

CLAIMS

What is claimed is:

1. A method for pushing subscription data in Internet of things, wherein the method is
5 performed by a subscription server, and comprises:
 - parsing a subscription condition set into a first attribute set in response to receiving the subscription condition set, wherein the first attribute set comprises at least one attribute element set, and the subscription condition set comprises at least one subscription condition;
 - acquiring device data, wherein the device data is stored in the subscription server;
 - 10 parsing the device data into a second attribute set, wherein attribute elements in the second attribute set are of a same type as the attribute element set in the first attribute set;
 - performing Bloom filtering on the attribute elements in the second attribute set one by one in a predetermined order by taking the attribute element set in the first attribute set as a filter condition;
 - 15 stopping the Bloom filtering on other attribute elements in the second attribute set in the case that a Bloom filtering result of one of the attribute elements in the second attribute set indicates a mismatch with a corresponding attribute element set in the first attribute set; and
 - returning to the step of acquiring the device data.
- 20 2. The method according to claim 1, wherein
 - performing the Bloom filtering on the attribute elements in the second attribute set one by one in the predetermined order by taking the attribute elements in the first attribute set as the filter condition comprises:
 - acquiring a binary vector set corresponding to the attribute element set in the first
25 attribute set by performing a Hash operation on attribute values of the attribute elements in the first attribute set respectively;
 - acquiring a binary vector corresponding to the attribute elements in the second attribute set by performing a Hash operation on attribute values of the attribute elements in the second attribute set respectively; and
 - 30 matching the binary vector set corresponding to the attribute element set in the first attribute set with the binary vector corresponding to the attribute elements in the second attribute set in a predetermined matching order; and
 - stopping the Bloom filtering on the other attribute elements in the second attribute set in the case that the Bloom filtering result of one of the attribute elements in the second attribute set

indicates the mismatch with the corresponding attribute element set in the first attribute set comprises:

5 stopping the Bloom filtering on the other attribute elements in the second attribute set in the case that one of binary vectors corresponding to the attribute elements in the second attribute set fails to match one of binary vector sets corresponding to the attribute elements in the first attribute set.

3. The method according to claim 1, wherein in the case that a number of subscription conditions is 1, the method further comprises:

10 transmitting the device data to a client in the case that the Bloom filtering result of the attribute elements in the second attribute set indicates a corresponding match with the attribute element set in the first attribute set, wherein the client is a terminal for transmitting the subscription condition.

15 4. The method according to claim 1, wherein in the case that a number of subscription conditions is greater than 1, the method further comprises:

acquiring a unified subscription condition by intersecting subscription condition sets corresponding to the attribute elements which are successfully matched in the first attribute sets in the case that that the Bloom filtering result of the attribute elements in the second attribute set indicates a corresponding successful match with the attribute element set in the first attribute set;

20 acquiring a matching result by matching an attribute set corresponding to the unified subscription condition with the second attribute set; and

transmitting the device data to a client in response to the matching result indicating that the second attribute set is successfully matched with the attribute set corresponding to the unified subscription condition.

25 5. The method according to claim 4, wherein acquiring the unified subscription condition by intersecting the subscription condition sets corresponding to the attribute elements which are successfully matched in the first attribute sets in the case that that the Bloom filtering result of the attribute elements in the second attribute set indicates the corresponding successful match with the attribute element set in the first attribute set comprises:

acquiring the unified subscription condition by intersecting the subscription condition sets corresponding to the attribute elements which are successfully matched in the first attribute sets in the case that a binary vector set corresponding to the attribute element set in the first attribute

set is successfully matched with a binary vector corresponding to the attribute elements in the second attribute set.

6. The method according to any one of the claims 1 to 5, wherein the attribute element set in the first attribute set is at least one of a model, a device, and a measurement point.

7. An apparatus for pushing subscription data in Internet of things,, wherein the apparatus is applicable to a subscription server, and comprises:

a first parsing module, configured to parse a subscription condition set into a first attribute set in response to receiving the subscription condition set, wherein the first attribute set comprises at least one attribute element set, and the subscription condition set comprises at least one subscription condition;

an acquiring module, configured to acquire device data, wherein the device data is stored in the subscription server;

a second parsing module, configured to parse the device data into a second attribute set, wherein attribute elements in the second attribute set are of a same type as the attribute element set in the first attribute set;

a Bloom filtering module, configured to perform Bloom filtering on the attribute elements in the second attribute set one by one in a predetermined order by taking the attribute element set in the first attribute set as a filter condition;

a stopping module, configured to stop the Bloom filtering on other attribute elements in the second attribute set in the case that a Bloom filtering result of one of the attribute elements in the second attribute set indicates a mismatch with a corresponding attribute element set in the first attribute set; and

a returning module, configured to return to the step of acquiring the device data.

8. The apparatus according to claim 7, wherein the Bloom filtering module comprises:

a first calculating submodule, configured to acquire a binary vector set corresponding to the attribute element set in the first attribute set by performing a Hash operation on attribute values of the attribute elements in the first attribute set; and

a second calculating submodule, configured to acquire a binary vector corresponding to the attribute elements in the second attribute set by performing a Hash operation on attribute values of the attribute elements in the second attribute set;

wherein the stopping module is further configured to stop the Bloom filtering on the other

attribute elements in the second attribute set in the case that one of the binary vectors corresponding to the attribute elements in the second attribute set fails to match one of the binary vector sets corresponding to the attribute elements in the first attribute set.

- 5 9. A computer device, comprising a processor and a memory storing at least one instruction, at least one program, a code set, or an instruction set therein, wherein the at least one instruction, the at least one program, the code set, or the instruction set, when loaded and executed by the processor, causes the processor to perform the method for pushing subscription data in Internet of things as defined in any one of claims 1 to 6.

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10. A non-transitory computer-readable storage medium, storing at least one instruction, at least one program, a code set, or instruction set, wherein the at least one instruction, the at least one program, the code set, or the instruction set, when loaded and executed by a processor of computer device, causes the computer device to perform the method for pushing subscription data in Internet of things as defined in any one of claims 1 to 6.

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