TRANSACTION PROCESSING METHOD, ACQUIRING SYSTEM, AND STORAGE MEDIUM

TECHNICAL FIELD

[0001] This specification relates to the field of Internet technologies, and in particular, to a transaction processing method, an acquiring system, and a storage medium.

BACKGROUND

[0002] Some acquiring systems support in performing acquisition processing on transactions in a plurality of geographical regions. The acquisition specifications required in different geographical regions are usually different. Therefore, the acquiring system needs to use different acquisition specifications for transactions in different geographical regions.

[0003] In a transaction scenario across geographical regions, each merchant corresponds to at least one service development identity, and different service development identities are used in different geographical regions. During acquisition, the acquiring system can identify the service development identity used by the merchant when the merchant initiates the transaction. The service development identity can represent a geographical region to which the current transaction belongs. Further, the acquiring system can perform acquisition processing on the current transaction based on an acquisition specification of the geographical region represented by the service development identity.

[0004] Currently, to identify a service development identity used by a merchant when the merchant initiates a transaction, the acquiring system needs to generate a set of keys for each service development identity of the merchant. For example, when the merchant makes a transaction by using a first service development identity, a payment request sent to the acquiring system is encrypted by using a first key. When the merchant makes a transaction by using a second service development identity, a payment request sent to the acquiring system is encrypted by using a second key. In this way, the acquiring system can identify, by verifying the key, a service development identity currently used by the merchant, and then perform acquisition processing on

the transaction based on an acquisition specification of a geographical region corresponding to the service development identity. However, the test and maintenance of the key require high manpower costs. Moreover, a plurality of keys corresponding to a plurality of service development identities of a merchant may be mixed. Consequently, the acquiring system cannot normally perform acquisition processing, which affects the service development of the merchant in different geographical regions.

[0005] Content of the background part is merely information learned of by the inventor, and neither means that the information has entered a public domain before an application date of the present disclosure, nor means that the information can become a conventional technology of the present disclosure.

SUMMARY

[0006] This specification provides a transaction processing method, an acquiring system, and a storage medium. The acquiring system can identify, based on transaction information corresponding to a target transaction, a service development identity used by a target merchant when the target merchant initiates the target transaction, and no longer relies on a key, thereby avoiding various problems in identifying the service development identity of the merchant based on the key.

[0007] According to a first aspect, this specification provides a transaction processing method, applied to an acquiring system. The method includes: in response to a received payment request corresponding to a target transaction generated by a target merchant, obtaining transaction information of the target transaction, where the target merchant corresponds to at least one service development identity, and different service development identities are used when service development is performed in different geographical regions; obtaining a preset rule set, where the rule set includes a plurality of identification rules for performing service development identity identification; identifying, based on matching between the transaction information and the plurality of identification rules, a target service development identity used by the target merchant when the target merchant generates the target transaction, where the target service development identity is one of the at least one service development identity; and performing acquisition processing on the target transaction based on the target service development identity.

[0008] According to a second aspect, this specification provides an acquiring system, including: at least one storage medium, storing at least one instruction set, to perform transaction processing; and at least one processor, communicatively connected to the at least one storage medium, where when the acquiring system runs, the at least one processor reads the at least one instruction set, and performs the following operations based on an indication of the at least one instruction set: in response to a received payment request corresponding to a target transaction generated by a target merchant, obtaining transaction information of the target transaction, where the target merchant corresponds to at least one service development identity, and different service development identities are used when service development is performed in different geographical regions; obtaining a preset rule set, where the rule set includes a plurality of identification rules for performing service development identity identification; identifying, based on matching between the transaction information and the plurality of identification rules, a target service development identity used by the target merchant when the target merchant generates the target transaction, where the target service development identity is one of the at least one service development identity; and performing acquisition processing on the target transaction based on the target service development identity.

[0009] According to a third aspect, this specification further provides a computer-readable nonvolatile storage medium. The computer-readable nonvolatile storage medium stores at least one instruction set, and when the at least one instruction set is executed by at least one processor, the method according to the first aspect is implemented.

[0010] Other functions of the transaction processing method, the acquiring system, and the storage medium provided in this specification are partially listed in the following descriptions. Creative aspects of the transaction processing method, the acquiring system, and the storage medium 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

[0011] To describe the technical solutions in the embodiments of this specification more clearly, the following briefly describes the accompanying drawings needed for describing the embodiments. Clearly, the accompanying drawings in the following descriptions 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.

[0012] FIG. 1 is a schematic diagram of an application scenario to which a transaction processing method is applicable according to an embodiment of this specification;

[0013] FIG. 2 is a diagram of a hardware structure of a computing system according to an embodiment of this specification;

[0014] FIG. 3 is a flowchart of a transaction processing method according to an embodiment of this specification;

[0015] FIG. 4 is a schematic diagram in which an acquiring system obtains transaction information of a target transaction according to an embodiment of this specification;

[0016] FIG. 5 is a schematic diagram of a process of generating a rule set according to an embodiment of this specification; and

[0017] FIG. 6 is a schematic diagram of another transaction processing process according to an embodiment of this specification.

DESCRIPTION OF EMBODIMENTS

[0018] Specific application scenarios and requirements of this specification are provided in the following descriptions, so that a person skilled in the art can manufacture and use content of this specification. For the person skilled in the art, various local modifications to the disclosed embodiments are clear, and the general principles defined herein can be applied to other embodiments and applications without departing from the spirit and scope of this specification. Therefore, this specification is not limited to the shown embodiments, but has a widest scope consistent with that of the claims.

[0019] The terms used herein are only intended to describe a particular example embodiment, but do not impose a limitation. For example, unless otherwise specified in the context, the singular forms "one", "a", and "the" used herein can also include a plural form. When used in this specification, the terms "include", "comprise", and/or "have" indicate/indicates existence of an associated integer, step, operation, element, and/or component, but does not exclude existence of one or more other features, integers, steps, operations, elements, components, and/or groups, or another feature, integer, step, operation, element, component, and/or group can be added to the

system/method.

[0020] In consideration of the following descriptions, these and other features of this specification, operations and functions of related components of the structure, and economy of combination and manufacturing of components can be significantly improved. With reference to the accompanying drawings, all of these form a part of this specification. However, it should be clearly understood that the accompanying drawings are merely used for the purpose of illustration and description, and are not intended to limit the scope of this specification. It should be further understood that the accompanying drawings are not drawn to scale.

[0021] The flowchart used in this specification illustrates operations implemented by a system in some embodiments of this specification. It should be clearly understood that operations in the flowchart can be implemented out of sequence. On the contrary, operations can be implemented reversely or simultaneously. In addition, one or more other operations can be added to the flowchart. One or more operations can be removed from the flowchart.

[0022] In this specification, the subject may be an independent legal entity, namely, an organization (for example, a company, a partnership enterprise, an association, or a foundation) or an individual that is obligated, entitled and liable for actions of the subject in economic activities.

[0023] The technical solutions provided in this specification are applicable to a transaction scenario across geographical regions. In this scenario, a merchant may have a plurality of service development identities that are used when service development is performed in different geographical regions. For example, when service development is performed in a first geographical region (the merchant makes a transaction with a consumer in the first geographical region), the merchant makes a transaction with the consumer by using a first service development identity. When service development is performed in a second geographical region (the merchant makes a transaction with a consumer in the second geographical region), the merchant makes a transaction with the consumer by using a second service development identity. When processing these transactions, an acquiring system also needs to provide an acquisition service based on the service development identity used by the merchant and an acquisition specification of a geographical region corresponding to the service development identity.

[0024] This specification provides a transaction processing method that can be executed by an acquiring system. The acquiring system may identify, based on matching between transaction information of a target transaction and each identification rule in a rule set, a target service

development identity used by a target merchant when the target merchant generates the target transaction. Further, the acquiring system performs acquisition processing on the target transaction based on the target service development identity, so that an acquisition processing process of the target transaction complies with an acquisition specification of a geographical region to which the target transaction belongs.

[0025] In the foregoing solution, the acquiring system can identify, based on the transaction information of the target transaction, a service development identity currently used by the target merchant, so that the acquiring system does not need to pre-configure different keys for different merchants and different service development identities of a same merchant, thereby avoiding test and maintenance work on a large quantity of keys, further avoiding an acquisition fault caused by mixing of keys of different service development identities by the merchants, and improving stability of the acquisition service. Further, in the foregoing solution, all merchants can be interconnected to the acquiring system by using a uniform key. This simplifies interconnection on a merchant side. In addition, the acquiring system identifies the service development identity of the target merchant based on a pre-configured identification rule, so that the acquiring system can flexibly configure different identification rules for an actual application scenario, to accurately and efficiently identify the service development identity of the merchant. This enhances a capability of the acquiring system to identify the service development identity of the merchant, and ensures stability and reliability of the acquisition service.

[0026] FIG. 1 is a schematic diagram of an application scenario to which a transaction processing method is applicable according to an embodiment of this specification. As shown in FIG. 1, the application scenario 100 may include an acquiring system 11 and a transaction system 12.

[0027] The transaction system 12 may be a system that provides a cross-geographical-region transaction service. With reference to FIG. 1, the transaction system 12 may generate a target transaction between a target consumer and a target merchant in response to an operation of the target consumer, and send a payment request corresponding to the target transaction to the acquiring system 11.

[0028] In some embodiments, the acquiring system 11 is configured to provide intermediary services between the transaction system 12 and a payment system. For example, the acquiring system 11 is connected to the transaction system 12 and the payment system (for example, a wallet

system, a card organization, an issuing bank, and the like).

[0029] In some embodiments, after the acquiring system 11 receives the payment request of the target transaction, the acquiring system 11 may identify, based on transaction information corresponding to the target transaction, a target service development identity used by the target merchant when the target merchant generates the target transaction, and further perform acquisition processing on the target transaction based on the target service development identity. For example, the acquiring system 11 routes, based on a geographical region corresponding to the target service development identity, the payment request of the target transaction to a payment system corresponding to the geographical region. For another example, the acquiring system 11 may store related data of the target transaction into a database in the geographical region.

[0030] The acquiring system 11 may be a computing system with a specific computing capability. In some embodiments, the acquiring system 11 may correspond to a separate server, or may correspond to a server group, a distributed server, a cloud server, or the like.

[0031] The transaction processing method provided in this specification may be performed by the acquiring system 11. The acquiring system 11 may store data or an instruction for performing the transaction processing method described in this specification, and may execute or be configured to execute the data or the instruction. In some embodiments, the acquiring system 11 may include a hardware device with a data information processing function and a program required to drive the hardware device to work.

[0032] One acquiring system 11 may provide acquisition services for a plurality of transaction systems 12. A quantity of transaction systems 12 in FIG. 1 is merely an example. Based on an implementation requirement, there may be any quantity of transaction systems 12.

[0033] FIG. 2 is a diagram of a hardware structure of a computing system according to an embodiment of this specification. The acquiring system provided in this specification may include one or more computing systems 200 shown in FIG. 2, and is configured to perform the transaction processing method described in this specification.

[0034] As shown in FIG. 2, the computing system 200 may include at least one storage medium 230 and at least one processor 220. In some embodiments, the computing system 200 may further include a communication port 250 and an internal communication bus 210. The computing system 200 may further include an I/O component 260.

[0035] The internal communication bus 210 may be connected to different system components.

For example, the internal communication bus 210 may be connected to the storage medium 230, the processor 220, the communication port 250, and the I/O component 260.

[0036] I/O component 260 supports input/output between computing system 200 and other components.

[0037] The communication port 250 is configured to calculate data communication between the system 200 and the outside. For example, the communication port 250 may be configured to calculate data communication between the system 200 and the network. The communication port 250 may be a wired communication port, or may be a wireless communication port.

[0038] The storage medium 230 may include a data storage apparatus. The data storage apparatus may be a non-transitory storage medium, or may be a transitory storage medium. For example, the data storage apparatus may include one or more of a disk 232, a read-only storage medium (ROM) 234, or a random access storage medium (RAM) 235. The storage medium 230 further includes at least one instruction set stored in the data storage apparatus. The instruction set may include computer program code. The computer program code may include a program, a routine, an object, a component, a data structure, a process, a module, etc.

[0039] The at least one processor 220 may be communicatively connected to the at least one storage medium 230. When the computing system 200 runs, the at least one processor 220 reads the at least one instruction set, and performs, based on an indication of the at least one instruction set, the transaction processing method provided in this specification. The processor 220 may perform the steps included in the transaction processing method. The processor 220 may be in a form of one or more processors. In some embodiments, the processor 220 may 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 circuit or processor that can perform one or more functions, or any combination thereof.

[0040] To merely describe a problem, only one processor 220 is shown in the computing system 200 in the accompanying drawings. However, it should be noted that the computing system 200 in this specification may further include a plurality of processors. Therefore, the operations

and/or method steps disclosed in this specification may be performed by one processor, or may be jointly performed by a plurality of processors. For example, if the processor 220 in the computing system 200 described in this specification performs step A and step B, it should be understood as that step A and step B can be jointly or separately performed by two different processors 220 (for example, a first processor performs step A and a second processor performs step B, or a first processor and a second processor jointly perform step A and step B).

[0041] FIG. 3 is a flowchart of a transaction processing method according to an embodiment of this specification. As described above, the acquiring system 11 may perform the transaction processing method provided in this specification.

[0042] As shown in FIG. 3, the transaction processing method may include the following steps.

[0043] S310: In response to a received payment request corresponding to a target transaction generated by a target merchant, obtain transaction information of the target transaction, where the target merchant corresponds to at least one service development identity, and different service development identities are used when service development is performed in different geographical regions.

[0044] In this specification, the service development identity may be a subject identity used by a merchant during service development. When a merchant performs service development in a plurality of geographical regions, the merchant corresponds to a plurality of service development identities. The merchant uses different service development identities in different geographical regions. For example, the merchant uses a first service development identity when performing service development in a first geographical region, and uses a second service development identity when performing service development in a second geographical region. For ease of intuitive understanding, two geographical regions Europe and Austria are used as an example below for description in this specification. The merchant may correspond to an European service development identity and an Austrian service development identity. A geographical region corresponding to the European service development identity is Europe, and a geographical region corresponding to the Austrian service development identity is Austria.

[0045] It should be noted that the expression of the service development identity is not limited in this specification. The "European service development identity" and "Austrian service development identity" listed in this specification are named for ease of understanding. In some embodiments, the service development identity may correspond to a subject name, a subject

identifier, and the like that are registered by the merchant in different geographical regions. A person skilled in the art can understand that, regardless of names of a plurality of service development identities of a merchant, each service development identity corresponds to a geographical region.

[0046] In some embodiments, after receiving the payment request corresponding to the target transaction, the acquiring system may decrypt a packet of the payment request to obtain the transaction information of the target transaction. When decrypting packets of payment requests from different merchants, the acquiring system uses a same key.

[0047] FIG. 4 is a schematic diagram in which an acquiring system obtains transaction information of a target transaction according to an embodiment of this specification.

[0048] The acquiring system allocates a uniform key (for example, a key A) to all merchants. That is, all merchants use a same key, and all service development identities of each merchant also use a same key. In some embodiments, with reference to FIG. 4, a merchant 1, a merchant 2, and a merchant 3 are merchants that are resident in a transaction system. When the three merchants make transactions with consumers, the transaction system encrypts a packet of a payment request of each transaction by using the foregoing uniform key (for example, the key A), and then sends the packet of the payment request to the acquiring system through a gateway. After receiving a packet of a payment request from any merchant, the acquiring system may alternatively decrypt the packet of the payment request by using the uniform key (for example, the key A), to obtain transaction information of the transaction.

[0049] An encryption technology used when the transaction system communicates with the acquiring system may be symmetric encryption or asymmetric encryption. Correspondingly, the key A may be applied to symmetric encryption or asymmetric encryption. For example, when the encryption technology used for communication is symmetric encryption, the transaction system may encrypt the packet by using the key A, and the acquiring system may decrypt the packet by using the key A. When the encryption technology used for communication is asymmetric encryption, the key A includes a public key and a private key. The transaction system may encrypt the packet by using the public key in the key A, and the acquiring system may decrypt the packet by using the private key in the key A.

[0050] In this specification, the acquiring system provides a uniform key for all merchants, so that different merchants can access the acquiring system by using the same key. That is, all

merchants use the same key to be interconnected to the acquiring system. This reduces an interconnection workload on the merchant side, and avoids a problem that the merchants mix different keys. The acquiring system does not need to configure different keys for all merchants, and does not need to configure different keys for different service development identities of the merchant. This can effectively reduce difficulty and costs of key maintenance, reduce system errors due to improper key maintenance, and improve operating efficiency and stability of the acquiring system.

[0051] In some embodiments, the transaction information of the target transaction may include information such as information about a target consumer, information about the target merchant, a transaction amount, a transaction currency, and a delivery address. As an example, the transaction information of the target transaction may be recorded by using a JS object notation (JavaScript Object Notation, JSON) file. The json file includes a plurality of key-value pairs, and each key-value pair represents a field and a value corresponding to the field. For example, if the "transaction currency" is recorded by using a key-value pair, a field of the key-value pair is "transaction currency", and a value of the key-value pair is a feature code (for example, a number or an abbreviation) corresponding to the transaction currency. In some embodiments, in a scenario in which cross-region trade is supported, each target merchant may make transactions with consumers from different geographical regions. Based on a related transaction specification, the target merchant needs to make a transaction with a consumer by using a subject (namely, a service development identity) registered in a geographical region in which the consumer is located. Therefore, each target merchant may register a plurality of subjects (namely, service development identities) to meet a demand of performing service development in a plurality of geographical regions.

[0052] After receiving the payment request of the target transaction, the acquiring system may identify, based on the transaction information of the target transaction in the manner described below in the S320 and S330, the target service development identity used by the target merchant when the target merchant generates the target transaction.

[0053] S320: Obtain a preset rule set, where the rule set includes a plurality of identification rules for performing service development identity identification.

[0054] In some embodiments, an identification rule includes a condition part and a decision part. The condition part represents at least one condition, and the decision part represents a service

development identity determined when the at least one condition is satisfied. The condition part may include at least one identification condition. As an example, the identification condition may be used to represent at least one of the following conditions: a condition related to the transaction currency or a condition related to the delivery address. For example, a condition part of an identification rule may be "transaction currency is Euro", and a decision part may be "European service development identity". A meaning of the identification rule is as follows: If a transaction currency of the target transaction is Euro, a service development identity used by a merchant that generates the target transaction is a European service development identity.

[0055] In some embodiments, the acquiring system may pre-load a plurality of identification rules into a rule set to obtain the preset rule set. FIG. 5 is a schematic diagram of a process of generating a rule set according to an embodiment of this specification.

[0056] In some embodiments, with reference to FIG. 5, preset storage space of the acquiring system stores configuration data corresponding to the plurality of identification rules. When generating the preset rule set, the acquiring system may read the configuration data from the preset storage space, compile the configuration data to generate the plurality of identification rules, and load the plurality of identification rules into the rule set.

[0057] As an example, shown in FIG. 5, the preset storage space stores configuration data corresponding to an identification rule 1, configuration data corresponding to an identification rule 2, ..., and configuration data corresponding to an identification rule N, where N is an integer greater than or equal to 1. Each piece of configuration data is used to describe a condition part and a decision part in a corresponding identification rule. In some embodiments, the preset storage space may further store configuration data corresponding to different geographical regions, for example, configuration data corresponding to a geographical region 1, configuration data corresponding to a geographical region 2, ..., and configuration data corresponding to a geographical region K, where K is an integer greater than or equal to 1. Configuration data corresponding to each geographical region is used to describe a transaction processing rule corresponding to the geographical region. The transaction processing rule corresponding to each geographical region meets an acquisition specification of the geographical region.

[0058] In some embodiments, still with reference to FIG. 5, the acquiring system may compile the configuration data stored in the preset storage space to obtain N identification rules and K transaction processing rules. For example, the acquiring system compiles configuration data

corresponding to the N identification rules to obtain the N identification rules, and compiles configuration data corresponding to K geographical regions to obtain transaction processing rules corresponding to the K geographical regions.

[0059] As an example, configuration data corresponding to each identification rule and configuration data corresponding to each geographical region may be written in a programming language and recorded in a specified file format. For example, each piece of configuration data may be recorded by using a json file, so that the configuration data may be written in a programming language supported by the json file. The acquiring system may parse data in the json file through pre-configured code, and generate an identification rule and a transaction processing rule that can be read and used by the acquiring system.

[0060] In some embodiments, the acquiring system may verify these identification rules obtained through compiling. For example, the acquiring system may verify whether the condition part of the identification rule includes a valid condition. Alternatively, the acquiring system may further verify whether a service development identity determined in the identification rule actually exists, or verify whether a geographical region corresponding to the service development identity determined in the identification rule actually exists. After an identification rule is verified, the acquiring system may load the identification rule into the rule set.

[0061] In some embodiments, the plurality of identification rules respectively correspond to priorities, where a level of the priority is positively correlated with a degree of precision of a geographical region corresponding to the service development identity represented by the decision part. That the acquiring system loads the plurality of identification rules into the rule set includes: The acquiring system determines, based on degrees of precision of geographical regions corresponding to service development identities identified based on the plurality of identification rules, priorities respectively corresponding to the plurality of identification rules. In addition, the acquiring system loads the plurality of identification rules and the priorities respectively corresponding to the plurality of identification rules into the rule set.

[0062] As an example, with reference to FIG. 5, the acquiring system may compile the obtained identification rule 1 and the obtained identification rule 2 to the obtained identification rule N based on the configuration data stored in the preset storage space. The identification rule 1 includes a condition part 1 and a decision part 1, the identification rule 2 includes a condition part 2 and a decision part 2, and the identification rule N includes a condition part N and a decision

part N.

[0063] In some embodiments, after each identification rule is verified, the acquiring system may obtain a geographical region corresponding to a service development identity determined based on the identification rule, sort the plurality of identification rules from precision to roughness based on a degree of precision of the geographical region, and determine that a higher-ranked identification rule has a higher priority.

[0064] For example, two identification rules are used as an example. It is assumed that a service development identity determined based on the identification rule 1 is a European service development identity, and a geographical region corresponding to the service development identity is Europe. A service development identity determined based on the identification rule 2 is an Austrian service development identity, and a geographical region corresponding to the service development identity is Austria. Austria is a country in Europe, and Austria is a geographical region with a finer granularity than Europe. The acquiring system determines, based on the degrees of precision of the foregoing two geographical regions, that a priority of the identification rule 1 is lower than a priority of the identification rule 2.

[0065] In some embodiments, when detecting that newly added configuration data is written into the preset storage space, the acquiring system reads the newly added configuration data from the preset storage space. The acquiring system compiles the newly added configuration data to generate a new identification rule, and loads the new identification rule into the rule set.

[0066] For example, with reference to FIG. 5, when detecting that configuration data corresponding to an identification rule N+1 is written into the preset storage space, the acquiring system may compile the configuration data corresponding to the identification rule N+1 to obtain the identification rule N+1. Then, the acquiring system may verify the identification rule N+1, and after the verification succeeds, determine a priority of the identification rule N+1 based on a degree of precision of a geographical region corresponding to a service development identity determined based on the identification rule N+1. Finally, the acquiring system loads the identification rule N+1 (including the priority) into the rule set.

[0067] In this embodiment, the configuration data in the preset storage space is compiled to obtain the identification rule, and the identification rule is loaded into the rule set, so that the identification rule are dynamically configured and updated, to facilitate management of the rule set by the acquiring system, and improve accuracy and identification efficiency of identification

of the service development identity. In addition, the identification rule is customized, so that corresponding identification rules and transaction processing rules can be provided for acquisition specifications of different geographical regions, and the acquiring system can provide corresponding acquisition services for different geographical regions. This enhances adaptability of the acquiring system to different requirements.

[0068] S330: Identify, based on matching between the transaction information and the plurality of identification rules, a target service development identity used by the target merchant when the target merchant generates the target transaction, where the target service development identity is one of the at least one service development identity.

[0069] FIG. 6 is a schematic diagram of another transaction processing process according to an embodiment of this specification.

[0070] In some embodiments, with reference to FIG. 6, when each identification rule includes a condition part and a decision part, the acquiring system may match the transaction information with condition parts of the plurality of identification rules, to determine, from the plurality of identification rules, at least one target identification rule that is successfully matched. Further, the acquiring system determines the target service development identity based on a decision part of the at least one target identification rule.

[0071] In some embodiments, with reference to FIG. 6, the transaction information may include a plurality of key fields and a value of each key field. For example, in FIG. 6, the transaction information includes a key field 1 and a value of the key field 1, a key field 2 and a value of the key field 2, a key field 3 and a value of the key field 3, and a key field M and a value of the key field M, where M is an integer greater than or equal to 1.

[0072] The key field may be a field that directly or indirectly reflects a geographical region to which the target transaction belongs. As an example, the key field in the transaction information may include at least one of the following fields: a transaction currency and a delivery address. For example, for the key field "transaction currency", a value of the key field may be a feature code (for example, a number or an abbreviation) corresponding to the transaction currency. For the key field "delivery address", a value of the key field may be a specific delivery address.

[0073] Correspondingly, the condition part of the identification rule represents at least one of the following conditions: a condition related to the transaction currency and a condition related to the delivery address.

[0074] As an example, a condition part of the identification rule 1 includes a condition related to the transaction currency. It is assumed that the condition part of the identification rule 1 is "transaction currency is Euro", and a decision part is "European service development identity". A meaning expressed by the identification rule 1 is as follows: If a transaction currency of the target transaction is Euro, a service development identity of a merchant that generates the target transaction is a European service development identity.

[0075] As an example, a condition part of the identification rule 2 includes a condition related to the delivery address. It is assumed that the condition part of the identification rule 2 is "the country to which the delivery address belongs is Austria", and a decision part is "Austrian service development identity". A meaning expressed by the identification rule 2 is as follows: If the country to which a delivery address of the target transaction belongs is Austria, a service development identity of a merchant that generates the target transaction is Austrian service development identity.

[0076] In some embodiments, the acquiring system may obtain a value of at least one key field (for example, a transaction currency, a delivery address, and the like) from the transaction information of the target transaction. Further, the acquiring system may separately match the value of the at least one key field with the condition parts of the plurality of identification rules, to determine, from the plurality of identification rules, the at least one target identification rule that is successfully matched. Further, the acquiring system determines the target service development identity based on a decision part of the at least one target identification rule.

[0077] For example, if a value of the key field "transaction currency" obtained from the key information of the target transaction is "Euro", and a value of the key field "delivery address" is "Street XXX, District XXX, Austria", the foregoing two key fields are successfully matched with the identification rule 1 listed above, and are successfully matched with the identification rule 2 listed above. In this case, the acquiring system may use the identification rule 1 and the identification rule 2 as the target identification rules. Further, the acquiring system determines, based on decision parts of the identification rule 1 and the identification rule 2, the target service development identity used by the target merchant when the target merchant generates the target transaction.

[0078] In this embodiment, the key field in the transaction information is matched with the condition part of the identification rule, so that the service development identity can be identified

based on the transaction information, and there is no need to pre-allocate different keys to identify the service development identity. Based on this manner, the acquiring system can accurately and efficiently identify the service development identity currently used by the merchant based on the transaction information, and then perform acquisition processing on the target transaction based on the acquisition specification of the geographical region corresponding to the target service development identity, to improve stability and reliability of the acquiring system.

[0079] In some embodiments, with reference to FIG. 5 and FIG. 6, a corresponding priority may be configured for each identification rule. The acquiring system may separately match the transaction information with the condition parts of the plurality of identification rules in descending order of priorities corresponding to the plurality of identification rules, and determine a first successfully matched identification rule as the target identification rule.

[0080] The two identification rules listed above are used as an example below to describe a matching process of the acquiring system. Because a degree of precision of the geographical region (Europe) corresponding to the service development identity (European service development identity) identified based on the identification rule 1 is lower than a degree of precision of the geographical region (Austria) corresponding to the service development identity (Austrian service development identity) identified based on the identification rule 2, the priority of the identification rule 1 is lower than the priority of the identification rule 2. During matching, the acquiring system may perform matching in descending order of priorities. That is, the acquiring system matches the transaction information of the target transaction with the condition part of the identification rule 2. If the matching succeeds, the acquiring system determines the identification rule 2 as the target identification rule. If the matching fails, the acquiring system continues to match the transaction information of the target transaction with the condition part of the identification rule 1. If the matching succeeds, the acquiring system determines the identification rule 1 as the target identification rule. If the matching fails, the acquiring system continues to match the transaction information of the target transaction with a condition part of another identification rule with a lower priority.

[0081] In other embodiments, the acquiring system may alternatively match the transaction information with a condition part of each identification rule, and use all successfully matched identification rules as target identification rules. Then, when a quantity of target identification rules is equal to 1, the acquiring system uses the service development identity represented by the

decision part in the target identification rule as the target service development identity. Alternatively, when a quantity of target identification rules is greater than 1, the acquiring system determines a first identification rule with a highest priority in the plurality of target identification rules, and uses a service development identity represented by a decision part in the first identification rule as the target service development identity.

[0082] The identification rule 1 and the identification rule 2 listed above are still used as an example for description. It is assumed that the rule set includes the identification rule 1 and the identification rule 2. The acquiring system may separately match the transaction information of the target transaction with the condition parts of the identification rule 1 and the identification rule 2. If only the identification rule 1 is successfully matched, the acquiring system determines the target service development identity based on the decision part of the identification rule 1, that is, the target service development identity is the European service development identity. If only the identification rule 2 is successfully matched, the acquiring system determines the target service development identity based on the decision part of the identification rule 2, that is, the target service development identity is the Austrian service development identity. If both the identification rule 1 and the identification rule 2 are successfully matched, because the priority of the identification rule 2 is higher than the priority of the identification rule 1, the acquiring system determines the target service development identity based on the decision part of the identification rule 2, that is, the target service development identity is the Austrian service development identity.

[0083] In this embodiment, the acquiring system determines a matching sequence of different identification rules based on a priority of each identification rule, or determines which identification rule is used to make a decision. This can avoid a rule conflict that occurs when a piece of transaction information is successfully matched with a plurality of identification rules, further improve a capability of identifying the service development identity by the acquiring system, and improve identification accuracy.

[0084] S340: Perform acquisition processing on the target transaction based on the target service development identity.

[0085] As mentioned above, different geographical regions may correspond to different acquisition specifications. When the acquiring system develops an acquisition service, different acquisition specifications needs be used for transactions in different geographical regions. The target merchant uses different service development identities in different geographical regions.

Therefore, after identifying the target service development identity currently used by the target merchant, the acquiring system may determine, based on the target service development identity, a geographical region to which the target transaction belongs, and further perform acquisition processing on the target transaction based on an acquisition specification of the geographical region.

[0086] For ease of description, the geographical region corresponding to the target service development identity (that is, a geographical region to which the target transaction determined based on the target service development identity belongs) is referred to as a target geographical region. In some embodiments, with reference to FIG. 6, the acquiring system may obtain, from the rule set, a transaction processing rule corresponding to the target geographical region. Further, the acquiring system performs acquisition processing on the target transaction based on the transaction processing rule corresponding to the target geographical region. The transaction processing rule is used to describe a specification that the acquiring system needs to follow when processing transaction data in the target geographical region.

[0087] In some embodiments, the transaction processing rule corresponding to the target geographical region may include a transaction database storage rule and a transaction routing rule. The transaction database storage rule is used to specify a database in which the transaction data is stored, and the transaction routing rule is used to specify a payment system to which the transaction data is routed.

[0088] Based on the acquisition specification, for a transaction generated by the target merchant in the target geographical region, the payment system corresponding to the target geographical region needs to liquidate and receive transaction funds. In this case, the transaction routing rule may be used to indicate to route the target transaction to the payment system corresponding to the target geographical region. In other words, the acquiring system routes, based on the transaction routing rule, the payment request of the target transaction to the payment system corresponding to the target geographical region.

[0089] According to the acquisition specification, when providing the acquisition service in different geographical regions, the acquiring system data needs to comply with data security rules of corresponding regions. For example, for the target geographical region, transaction data generated in the target geographical region needs to be stored in a database in the target geographical region. In this case, the transaction database storage rule may be used to indicate to

store related data of the target transaction in the database in the target geographical region. In other words, the acquiring system stores the related data of the target transaction in the database in the target geographical region based on the transaction database storage rule.

[0090] In the foregoing solution, after identifying the target service development identity currently used by the target merchant, the acquiring system may determine, based on the target service development identity, the target geographical region to which the target transaction belongs, and further perform acquisition processing on the target transaction based on the transaction processing rule corresponding to the target geographical region. It can be learned that the acquiring system can perform acquisition processing on transactions generated in different geographical regions by using local acquisition specifications, to meet the acquisition specifications of different geographical regions, and improve transaction security in each geographical region.

[0091] In conclusion, in the transaction processing method and the acquiring system provided in this specification, the acquiring system can identify, based on matching between transaction information of a target transaction and each identification rule in a rule set, a target service development identity used by a target merchant when the target merchant generates the target transaction. Further, the acquiring system performs acquisition processing on the target transaction based on the target service development identity, so that an acquisition processing process of the target transaction complies with an acquisition specification of a geographical region to which the target transaction belongs. In the foregoing solution, the acquiring system can identify, based on the transaction information of the target transaction, a service development identity currently used by the target merchant, so that the acquiring system does not need to pre-configure different keys for different merchants and different service development identities of a same merchant, thereby avoiding test and maintenance work on a large quantity of keys, further avoiding an acquisition fault caused by mixing of keys of different service development identities by the merchants, and improving stability of the acquisition service. Further, in the foregoing solution, all merchants can be interconnected to the acquiring system by using a uniform key. This simplifies interconnection on a merchant side. In addition, the acquiring system identifies the service development identity of the target merchant based on a pre-configured identification rule, so that the acquiring system can flexibly configure different identification rules for an actual application scenario, to accurately and efficiently identify the service development identity of the merchant. This enhances a capability of the acquiring system to identify the service development identity of the merchant,

and ensures stability and reliability of the acquisition service.

[0092] Another aspect of this specification provides a computer-readable non-transitory storage medium, storing at least one instruction set, to perform transaction processing. When the at least one instruction set is executed by a processor, the at least one instruction set instructs the processor to implement the steps of the transaction processing method in this specification. In some possible implementations, aspects of this specification can further be implemented in a form of a program product, including program code. When the program product runs on a computing system 200, the program code is used to enable the computing system 200 to perform the steps of the transaction processing method described in this specification. The program product used to implement the above-mentioned method can be a portable compact disk read-only memory (CD-ROM) including program code, and can run on the computing system 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. The readable storage medium can be, for example, 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 flash memory), an optical fiber, a portable compact disc read-only memory (CD-ROM), an optical storage component, a magnetic storage component, or any proper combination thereof. The computer-readable storage medium can include a data signal propagated in a baseband or as 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 further be any readable medium other than the readable storage medium, and the readable medium can be used to send, propagate, or transmit a program used by or in combination with an instruction execution system, apparatus, or component. The program code included in the readable storage medium can be transmitted in any proper medium, including

but not limited to a wireless medium, a wired medium, optical cable, an RF medium, or any proper combination thereof. Program code for performing an operation of this specification can be written in 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, "C" language, or a similar program design language. The program code can be completely executed on the computing system 200, partially executed on the computing system 200, executed as an independent software package, partially executed on the computing system 200 and partially executed on a remote computing device, or completely executed on a remote computing device.

[0093] 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 the 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.

[0094] In conclusion, after reading the detailed disclosure, a person skilled in the art can understand that the detailed disclosure can be presented only in an example manner, and can impose no limitation. Although it is not explicitly stated here, 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 presented in this specification, and fall within the spirit and scope of the example embodiments of this specification.

[0095] In addition, some terms in this specification are used to describe the embodiments of this specification. For example, "one embodiment", "an embodiment", and/or "some embodiments" mean that particular features, structures, or characteristics described with reference to the embodiments 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, particular features, structures, or characteristics can be properly combined in one or more embodiments of this specification.

[0096] 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.

[0097] Each patent, patent application, publication of a patent application, and other materials, for example, articles, books, instructions, publications, documents, and products, that are cited in this specification and that are other than any document that is inconsistent or conflict with this document or that imposes limiting impact on the widest scope of the claims can be incorporated herein by reference and used for all purposes now or later associated with this document. In addition, the term in this document shall prevail when there is any inconsistency or conflict between the description, definition and/or use of a related term in any material and the description, definition and/or use of a related term in this document.

[0098] 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 the application.

CLAIMS

1. A transaction processing method, applied to an acquiring system, wherein the method comprises:

in response to a received payment request corresponding to a target transaction generated by a target merchant, obtaining transaction information of the target transaction, wherein the target merchant corresponds to at least one service development identity, and different service development identities are used when service development is performed in different geographical regions;

obtaining a preset rule set, wherein the rule set comprises a plurality of identification rules for performing service development identity identification;

identifying, based on matching between the transaction information and the plurality of identification rules, a target service development identity used by the target merchant when the target merchant generates the target transaction, wherein the target service development identity is one of the at least one service development identity; and

performing acquisition processing on the target transaction based on the target service development identity.

2. The method according to claim 1, wherein an identification rule comprises a condition part and a decision part, the condition part represents at least one condition, and the decision part represents a service development identity determined when the at least one condition is satisfied; and

the identifying, based on matching between the transaction information and the plurality of identification rules, a target service development identity used by the target merchant when the target merchant generates the target transaction comprises:

matching the transaction information with condition parts of the plurality of identification rules, to determine, from the plurality of identification rules, at least one target identification rule that is successfully matched; and

determining the target service development identity based on a decision part of the at least one target identification rule.

3. The method according to claim 2, wherein the matching the transaction information with condition parts of the plurality of identification rules, to determine, from the plurality of

identification rules, at least one target identification rule that is successfully matched comprises:

obtaining a value of at least one key field from the transaction information, wherein the key field is a field that directly or indirectly reflects a geographical region to which the target transaction belongs; and

separately matching the value of the at least one key field with the condition parts of the plurality of identification rules, to determine, from the plurality of identification rules, the at least one target identification rule that is successfully matched.

4. The method according to claim 3, wherein the at least one key field comprises at least one of the following fields: a transaction currency and a delivery address; and

the condition part represents at least one of the following conditions: a condition related to the transaction currency and a condition related to the delivery address.

5. The method according to claim 2, wherein the plurality of identification rules respectively correspond to priorities, wherein a level of the priority is positively correlated with a degree of precision of a geographical region corresponding to the service development identity represented by the decision part; and

the matching the transaction information with condition parts of the plurality of identification rules, to determine, from the plurality of identification rules, at least one target identification rule that is successfully matched comprises:

separately matching the transaction information with the condition parts of the plurality of identification rules in descending order of priorities corresponding to the plurality of identification rules, and determining a first successfully matched identification rule as the target identification rule.

6. The method according to claim 2, wherein the determining the target service development identity based on a decision part of the at least one target identification rule comprises:

when a quantity of target identification rules is equal to 1, using a service development identity represented by the decision part in the target identification rules as the target service development identity.

7. The method according to claim 2, wherein the plurality of identification rules respectively correspond to priorities, wherein a level of the priority is positively correlated with a degree of precision of a geographical region corresponding to the service development identity represented by the decision part; and

the determining the target service development identity based on a decision part of the at least one target identification rule comprises:

when a quantity of target identification rules is greater than 1, determining a first identification rule with a highest priority in the plurality of target identification rules, and using a service development identity represented by a decision part in the first identification rule as the target service development identity.

8. The method according to claim 1, wherein the rule set further comprises transaction processing rules corresponding to different geographical regions; and

the performing acquisition processing on the target transaction based on the target service development identity comprises:

obtaining, from the rule set based on a target geographical region corresponding to the target service development identity, a transaction processing rule corresponding to the target geographical region; and

performing acquisition processing on the target transaction based on the transaction processing rule corresponding to the target geographical region.

9. The method according to claim 8, wherein the transaction processing rule corresponding to the target geographical region comprises a transaction database storage rule and a transaction routing rule, and the performing acquisition processing on the target transaction based on the transaction processing rule corresponding to the target geographical region comprises:

routing, based on the transaction routing rule, a payment request of the target transaction to a payment system corresponding to the target geographical region; and

storing related data of the target transaction into a database in the target geographical region based on the transaction database storage rule.

10. The method according to claim 1, wherein preset storage space of the acquiring system stores configuration data corresponding to the plurality of identification rules, and the method further comprises:

reading the configuration data from the preset storage space; and

compiling the configuration data to generate the plurality of identification rules, and loading the plurality of identification rules into the rule set.

11. The method according to claim 10, wherein the loading the plurality of identification rules into the rule set comprises:

determining, based on degrees of precision of geographical regions corresponding to service development identities identified based on the plurality of identification rules, priorities respectively corresponding to the plurality of identification rules; and

loading the plurality of identification rules and the priorities respectively corresponding to the plurality of identification rules into the rule set.

12. The method according to claim 10, wherein the method further comprises:

when detecting that newly added configuration data is written into the preset storage space, reading the newly added configuration data from the preset storage space; and

compiling the newly added configuration data to generate a new identification rule, and loading the new identification rule into the rule set.

13. The method according to claim 1, wherein the obtaining transaction information of a target transaction comprises:

decrypting a packet of the payment request to obtain the transaction information of the target transaction, wherein the acquiring system uses a same key when decrypting packets of payment requests from different merchants.

14. An acquiring system, comprising:

at least one storage medium, storing at least one instruction set, to perform transaction processing; and

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

in response to a received payment request corresponding to a target transaction generated by a target merchant, obtaining transaction information of the target transaction, wherein the target merchant corresponds to at least one service development identity, and different service development identities are used when service development is performed in different geographical regions;

obtaining a preset rule set, wherein the rule set comprises a plurality of identification rules for performing service development identity identification;

identifying, based on matching between the transaction information and the plurality of identification rules, a target service development identity used by the target merchant when the target merchant generates the target transaction, wherein the target service development identity is

one of the at least one service development identity; and

performing acquisition processing on the target transaction based on the target service development identity.

15. The acquiring system according to claim 14, wherein an identification rule comprises a condition part and a decision part, the condition part represents at least one condition, and the decision part represents a service development identity determined when the at least one condition is satisfied; and

to identify, based on matching between the transaction information and the plurality of identification rules, a target service development identity used by the target merchant when the target merchant generates the target transaction, the at least one processor performs the following operations:

matching the transaction information with condition parts of the plurality of identification rules, to determine, from the plurality of identification rules, at least one target identification rule that is successfully matched; and

determining the target service development identity based on a decision part of the at least one target identification rule.

16. The acquiring system according to claim 15, to match the transaction information with condition parts of the plurality of identification rules, to determine, from the plurality of identification rules, at least one target identification rule that is successfully matched, the at least one processor performs the following operations:

obtaining a value of at least one key field from the transaction information, wherein the key field is a field that directly or indirectly reflects a geographical region to which the target transaction belongs; and

separately matching the value of the at least one key field with the condition parts of the plurality of identification rules, to determine, from the plurality of identification rules, the at least one target identification rule that is successfully matched.

17. The acquiring system according to claim 16, wherein the at least one key field comprises at least one of the following fields: a transaction currency and a delivery address; and

the condition part represents at least one of the following conditions: a condition related to the transaction currency and a condition related to the delivery address.

18. The acquiring system according to claim 15, wherein the plurality of identification rules

respectively correspond to priorities, wherein a level of the priority is positively correlated with a degree of precision of a geographical region corresponding to the service development identity represented by the decision part; and

to match the transaction information with condition parts of the plurality of identification rules, to determine, from the plurality of identification rules, at least one target identification rule that is successfully matched, the at least one processor performs the following operations:

separately matching the transaction information with the condition parts of the plurality of identification rules in descending order of priorities corresponding to the plurality of identification rules, and determining a first successfully matched identification rule as the target identification rule.

19. The acquiring system according to claim 15, wherein to determine the target service development identity based on a decision part of the at least one target identification rule, the at least one processor performs the following operation:

when a quantity of target identification rules is equal to 1, using a service development identity represented by the decision part in the target identification rules as the target service development identity.

20. A computer-readable nonvolatile storage medium, wherein the computer-readable nonvolatile storage medium stores at least one instruction set, and when the at least one instruction set is executed by at least one processor, the method according to any one of claims 1 to 13 is implemented.