can include the following: the rule tree calculation submodule determines an expression and/or a logical operator for reflecting the rule based on the obtained rule, and generates the rule tree based on the determined expression and/or logical operator.

[0048] In this implementation of the present application, the determined expression can be used to reflect a determining condition in the rule, and the determined logical operator can be used to perform logic combination on a plurality of determining conditions. The expression includes but is not limited to a logical expression, and a value of the expression is usually TRUE or FALSE. The logical operator includes but is not limited to logical operators AND, OR, NOT, and XOR.

[0049] It is worthwhile to note that the expression and the logical operator are example elements of the rule tree. In practice, the rule tree can be formed by using texts or other characters.

[0050] Further, the rule tree can be formed in a plurality of methods. Considering calculation efficiency, a leaf node in the rule tree can be the determined expression, and a non-leaf node in the rule tree can be the determined logical operator, to achieve relatively high calculation efficiency.

[0051] For ease of understanding, an implementation of the present application provides a schematic structural diagram illustrating a rule tree, as shown in FIG. 2.

[0052] The rule tree in FIG. 2 is a multi-branch tree, and the multi-branch tree includes three layers. A first layer includes one root node (belonging to a non-leaf node), a second layer includes two non-leaf nodes and one leaf node, and a third layer includes five leaf nodes. The root node is a logical operator "AND" and the two non-leaf nodes at the second layer are respectively a logical operator "OR" and a logical operator "AND".

[0053] It is worthwhile to note that the structure of the rule tree in FIG. 2 is merely an example. The number of layers and branches, the specific expression or logical operator of each node in the rule tree, etc are not limited in the present application.

[0054] Further, when a rule tree is calculated, the rule tree needs to be calculated based on a specific structure of the rule tree. The rule tree in FIG. 2 is used as an example. That the operation module 103 determines an operation result of the rule based on the rule tree and the service data can include the following: the operation module performs post-order traversal on the rule tree, calculates a value of a root node in the rule tree in the post-order traversal process based on the service data, and determines a calculation result as the operation result of the rule. The operation result

[0082] S603. The terminal generates a rule tree based on the obtained rule, and obtains service data related to the rule tree.

[0083] S604. The terminal determines an operation result of the rule based on the rule tree and the service data.

[0084] The method provided in the present application is corresponding to the device provided in the present application, and the method also has beneficial technical effects similar to those of the device. Because the beneficial technical effects of the device have been described above in detail, the beneficial technical effects of the method are omitted here for simplicity.

[0085] Based on the method, this implementation of the present application further provides some specific implementation solutions and extended solutions of the method. The solutions are analyzed in detail in the description of the previous device, and therefore only simple description is provided here.

[0086] In this implementation of the present application, step S603 in which the terminal generates a rule tree based on the obtained rule can include the following: determining, by the terminal, an expression and/or a logical operator for reflecting the rule based on the obtained rule; and generating, by the terminal, the rule tree based on the determined expression and/or logical operator.

[0087] In this implementation of the present application, a leaf node in the rule tree can be the determined expression, and a non-leaf node in the rule tree can be the determined logical operator.

[0088] Further, step S604 in which the terminal determines an operation result of the rule based on the rule tree and the service data can include the following: performing, by the terminal, post-order traversal on the rule tree, calculating a value of a root node in the rule tree in the post-order traversal process based on the service data, and determining a calculation result as the operation result of the rule.

[0089] Further, the service data related to the rule tree includes service data needed for calculating the expression. The calculating a value of a root node in the rule tree can include the following: calculating a value of each expression based on the obtained service data needed for calculating the expression; and calculating the value of the root node in the rule tree in the post-order traversal process based on the calculated value of each expression and the determined logical operator.

[0090] In this implementation of the present application, after the calculation result is obtained, a tracing path of the calculation result is recorded to output corresponding

CLAIMS

1. A method for processing a rule operation, the method comprising:

receiving, by a terminal, a rule operation request of a service (S601);

obtaining, by the terminal, a rule corresponding to the rule operation request from a rule set of the service, wherein the rule set is obtained from a server based on a device identifier and/or a user identifier corresponding to the terminal (S602);

generating, by the terminal, a rule tree based on the rule (S603);

retrieving, by the terminal, service data related to the rule tree (S603); and

determining, by the terminal, an operation result of the rule based on the rule tree and the service data (S604).

2. The method according to claim 1, wherein generating, by the terminal, the rule tree based on the obtained rule comprises the following operations:

determining, by the terminal, an expression and/or a logical operator for reflecting the rule based on the obtained rule; and

generating, by the terminal, the rule tree based on the determined expression and/or logical operator.

3. The method according to claim 2, wherein the rule tree comprises a leaf node and a non-leaf node, wherein the leaf node in the rule tree is the determined expression, and the non-leaf node in the rule tree is the logical operator.

4. The method according to claim 3, wherein determining, by the terminal, the operation result of the rule based on the rule tree and the service data is based on:

performing, by the terminal, post-order traversal on the rule tree, calculating a value of a root node in the rule tree in the post-order traversal process based on the service data, and determining a calculation result as the operation result of the rule.

5. The method according to claim 4, wherein the service data related to the rule tree comprises service data needed for calculating the expression; and

calculating the value of a root node in the rule tree comprises the following:

calculating a value of each expression based on the obtained service data needed for calculating the expression; and

calculating the value of the root node in the rule tree in the post-order traversal

process based on the calculated value of each expression and the determined logical operator.

6. The method according to claim4, further comprising:

recording a tracing path of the calculation result to output corresponding operation information.

7. The method according to claim 1, further comprising:

retrieving, by the terminal, update data in the rule set from the server based on the device identifier and/or the user identifier corresponding to the terminal.

8. The method according to any one of claims 1 to 7, wherein the service comprises an online service.

9. The method according to claim 8, wherein the online service comprises an e-commerce service, a finance service, a communication service, a risk control service, or a video surveillance service.

10. The method according to any one of claims 1 to 9, wherein generating the rule tree is based on an optimization algorithm.

11. A device for processing a rule operation, the device comprising a plurality of modules configured to perform the method of any one of claims 1 to 10.