return a POS device that needs to be upgraded to the factory, thereby implementing an intelligent product upgrade. In addition, the POS device does not need

to be returned to the factory, and the product is ungraded through interaction between the server and the POS device. Therefore, efficiency and timeliness of a product upgrade are improved.

[0014] Other functions of the product upgrade method, the electronic device, the storage medium, and the system provided in this specification are listed in the following descriptions.

5 Creative aspects of the product upgrade method, the electronic device, the storage medium, and the system provided in this specification can be fully explained by practice or by using the methods, apparatuses, and combinations described in the following detailed examples.

BRIEF DESCRIPTION OF DRAWINGS

[0015] To describe the technical solutions in the embodiments of this specification more
10 clearly, the following briefly describes the accompanying drawings needed for describing the embodiments. Clearly, the accompanying drawings in the following description show merely some embodiments of this specification, and a person of ordinary skill in the art can still derive other drawings from these accompanying drawings without creative efforts.

[0016] FIG. 1 is a schematic diagram of an application scenario of a product upgrade method
15 according to an embodiment of this specification;

[0017] FIG. 2 is a schematic diagram of a structure of an electronic device according to an embodiment of this specification;

[0018] FIG. 3 is a schematic diagram of interaction in a product upgrade method according to an embodiment of the present specification;

20 [0019] FIG. 4 is a schematic diagram of interaction in a product upgrade method according to another embodiment of the present specification; and

[0020] FIG. 5 is a schematic diagram of a display interface of a target POS device according to an embodiment of this specification.

DESCRIPTION OF EMBODIMENTS

25 [0021] Example embodiments are described herein in detail, and examples are shown in the accompanying drawings. When the following description relates to the accompanying drawings, unless specified otherwise, same numbers in different accompanying drawings represent same or similar elements. Implementations described in the following example embodiments do not

represent all implementations consistent with this specification. On the contrary, they are merely examples of apparatuses and methods that are described in the appended claims in details and consistent with some aspects of this specification.

[0022] It should be understood that the terms "include" and "have" in the embodiments of this specification and any variants thereof are intended to cover the non-exclusive inclusion, for example, a product or device that includes a series of components are not necessarily limited to those components that are clearly listed, but can include other components that are not clearly listed or inherent to such product or device.

[0023] In the embodiments of this specification, the term "and/or" describes an association relationship between associated objects and indicates that three relationships can exist. For example, "A and/or B" can indicate the following three cases: Only A exists, both A and B exist, and only B exists. The character "/" generally indicates an "or" relationship between the associated objects.

[0024] In the embodiments of this specification, the term "a plurality of" refers to two or more, and other quantifiers are similar to this term.

[0025] The terms "first", "second", "third", etc. in this specification are used to distinguish between similar or same objects or entities, and do not necessarily mean limiting a specific order or sequence, unless otherwise indicated. It should be understood that the terms used in such a way are interchangeable in appropriate cases, for example, can be implemented in an order other than those illustrated or described in the embodiments of this specification.

[0026] The term "unit/module" used in this specification means any known or later developed hardware, software, firmware, artificial intelligence, fuzzy logic, or a combination of hardware code or/and a combination of software code, and can perform functions related to the element.

[0027] To facilitate readers' understanding of this specification, application scenarios of this specification are described.

[0028] The technical solutions provided in this specification are applicable to a scenario in which a payment solution product in a POS device is upgraded. The POS device can provide an order placing service for a merchant, and can also provide a payment (or cashier) service. Alternatively, the POS device provides only a payment service for a merchant. This is not limited in this specification.

[0029] In an offline payment scenario, a POS device purchased by a merchant is installed with

a payment solution product, such as one-stop scenario+payment solution—digital service. Correspondingly, the POS device installed with the payment solution product can implement a series of service functions from order placing to payment, or can implement at least a payment service function.

5 **[0030]** The payment solution product may correspond to different versions in different time periods. For example, the merchant may have a new requirement for the payment solution product. For another example, some bugs in the payment solution product may need to be restored, etc. Examples are not listed one by one herein.

10 **[0031]** In other words, a payment solution product of a new version may be launched over time. In this way, the payment solution product installed in the POS device held by the merchant becomes a payment solution product of an old version. Correspondingly, a scenario in which the payment solution product of the old version in the POS device is upgraded includes at least the following three scenarios.

15 **[0032]** Upgrade scenario (1): A payment solution product of a new version is launched, but the old version can continue to be used. Therefore, the payment solution product of the old version installed in the POS device may be updated to the payment solution product of the new version, or may not be updated.

20 **[0033]** Upgrade scenario (2): A payment solution product of a new version is launched, and at least some original old versions cannot continue to be used. Therefore, a payment solution product in a POS device installed with an old version that cannot continue to be used needs to be upgraded to the new version. A payment solution product in a POS device installed with an old version that can continue to be used may be upgraded to the new version, or may not be upgraded.

25 **[0034]** Upgrade scenario (3): A POS device that needs to be upgraded is regularly or irregularly checked. Herein, "need to be upgraded" may be "necessarily upgraded" (for example, an old version installed in a POS device cannot continue to be used), or may be "can be upgraded" (for example, an old version installed in a POS device can continue to be used). Unless otherwise specially specified in this specification, "need to be upgraded" generally includes the above-mentioned two meanings.

30 **[0035]** Therefore, how to upgrade a payment solution product of an old version installed in a POS device held by a merchant becomes a problem of great concern.

[0036] With reference to the above-mentioned description of the background, it can be learned,

in actual application, a manufacturer of the POS device can notify, via a call, an email, etc., the merchant to return the POS device to the factory, to upgrade the payment solution product of the old version in the POS device in a factory-return manner.

[0037] However, the above-mentioned factory-return upgrade manner has at least the following disadvantages: lack of upgrade intelligence and being highly time-consuming and labor-intensive.

[0038] It is worthwhile to note that, content of the related technology is merely information known to the inventor, and neither means that the information has entered a public domain before an application date of this specification, nor means that the information can become a conventional technology of this specification.

[0039] Therefore, to avoid at least one of the above-mentioned technical problems, this specification proposes a technical concept with creative efforts: A product upgrade system includes a server and a plurality of POS devices that are communicatively connected to the server. Each POS device is installed with a payment solution product. The server determines, from the plurality of POS devices, a POS device that needs to be upgraded, and a payment solution product of an old version in the POS device that needs to be upgraded is upgraded through interaction between the server and the POS device that needs to be upgraded.

[0040] Through the above-mentioned technical solution, an intelligent product upgrade is implemented without returning the POS device to the factory. In addition, the POS device does not need to be returned to the factory, and the product is upgraded through interaction between the server and the POS device. Therefore, efficiency and timeliness of a product upgrade are improved.

[0041] FIG. 1 is a schematic diagram of an application scenario of a product upgrade method according to an embodiment of this specification. As shown in FIG. 1, the application scenario 100 can include a product upgrade system, and the product upgrade system includes a server and N POS devices that are communicatively connected to the server. N is an integer greater than 1. As shown in FIG. 1, one merchant can correspond to one POS device.

[0042] The server can be a server that provides various services. For example, the server can be a cloud server or a local server.

[0043] The server can determine, from the N POS devices, a POS device that has an upgrade requirement. The POS device that has an upgrade requirement may be one of the N POS devices, or may be more of the N POS devices.

[0044] When there is one POS device that has an upgrade requirement, the server can interact with the POS device that has an upgrade requirement, to upgrade an old version of payment solution product in the POS device.

[0045] Similarly, when there are a plurality of POS devices that have an upgrade requirement, the server can interact with each POS device that has an upgrade requirement, to upgrade an old version of payment solution product in the POS device that has an upgrade requirement.

[0046] A network is a medium configured to provide a communication connection between the POS device and the server. The network can facilitate exchange of information or data.

[0047] In some embodiments, the network can be any type of wired or wireless network, or a combination thereof. For example, the network can include a cable network, a wired network, an optical fiber network, a telecommunications network, an intranet, an internet, a local area network (LAN), a wide area network (WAN), a wireless local area network (WLAN), a metropolitan area network (MAN), a public switched telephone network (PSTN), a Bluetooth networkTM, a short-range wireless network (ZigBeeTM), a near field communication (NFC) network, or a similar network.

[0048] In some embodiments, the network can include one or more network access points. For example, the network can include a wired or wireless network access point, for example, a base station or an Internet switching point. Through the access point, one or more components of the POS device and the server can be connected to the network to exchange data or information.

[0049] It is worthwhile to note that the above-mentioned description of the application scenario of the technical solution provided in this specification is merely used to describe, by way of example, an application scenario to which the technical solution in this specification is applicable, and cannot be understood as a limitation on the application scenario.

[0050] FIG. 2 is a diagram of a hardware structure of an electronic device 200 according to an embodiment of this specification. In some embodiments, the electronic device 200 can be the POS device or the server in FIG. 1.

[0051] As shown in FIG. 2, the electronic device 200 can include at least one storage medium 203 and at least one processor 202. In some embodiments, the electronic device 200 can further include a communication port 204 and an internal communication bus 201. The electronic device 200 can further include an I/O component 205.

[0052] The internal communication bus 201 can be connected to different system components.

For example, the internal communication bus 201 can be connected to the storage medium 203, the processor 202, the communication port 204, and the I/O component 205.

[0053] The I/O component 205 supports input/output between the electronic device 200 and another component.

5 **[0054]** The communication port 204 is used for data communication between the electronic device 200 and the outside. For example, the communication port 204 can be used for data communication between the electronic device 200 and a network. The communication port 204 can be a wired communication port, or can be a wireless communication port.

[0055] The storage medium 203 can include a data storage apparatus. The data storage apparatus can be a non-transitory storage medium, or can be a transitory storage medium. For example, the data storage apparatus can include one or more of a disk 2031, a read-only storage medium (ROM) 2032, or a random access storage medium (RAM) 2033. The storage medium 203 further includes at least one instruction set stored in the data storage apparatus. The instruction set includes computer program code. The computer program code can include a program, a routine, 10 an object, a component, a data structure, a process, a module, etc. for performing the product upgrade method provided in this specification.

[0056] The at least one processor 202 can be communicatively connected to the at least one storage medium 203. The at least one processor 202 is configured to execute the at least one instruction set. When the electronic device 200 runs, the at least one processor 202 reads the at least one instruction set and performs, based on an instruction of the at least one instruction set, the product upgrade method provided in this specification. The processor 202 can perform all steps included in the product upgrade method. The processor 202 can be in a form of one or more processors. In some embodiments, the processor 202 can include one or more hardware processors, for example, a microcontroller, a microprocessor, a reduced instruction set computer (RISC), an application-specific integrated circuit (ASIC), an application-specific instruction set processor (ASIP), a central processing unit (CPU), a graphics processing unit (GPU), a physical processing unit (PPU), a microcontroller unit, a digital signal processor (DSP), a field programmable gate array (FPGA), an advanced RISC machine (ARM), a programmable logic device (PLD), any 25 circuit, processor, etc. that can perform one or more functions, or any combination thereof.

30 **[0057]** For only the purpose of describing the problem, only one processor 202 is shown in the electronic device 200 in the accompanying drawings. However, it should be noted that the

electronic device 200 in this specification can further include a plurality of processors. Therefore, the operations and/or method steps disclosed in this specification can be performed by one processor or can be jointly performed by a plurality of processors. For example, if the processor 202 in the electronic device 200 described in this specification performs step A and step B, it should be understood that step A and step B can also be performed jointly or separately by two different processors 202 (for example, a first processor performs step A, a second processor performs step B, or a first processor and a second processor jointly perform steps A and B).

[0058] Referring to FIG. 3, FIG. 3 is a schematic diagram of interaction in a product upgrade method according to an embodiment of this specification. With reference to the above-mentioned analysis, it can be learned that the product upgrade method can be applied to a product upgrade system. The product upgrade system includes a server and a plurality of POS devices that are communicatively connected to the server. Each POS device is installed with a payment solution product. The product upgrade method provided in this specification is used to upgrade a payment solution product in a POS device that needs to be upgraded.

[0059] As shown in FIG. 3, the method includes the following S301 to S303.

[0060] S301: The server determines, based on version information to be upgraded to, upgrade indication information corresponding to a target POS device, where the target POS device is a POS device that has an upgrade requirement in the plurality of POS devices.

[0061] Version information can include a version number consisting of numbers and/or letters.

The version number can be incremented according to a certain rule to represent different iterations of a payment solution product.

[0062] The version information to be upgraded to can be understood as a version number of a version to be upgraded to, for example, a version number of a latest version of a payment solution product. A payment solution product of the version to be upgraded to may include a new function, performance optimization, a security patch, etc.

[0063] The target POS device is at least one of the plurality of POS devices, and is specifically a POS device that has an upgrade requirement in the plurality of POS devices. For example, with reference to the above-mentioned example and FIG. 1, if a POS device 1 is a POS device that has an upgrade requirement, the POS device 1 is a target device. If both the POS device 1 and a POS device 2 are POS devices that have an upgrade requirement, both the POS device 1 and the POS device 2 are target POS devices.

[0064] The upgrade indication information can be understood as information used to indicate the target POS device to upgrade a version.

[0065] In other words, S301 can be understood as follows: The server can determine, from a large quantity of POS devices, upgrade indication information of a target POS device that has an upgrade requirement, so that the target POS device upgrades, based on the upgrade indication information, a version of a payment solution product currently used by the target POS device to a version to be upgraded to.

[0066] In some embodiments, as shown in FIG. 4, S301 can include the following S3011 and S3012.

[0067] S3011: The server obtains current version information separately corresponding to the POS devices.

[0068] The current version information can be understood as a version number of a payment solution product currently used by the POS device.

[0069] With reference to the above-mentioned example and FIG. 1, if the plurality of devices that are communicatively connected to the server are the N POS devices shown in FIG. 1, the server can obtain the current version information of each POS device based on a communication link between the server and the POS device.

[0070] For example, the N POS devices can separately report the corresponding current version information to the server. Therefore, the server can obtain the current version information separately corresponding to the N POS devices.

[0071] In some embodiments, the server stores an information list corresponding to the N POS devices, where the information list includes the current version information of each POS device. The server can read, from the information list, the current version information separately corresponding to the POS devices.

[0072] For example, with reference to FIG. 1 and the above-mentioned example, for the information list, refer to Table 1.

Table 1

Merchant information	POS device information	Current version information
Merchant 1	POS device 1	Version number 03

Merchant information	POS device information	Current version information
...	...	...
Merchant N	POS device N	Version number 05

[0073] As shown in Table 1, the information list includes information about a merchant (the merchant information in Table 1), information about a POS device in a hardware dimension (the POS device information in Table 1), and version information (the current version information in Table 1) of a payment solution product installed in a POS device.

[0074] Therefore, in some embodiments, when a version to be upgraded to, such as a new version, is released for the payment solution product, the server can obtain, from the information list shown in Table 1, the current version information separately corresponding to the POS devices, so that the POS devices upgrade the payment solution product from a current version to the new version.

[0075] Alternatively, in some other embodiments, when necessary (for example, checking whether there is a missing unupgraded POS device), the server can regularly or irregularly obtain, from the information list shown in Table 1, the current version information separately corresponding to the POS devices, so that a POS device that needs to be upgraded can be upgraded in time.

[0076] It is worthwhile to note that, the above-mentioned example and Table 1 are merely examples for describing a possible existence manner of Table 1 and content that may be included in Table 1, and cannot be understood as a limitation on Table 1. For example, Table 1 can further include an upgrade record of the POS device.

[0077] In addition, in actual application, there may be a relatively large quantity of POS devices connected to the serve. To further implement reliability and validity of a product upgrade, in some embodiments, the information list can further include a grayscale attribute of each POS device, where the grayscale attribute includes at least one of an application scenario type, area information, language information, time zone information, and an upgrade channel. S3011 can include: obtaining, from the information list, current version information separately corresponding to the POS devices in at least one grayscale attribute.

[0078] The application scenario type can be understood as a usage scenario of the POS device, for example, an application field, and specifically, a food and beverage industry. The area

information can be understood as an area in which the POS device is located. The area can be divided by using a city as a granularity, or can be divided at a larger or smaller granularity. The language information can be understood as language information of an area corresponding to the POS device. The time zone information can be understood as a time zone in which the POS device is located. The upgrade channel can be understood as a way (such as a corresponding application store) to deploy a new software version (such as the version to be upgraded to) to the target POS device.

[0079] In this embodiment, the application scenario type, the area information, the language information, the time zone information, and the upgrade channel can be understood as upgrading, from different dimensions, a payment solution product installed in a POS device in a corresponding dimension. In addition, the product upgrade system can upgrade a product from a single dimension, or can upgrade a product from a plurality of dimensions.

[0080] For example, the product upgrade system can upgrade a payment solution product in a POS device in a corresponding area by using the area information as a product upgrade coverage area. The product upgrade system can alternatively upgrade a payment solution product in a POS device in a corresponding area range and a corresponding scenario by using the area information and the application scenario type as a product upgrade coverage area.

[0081] In other words, through the product upgrade method provided in this specification, a POS device can be upgraded comprehensively, or some POS devices can be upgraded specifically, thereby implementing flexibility and diversity of a product upgrade.

[0082] S3012: The server determines, based on the version information to be upgraded to and the current version information separately corresponding to the POS devices, the upgrade indication information corresponding to the target POS device.

[0083] With reference to the above-mentioned analysis, after obtaining, from the information list, the current version information separately corresponding to the N POS devices, the server can generate the upgrade indication information of the target POS device in the N POS devices with reference to the version information to be upgraded to.

[0084] With reference to the above-mentioned analysis for S3011 and S3012, it can be learned that in this embodiment, the server determines, based on the current version information of the POS devices and the version information to be upgraded to, upgrade indication information of a POS device that has an upgrade requirement, so that the POS device that has an upgrade

requirement can be upgraded effectively and reliably.

[0085] In some embodiments, with reference to FIG. 4, it can be learned that S3012 can include the following step 1 to step 3.

[0086] Step 1: The server separately compares the current version information separately corresponding to the POS devices with the version information to be upgraded to, to determine, from the POS devices, the target POS device that needs to be upgraded.

[0087] For example, for each of the POS devices, the server can compare whether a current version number of the POS device is lower than a version number to be upgraded to. If the current version number of the POS device is lower than the version number to be upgraded to, the server can determine that the POS device needs to be upgraded, that is, the POS device is the target POS device. Otherwise, the POS device does not need to be upgraded.

[0088] For example, the version to be upgraded to is a latest developed payment solution product. With reference to the above-mentioned example and Table 1, the current version information of the POS device 1 is the version number 03, and the current version information of the POS device N is the version number 05. If the version information to be upgraded to is a version number 06, the server can separately compare the version number 03 and the version number 05 with the version number 06 to determine that both the POS device 1 and the POS device N are target POS devices.

[0089] For another example, the server maintains payment solution products of a plurality of different versions, for example, maintains payment solution products of the version number 03 to the version number 05. The version to be upgraded to is performance optimization of the payment solution product of the version number 03. If the version information to be upgraded to is a version number 03+1, the server can determine that the POS device 1 is the target POS device, and the POS device N is a POS device (that is, a non-target POS device) that does not need to be upgraded.

[0090] Step 2: The server generates an upgrade policy for the target POS device.

[0091] The upgrade policy can be understood as an upgrade solution, and is used to represent how to upgrade the target POS device. For example, the upgrade policy can include an upgrade time window (such as a non-peak merchant business hour), an upgrade manner (such as an online update or an offline update), an upgrade channel, etc.

[0092] Step 3: The server generates the upgrade indication information based on the upgrade policy, where the upgrade indication information is used to indicate the target POS device to

perform an upgrade based on the upgrade policy.

[0093] For example, the upgrade indication information enables the target POS device to upgrade a payment solution product of a current version in the target POS device based on the upgrade policy, to upgrade the payment solution product of the current version to a payment solution product of the version to be upgraded to.

[0094] With reference to the above-mentioned analysis for step 1 to step 3, it can be learned that in this embodiment, the server determines the target POS device by comparing version numbers, to ensure that only POS devices that indeed need to update their payment solution products are selected for upgrade, thereby avoiding unnecessary operations and reducing system burden. In addition, the upgrade policy is generated to perform an upgrade based on the upgrade policy, so that corresponding upgrade solutions can be customized for different target POS devices, thereby improving flexibility, a success rate, and efficiency of the upgrade.

[0095] S302: The server sends the upgrade indication information to the target POS device.

[0096] Correspondingly, the target POS device receives the upgrade indication information sent by the server.

[0097] S303: The target POS device upgrades the current version of the target POS device to the version to be upgraded to based on the upgrade indication information.

[0098] For example, after receiving the upgrade indication information, the target POS device can complete an upgrade of the payment solution product of the current version based on the upgrade indication information, to obtain the payment solution product of the version to be upgraded to.

[0099] With reference to FIG. 4, it can be learned that in some embodiments, S302 can include a case (1).

[0100] Case 1: The server sends an upgrade instruction to the target POS device based on an obtained sending instruction, where the upgrade indication information includes the upgrade instruction.

[0101] The sending instruction can be initiated by a related employee. For example, the server includes an operation interface, and the operation interface includes a virtual button. The related employee can initiate the sending instruction to the server by tapping the virtual button. In response to the sending instruction triggered by the related employee, the server can send the upgrade instruction to the target POS device.

[0102] In some embodiments, the upgrade policy has an upgrade type, and the upgrade type is used to represent an upgrade urgency degree. The above-mentioned "Case (1): The server sends an upgrade instruction to the target POS device based on an obtained sending instruction" can include the following: If the upgrade type is an urgent type, the server sends the upgrade instruction to the target POS device when obtaining the sending instruction.

[0103] For example, the upgrade type can be an urgent type. The urgent type represents that the upgrade urgency degree is high, for example, an upgrade needs to be performed immediately. For a case in which an upgrade needs to be performed immediately, the related employee can trigger an urgent upgrade sending instruction. The server sends the upgrade instruction to the target POS device when obtaining the sending instruction, to immediately upgrade the target POS device.

[0104] Alternatively, if the server identifies that the upgrade type is an urgent type, the server can actively send a product upgrade instruction to the target POS device.

[0105] In other words, in a scenario in which an upgrade needs to be performed immediately, the server can send the upgrade instruction to the target POS device based on the sending instruction triggered by the related employee, or can send the upgrade instruction to the target POS device based on the urgent type identified by the server.

[0106] In some other embodiments, S302 can include a case (2). With reference to FIG. 4, it can be learned that the case (2) includes the following step 1 and step 2.

[0107] Step 1: The target POS device sends an asynchronous upgrade polling request to the server, where the upgrade polling request is used to poll whether there is a version that needs to be upgraded.

[0108] Correspondingly, the server receives the upgrade polling request sent by the target POS device.

[0109] Step 2: The server sends a polling result to the target POS device for the upgrade polling request, where the polling result is used to prompt that there is a product version that needs to be upgraded, and the upgrade indication information includes the polling result.

[0110] With reference to the above-mentioned analysis and FIG. 1, the N POS devices can respectively send asynchronous polling requests to the server to determine whether there is a product version that needs to be upgraded.

[0111] After receiving the polling requests, for the target POS device that needs to be upgraded, the server can feed back a polling result used to prompt that there is a product version that needs

to be upgraded. On the contrary, for a POS device that does not need to be upgraded, the server can feed back prompt information prompting that no upgrade is required.

[0112] With reference to the above-mentioned analysis, the upgrade policy has the upgrade type. The upgrade type may be the urgent type in the above-mentioned example, or may be a non-urgent type, for example, a type in which an upgrade does not need to be performed immediately. The case (2) can be understood as follows: If the upgrade type is a non-urgent type, the server sends the polling result to the target POS device for the upgrade polling request when obtaining the upgrade polling request.

[0113] In other words, the upgrade indication information is the upgrade instruction or the polling result. If the upgrade is of the urgent type, the server actively sends the upgrade instruction to the target POS device, so that the target POS device immediately upgrades a product. If the upgrade is of the non-urgent type, when receiving the upgrade polling request asynchronously sent by the target POS device, the server feeds back the polling result used to prompt that there is a product version that needs to be upgraded, so that the target POS device upgrades a product based on a requirement, randomly selected time, etc. Therefore, diversity, flexibility, and reliability of a product upgrade are improved.

[0114] In some embodiments, still referring to FIG. 4, it can be learned that after the target POS device obtains the upgrade indication information, S303 can be replaced with the following S303' to S307'.

[0115] S303': The target POS device compares the version information to be upgraded to with current version information of the target POS device.

[0116] S304': The target POS device sends an acquisition request to the server when a result of the comparison represents that an upgrade requirement exists, where the acquisition request is used to obtain the version to be upgraded to.

[0117] Correspondingly, the server receives the acquisition request sent by the target POS device.

[0118] Using the POS device 1 in FIG. 1 as an example, the POS device 1 compares a version number to be upgraded to with a current version number of the POS device 1. If the current version number of the POS device 1 is lower than the version number to be upgraded to, a result of the comparison indicates that the POS device 1 has an upgrade requirement, and the POS device 1 sends the acquisition request to the server. On the contrary, if the current version number of the

POS device 1 is higher than or equal to the version number to be upgraded to, the POS device 1 does not need to be upgraded, and the POS device 1 can feed back corresponding prompt information to the server or ignore the upgrade indication information.

[0119] S305': The server sends, to the target POS device, the version to be upgraded to.

5 [0120] Correspondingly, the target POS device receives the version to be upgraded to sent by the server.

[0121] S306': The target POS device upgrades the current version of the target POS device to the version to be upgraded to.

[0122] In other words, in this embodiment, when receiving the acquisition request sent by the
10 target POS device, the server can send, to the target POS device, the version to be upgraded to, so that the target POS device upgrades the current version installed in the target POS device to the version to be upgraded to.

[0123] In the above-mentioned example, the version to be upgraded to of the payment solution product is maintained in the server, so that when receiving the acquisition request sent by the target
15 POS device, the server feeds back, to the target POS device, the version to be upgraded to.

[0124] In some other embodiments, the server can guide the target POS device to obtain the version to be upgraded to. For example, when receiving the acquisition request sent by the target POS device, the server can send, to the target POS device, acquisition information indicating that the version to be upgraded to is obtained, such as an upgrade channel. Correspondingly, the target
20 POS device receives the acquisition information sent by the server, and obtains the version to be upgraded to based on the acquisition information, to upgrade the current version installed in the target POS device to the version to be upgraded to.

[0125] With reference to the above-mentioned analysis, the server can provide the version to be upgraded to for the target POS device. Alternatively, the server can provide an upgrade channel
25 for the target POS device, so that the target POS device obtains the version to be upgraded to based on the upgrade channel. Therefore, flexibility and diversity of a product upgrade can be improved.

[0126] With reference to the above-mentioned analysis, it can be learned that the upgrade channel can be reflected in the information list, that is, the information list can further include the upgrade channel. For example, in the information list shown in Table 1, upgrade channels
30 separately corresponding to the POS devices can be further recorded. Correspondingly, when receiving the acquisition request sent by the target POS device, the server queries Table 1 and sends

a found upgrade channel to the target POS device. The target POS device downloads the version to be upgraded to from the upgrade channel sent by the server, to upgrade the current version installed in the target POS device.

[0127] With reference to the above-mentioned analysis for S303' to S306', it can be learned that in this embodiment, the target POS device determines again whether to perform an upgrade, and performs the upgrade when a determining result is "yes", thereby implementing accuracy and reliability of the upgrade. In particular, for a scenario in which the version information to be upgraded to is optimization of a payment solution product of an old version, and the current version of the target POS device is a version higher than the version to be upgraded to, an upgrade requirement can be further accurately determined through S303' and S304', that is, upgrade reliability can be further improved.

[0128] With reference to the above-mentioned analysis, it can be learned that the upgrade indication information is used to indicate the target POS device to upgrade the payment solution product of the old version based on the upgrade policy. In addition, the upgrade policy can be understood as an upgrade solution for the target POS device to upgrade a product.

[0129] Therefore, in some embodiments, the upgrade policy can further have other attribute information. The other attribute information can include upgrade guidance information. The upgrade guidance information is used to represent how to complete an upgrade. For example, the upgrade guidance information can include an upgrade channel and a corresponding upgrade operation guide. Correspondingly, if the target POS device determines that the target POS device has an upgrade requirement, the target POS device can directly perform an upgrade based on the upgrade guidance information.

[0130] For example, the other attribute information includes an upgrade channel. If the target POS device determines that the target POS device has an upgrade requirement, the target POS device can directly obtain the version to be upgraded to based on the upgrade channel, and does not need to obtain the version to be upgraded to based on interaction between the target POS device and the server.

[0131] In some other embodiments, the other attribute information can further include a policy type and/or a content type. The policy type is used to represent an upgrade degree, and the content type is a new function or a function update. When receiving the upgrade indication information sent by the server, the target POS device can output the other attribute information.

[0132] The policy type output by the target POS device can prompt a degree of a current upgrade to the merchant, such as urgency of the upgrade. The policy type output by the target POS device can prompt content of the current upgrade to the merchant, for example, an upgraded payment solution product may have a new function, or the upgraded payment solution product may restore some previous function defects.

[0133] The merchant of the target POS device can perform feedback for the output other output attribute information. If the merchant of the target POS device feeds back an upgrade confirmation operation, the target POS device sends the acquisition request to the server. On the contrary, if the merchant of the target POS device feeds back an upgrade canceling operation, the target POS device does not send the acquisition request to the server, and does not perform an upgrade this time.

[0134] For example, the policy type can be a strong upgrade or a weak upgrade. The strong upgrade can represent that the target POS device should be upgraded. If the target POS device is not upgraded, some functions of the target POS device may not continue to be used. The strong upgrade is used as an example. As shown in FIG. 5, the target POS device can output a strong upgrade prompt of the through a display interface, and output a virtual button that is used by the merchant of the target POS device to perform feedback for the prompt. If the merchant of the target POS device taps a virtual button "OK", the target POS device sends the acquisition request to the server. On the contrary, if the merchant of the target POS device taps a virtual button "Cancel", the target POS device does not send the acquisition request to the server.

[0135] With reference to the above-mentioned example, it can be learned that the upgrade policy has an upgrade type, such as an urgent type or a non-urgent type. In some embodiments, the urgent type has a correspondence with the strong upgrade. For example, if an upgrade type of an upgrade is the urgent type, a policy type of the upgrade is the strong upgrade.

[0136] However, this example is only used to illustrate the possibility of the existence of the correspondence, and cannot be understood as inevitability. This can be specifically determined based on a scenario, an update record, etc., and is not limited in this specification.

[0137] The content type can be new function content, or can be updated function content. Using the new function content as an example, the target POS device can output the new function content through a display interface to describe a new function, and output a virtual button that is used by the merchant of the target POS device to perform feedback for the prompt. If the merchant

of the target POS device taps a virtual button "OK", the target POS device sends the acquisition request to the server. On the contrary, if the merchant of the target POS device taps a virtual button "Cancel", the target POS device does not send the acquisition request to the server.

[0138] It is worthwhile to note that, when receiving the upgrade indication information sent by the server, the target POS device can first perform S303', so that the target POS device performs the above-mentioned interaction with the merchant when the result of the comparison represents that an upgrade requirement exists. Alternatively, the target POS device can first perform the above-mentioned interaction with the merchant, so that the target POS device performs S303' when the merchant taps the virtual button "OK".

[0139] In this embodiment, the target POS device outputs the other attribute information, such as the upgrade degree (that is, an importance degree) and the content type (an approximate condition of upgrade content), to interact with the merchant based on the other attribute information, and performs an upgrade through an interaction result, to implement upgrade flexibility, satisfy a use requirement of the merchant, and improve upgrade experience of the merchant.

[0140] The above-mentioned example is a description of a product upgrade from a dimension of interaction between the merchant and the target POS device based on the other attribute information. In some other embodiments, the product upgrade can also be completed by identifying the other attribute information by the target POS device. For example, the attribute information includes the policy type.

[0141] When the target POS device identifies that the policy type is a strong upgrade, the target POS device can send the acquisition request to the server. When the target POS device identifies that the policy type is a weak upgrade, the target POS device may send the acquisition request to the server, or may not send the acquisition request to the server, which can be specifically determined based on an upgrade record, a performance status, etc.

[0142] In some embodiments, after completing the upgrade, the target POS device can asynchronously send an upgrade success instruction to the server. Correspondingly, the server receives the upgrade success instruction sent by the target POS device, and updates the current version information of the target POS device based on the upgrade success instruction. For example, the server updates a current version number of the target POS device to a version number to be upgraded to.

[0143] For example, with reference to the above-mentioned analysis, it can be learned that the server can store the information list shown in Table 1. Correspondingly, still referring to FIG. 4, it can be learned that the product upgrade method provided in this specification further includes the following S307' and S308'.

5 [0144] S307': The target POS device asynchronously sends an upgrade success instruction to the server in response to completion of the upgrade.

[0145] Correspondingly, the server receives the upgrade success instruction asynchronously sent by the target POS device.

10 [0146] S308': The server updates the current version information of the target POS device in the information list based on the upgrade success instruction.

[0147] For example, with reference to the above-mentioned example and Table 1, if the target POS device is the POS device 1, the current version information of the POS device 1 is the version number 03, and the version information to be upgraded to is the version number 06, when receiving the upgrade success instruction sent by the POS device 1, the server adjusts the version number 03
15 of the POS device 1 to the version number 06 to obtain an information list shown in Table 2.

Table 2

Merchant information	POS device information	Current version information
Merchant 1	POS device 1	Version number 06
...	...	...
Merchant N	POS device N	Version number 05

20 [0148] With reference to the above-mentioned analysis for S307' and S308', it can be learned that in this embodiment, the server can updates the information list in time to maintain accuracy and validity of the information list. Therefore, when there is an update requirement subsequently, the server can accurately determine a POS device that needs to be upgraded. In other words, continuous validity and reliability of the product upgrade can be improved.

[0149] It is worthwhile to note that, the above-mentioned examples are merely used to describe examples of a possible implementation of the product upgrade method in this specification, and
25 cannot be understood as a limitation on the implementation of the product upgrade method in this specification. For example, based on the above-mentioned technical concept, some of the above-

mentioned technical features can be combined to obtain a new embodiment, a new technical feature can be added based on the above-mentioned example to obtain a new embodiment, some technical features can be reduced based on the above-mentioned example to obtain a new embodiment, some technical features in the above-mentioned example can be replaced with other technical features, or some technical features and orders in the above-mentioned example can be adjusted to obtain a new embodiment. Examples are not listed one by one herein.

[0150] According to the above-mentioned technical concept, this specification further provides a computer-readable non-transitory storage medium. The computer-readable non-transitory storage medium stores at least one instruction set, and the at least one instruction set is executed by a processor to implement the steps of the produce upgrade method described in this specification.

[0151] In some possible implementations, various aspects of this specification can be further implemented in a form of a program product, including program code. When the program product runs on the electronic device 200, the program code is used to enable the electronic device 200 to perform the steps of the product upgrade method described in this specification. The program product configured to implement the above-mentioned method can be a portable compact disc read-only memory (CD-ROM) that includes program code, and can run on the electronic device 200. However, the program product in this specification is not limited thereto. In this specification, a readable storage medium can be any tangible medium that includes or stores a program, and the program can be used by or in combination with an instruction execution system. The program product can be any combination of one or more readable media. The readable medium can be a readable signal medium or a readable storage medium. For example, the readable storage medium can be but is not limited to an electrical system, apparatus, or device, a magnetic system, apparatus, or device, an optical system, apparatus, or device, an electromagnetic system, apparatus, or device, an infrared system, apparatus, or device, or a semiconductor system, apparatus, or device, or any combination thereof. More specific examples of the readable storage medium include an electrical connection including one or more conducting wires, a portable disk, a hard disk, a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory (EPROM) or a flash memory, an optical fiber, a portable compact disc read-only memory (CD-ROM), an optical storage device, a magnetic storage device, or any proper combination thereof. The computer-readable storage medium can include a data signal propagated in a baseband or as

a part of a carrier, and carries readable program code. The propagated data signal can be in a plurality of forms, and includes but is not limited to an electromagnetic signal, an optical signal, or any proper combination thereof. The readable storage medium can alternatively be any readable medium other than the readable storage medium, and the readable medium can send, propagate, or transmit a program used by or in combination with an instruction execution system, apparatus, or device. The program code included in the readable storage medium can be transmitted by using any proper medium, including but not limited to a wireless medium, a wired medium, an optical cable, an RF medium, or any proper combination thereof. Program code for performing the operations in this specification can be written by using any combination of one or more program design languages. The program design language includes an object-oriented program design language, for example, Java or C++, and further includes a conventional procedural program design language, for example, a "C" language, or a similar program design language. The program code can be completely executed on the electronic device 200, partially executed on the electronic device 200, executed as an independent software package, partially executed on the electronic device 200 and partially executed on a remote electronic device, or completely executed on a remote electronic device 200.

[0152] It should be noted that, collection, storage, use, processing, transmission, provision, disclosure, etc. of related information (for example, position information of a merchant) of a user in the technical solutions in this specification all comply with related laws and regulations, and do not violate public order and good morals.

[0153] Specific embodiments of this specification are described above. Other embodiments fall within the scope of the appended claims. In some cases, the actions or steps described in the claims can be performed in an order different from that in the embodiments and desired results can still be achieved. In addition, the process depicted in the accompanying drawings does not necessarily need a particular order or consecutive order to achieve the desired results. In some implementations, multitasking and parallel processing are possible or may be advantageous.

[0154] In conclusion, after reading the detailed disclosure, a person skilled in the art can understand that the detailed disclosure can be presented only by using an example, and can impose no limitation. Although it is not explicitly stated herein, a person skilled in the art can understand that the requirements of this specification include various proper changes, improvements, and modifications to the embodiments. These changes, improvements, and modifications are intended

to be provided in this specification, and fall within the spirit and scope of the example embodiments of this specification.

[0155] In addition, some terms in this specification are used to describe the embodiments of this specification. For example, "one embodiment", "embodiments", and/or "some embodiments" mean/means that specific features, structures, or characteristics described with reference to the embodiment can be included in at least one embodiment of this specification. Therefore, it can be emphasized and understood that two or more of "an embodiment", "one embodiment", or "alternative embodiments" referred in parts of this specification do not necessarily indicate the same embodiment. In addition, specific features, structures, or characteristics can be properly combined in one or more embodiments of this specification.

[0156] It should be understood that in the above-mentioned descriptions of the embodiments of this specification, to help understand a feature, for the purpose of simplifying this specification, various features are combined in a single embodiment, accompanying drawing, or description thereof in this specification. However, this does not mean that the combination of these features is necessary. It is entirely possible for a person skilled in the art to mark some devices and understand the devices as separate embodiments when reading this specification. In other words, the embodiments in this specification can also be understood as an integration of a plurality of secondary embodiments. Content of each secondary embodiment is also true when features are less than all features in one of the above-mentioned disclosed embodiments.

[0157] Each patent, patent application, publication of a patent application, and other materials, such as articles, books, specifications, publications, and documents (not including any historical review documents related to this specification) referred in this specification are all referred for all purposes related to this specification, for example, are all referred in this specification and the claims. However, the descriptions, definitions, and terms used in this specification shall prevail if there is any inconsistency or conflict between use of the descriptions, definitions, and/or the terms in the above-mentioned material and use of the descriptions, definitions, and/or the terms in this specification.

[0158] Finally, it should be understood that the principles of the implementation solutions of this specification are described in the implementation solutions of the application disclosed in this specification. Other modified embodiments also fall within the scope of this specification. Therefore, the embodiments disclosed in this specification are merely examples and not limitations.

A person skilled in the art can use an alternative configuration according to the embodiments of this specification to implement the application in this specification. Therefore, the embodiments of this specification are not limited to the embodiments accurately described in this specification.

CLAIMS

What is claimed is:

1. A product upgrade method, applied to a server in a product upgrade system, wherein the product upgrade system further comprises a plurality of POS devices that are communicatively
5 connected to the server, each POS device is installed with a payment solution product, and the method is used to upgrade the payment solution product; and the method comprises:

determining, based on version information to be upgraded to, upgrade indication information corresponding to a target POS device, wherein the target POS device is a POS device that has an upgrade requirement in the plurality of POS devices; and

10 sending the upgrade indication information to the target POS device, to guide, based on the upgrade indication information, the target POS device to upgrade a current version to a version to be upgraded to.

2. The method according to claim 1, wherein the guiding, based on the upgrade indication information, the target POS device to upgrade a current version to a version to be upgraded to
15 comprises:

obtaining an acquisition request sent by the target POS device for the upgrade indication information, wherein the acquisition request is used to obtain the version to be upgraded to, and the acquisition request is determined when the target POS device compares the version to be upgraded to with the current version of the target POS device and a result of the comparison
20 represents that an upgrade requirement exists; and

feeding back, to the target POS device, the version to be upgraded to, so that the target POS device upgrades the current version to the version to be upgraded to.

3. The method according to claim 1, wherein the determining, based on version information to be upgraded to, upgrade indication information corresponding to a target POS device comprises:

25 obtaining current version information separately corresponding to the POS devices; and

determining, based on the version information to be upgraded to and the current version information separately corresponding to the POS devices, the upgrade indication information corresponding to the target POS device.

4. The method according to claim 3, wherein the determining, based on the version
30 information to be upgraded to and the current version information separately corresponding to the

POS devices, the upgrade indication information corresponding to the target POS device comprises:

separately comparing the current version information separately corresponding to the POS devices with the version information to be upgraded to, to determine, from the POS devices, the target POS device that needs to be upgraded;

5 generating an upgrade policy for the target POS device; and

generating the upgrade indication information based on the upgrade policy, wherein the upgrade indication information is used to indicate the target POS device to perform an upgrade based on the upgrade policy.

10 5. The method according to claim 4, wherein the sending the upgrade indication information to the target POS device comprises:

sending an upgrade instruction to the target POS device based on an obtained sending instruction; or

15 obtaining an upgrade polling request sent by the target POS device, and sending a polling result to the target POS device for the upgrade polling request, wherein the polling result is used to prompt that there is a product version that needs to be upgraded, wherein the upgrade indication information is the upgrade instruction or the polling result.

6. The method according to claim 5, wherein the upgrade policy has an upgrade type, and the upgrade type is used to represent an upgrade urgency degree;

20 the sending an upgrade instruction to the target POS device based on an obtained sending instruction comprises: if the upgrade type is an urgent type, sending the upgrade instruction to the target POS device when the sending instruction is obtained; and

25 the obtaining an upgrade polling request sent by the target POS device, and sending a polling result to the target POS device for the upgrade polling request comprises: if the upgrade type is a non-urgent type, sending the polling result to the target POS device for the upgrade polling request when the upgrade polling request is obtained.

7. The method according to claim 4, wherein the upgrade policy further has other attribute information, and the other attribute information comprises at least one of a policy type, a content type, and an upgrade channel; the policy type is used to represent an upgrade degree; and the content type is new function content or updated function content; and

30 the other attribute information is used to obtain an upgrade operation that is performed by a merchant of the target POS device on the other attribute information, so that the target POS device

upgrades the current version of the target POS device to the version to be ungraded to based on the upgrade operation.

8. The method according to claim 3, wherein the server stores an information list corresponding to the plurality of POS devices, and the information list comprises the current
5 version information of each POS device; and the method further comprises:

obtaining an upgrade success instruction asynchronously sent by the target POS device; and
updating the current version information of the target POS device in the information list based
on the upgrade success instruction.

9. The method according to claim 8, wherein the information list further comprises a
10 grayscale attribute of each POS device, and the grayscale attribute comprises at least one of an application scenario type, area information, language information, time zone information, and an upgrade channel; and the obtaining current version information separately corresponding to the POS devices comprises:

obtaining, from the information list, current version information separately corresponding to
15 the POS devices in at least one grayscale attribute.

10. A product upgrade method, applied to a target POS device in a product upgrade system, wherein the product upgrade system comprises a server and a plurality of POS devices that are communicatively connected to the server, each POS device is installed with a payment solution product, the target POS device is a POS device that is determined by the server from the plurality
20 of POS devices based on version information to be ungraded to and that has an upgrade requirement, and the method is used to upgrade the payment solution product; and the method comprises:

obtaining upgrade indication information sent by the server; and
upgrading a current version of the target POS device to a version to be upgraded to based on
25 the upgrade indication information.

11. The method according to claim 10, wherein the upgrading a current version of the target POS device to a version to be upgraded to based on the upgrade indication information comprises:

comparing the version information to be ungraded to with current version information of the target POS device;

30 sending an acquisition request to the server when a result of the comparison represents that an upgrade requirement exists, wherein the acquisition request is used to obtain the version to be

upgraded to;

obtaining the version to be upgraded to fed back by the server for the acquisition request; and
upgrading the current version of the target POS device to the version to be upgraded to.

12. The method according to claim 10, wherein the obtaining upgrade indication information
5 sent by the server comprises:

obtaining an upgrade instruction sent by the server based on an obtained sending instruction;
or

obtaining, after sending an upgrade polling request to the server, a polling result sent by the
server based on the upgrade polling request, wherein the polling result is used to prompt that there
10 is a product version that needs to be upgraded, wherein

the upgrade indication information is the upgrade instruction or the polling result.

13. The method according to claim 12, wherein the upgrade indication information is used to
indicate to perform an upgrade based on an upgrade policy, and the upgrade policy is generated
when the server separately compares current version information separately corresponding to the
15 POS devices with the version information to be upgraded to, to determine, from the POS devices,
the target POS device that needs to be upgraded; and the upgrade policy has an upgrade type, and
the upgrade type is used to represent an upgrade urgency degree;

the obtaining an upgrade instruction sent by the server based on an obtained sending
instruction comprises: if the upgrade type is an urgent upgrade, obtaining the upgrade instruction
20 sent by the server based on the obtained sending instruction; and

the obtaining, after sending an upgrade polling request to the server, a polling result sent by
the server based on the upgrade polling request comprises: if the upgrade type is a non-urgent
upgrade, obtaining, after sending the upgrade polling request to the server, the polling result sent
by the server based on the upgrade polling request.

14. The method according to claim 13, wherein the upgrade policy further has other attribute
information, and the other attribute information comprises at least one of a policy type, a content
type, and an upgrade channel; the policy type is used to represent an upgrade degree; the content
type is new function content or updated function content; and the method further comprises:

outputting the other attribute information; and

the upgrading a current version of the target POS device to a version to be upgraded to
comprises: obtaining an upgrade operation that is performed by a merchant of the target POS

device on the other attribute information, and upgrading the current version of the target POS device to the version to be upgraded to based on the upgrade operation.

15. The method according to claim 10, wherein the server stores information lists respectively corresponding to the POS devices, and the information list comprises current version information of each POS device; and the method further comprises:

asynchronously sending an upgrade success instruction to the server in response to completion of the upgrade, wherein

the upgrade success instruction is used to update the current version information of the target POS device in the information list.

16. The method according to claim 15, wherein the information list further comprises a grayscale attribute of each POS device, and the grayscale attribute comprises at least one of an application scenario type, area information, language information, time zone information, and an upgrade channel; and the target POS device is determined when the server obtains, from the information list, current version information separately corresponding to the POS devices in at least one grayscale attribute, and separately compares the obtained current version information with the version information to be upgraded to.

17. An electronic device, serving as a server in a product upgrade system, wherein the product upgrade system further comprises a plurality of POS devices that are communicatively connected to the server, and each POS device is installed with a payment solution product; and the electronic device comprises:

at least one storage medium, storing at least one instruction set; and

at least one processor, communicatively connected to the at least one storage medium, wherein when running, the at least one processor reads the at least one instruction set, and performs the following operations based on an instruction of the at least one instruction set:

determining, based on version information to be upgraded to, upgrade indication information corresponding to a target POS device, wherein the target POS device is a POS device that has an upgrade requirement in the plurality of POS devices; and

sending the upgrade indication information to the target POS device, to guide, based on the upgrade indication information, the target POS device to upgrade a current version to a version to be upgraded to.

18. An electronic device, serving as a target POS device in a product upgrade system, wherein

the product upgrade system comprises a server and a plurality of POS devices that are communicatively connected to the server, each POS device is installed with a payment solution product, and the target POS device is a POS device that is determined by the server from the plurality of POS devices based on version information to be upgraded to and that has an upgrade

5 requirement; and the electronic device comprises:

at least one storage medium, storing at least one instruction set; and

at least one processor, communicatively connected to the at least one storage medium, wherein when running, the at least one processor reads the at least one instruction set, and performs the following operations based on an instruction of the at least one instruction set:

10 obtaining upgrade indication information sent by the server; and

upgrading a current version of the target POS device to a version to be upgraded to based on the upgrade indication information.

19. A computer-readable non-transitory storage medium, wherein the computer-readable non-transitory storage medium stores at least one instruction set, and the at least one instruction set is
15 executed by at least one processor to implement the method according to any one of claims 1 to 16.

20. A product upgrade system, wherein the product upgrade system comprises a server and a plurality of POS devices that are communicatively connected to the server, and each POS device is installed with a payment solution product;

20 the server is configured to: determine, based on version information to be upgraded to, upgrade indication information corresponding to a target POS device, wherein the target POS device is a POS device that has an upgrade requirement in the plurality of POS devices; and send the upgrade indication information to the target POS device, to guide, based on the upgrade indication information, the target POS device to upgrade a current version to a version to be
25 upgraded to; and

the target POS device is configured to: obtain the upgrade indication information sent by the server, and upgrade the current version of the target POS device to the version to be upgraded to based on the upgrade indication information.