CLAIMS

What is claimed is:

1. A privacy computing task execution method, comprising:

creating, by a privacy task controller in a kubernetes cluster, a task resource group based on description information of a submitted privacy computing task, wherein information of the task resource group comprises information of a plurality of participants of the privacy computing task, a threshold of a quantity of participants that satisfy a scheduling requirement, and a duration in which a participant reserves a resource;

creating, by the privacy task controller in each of namespaces of the plurality of participants, a task pod used to run the privacy computing task;

learning, by a centralized scheduler in the kubernetes cluster through watching, that the task pod is created, and obtaining the information of the task resource group based on the task pod;

when it is determined that a quantity of participants that satisfy the scheduling requirement is not less than the threshold of the quantity of participants, scheduling, by the centralized scheduler, the task pod to a computing node of the participant that satisfies the scheduling requirement; and

when it is determined that a timing reaches the duration and the quantity of participants that satisfy the scheduling requirement is less than the threshold of the quantity of participants, releasing, by the centralized scheduler, a successfully reserved resource of the participant that satisfies the scheduling requirement.

2. The method according to claim 1, wherein after the learning, by a centralized scheduler in the kubernetes cluster through watching, that the task pod is created, and obtaining the information of the task resource group based on the task pod, the method further comprises:

obtaining, by the centralized scheduler, node resource information of each of the plurality of participants, wherein the node resource information is registered in the kubernetes cluster; and

determining, based on the node resource information, whether a corresponding participant satisfies the scheduling requirement.

3. The method according to claim 1, wherein after the releasing a successfully reserved resource of the participant that satisfies the scheduling requirement, the method further comprises:

performing, by the centralized scheduler, a next round of scheduling for the privacy computing task.

4. The method according to claim 1 or 3, wherein the information of the task resource group further comprises a lifecycle of the task resource group, and the kubernetes cluster further comprises a task resource group controller; and the method further comprises:

updating, by the task resource group controller, a state of the task resource group to "failed" when it is determined that the lifecycle ends and scheduling of the privacy computing task is not completed.

5. The method according to claim 4, wherein after the updating, by the task resource group controller, a state of the task resource group to "failed", the method further comprises:

after the privacy task controller learns through watching that the state of the task resource group is "failed", updating, by the privacy task controller, a task state of the privacy computing task to "failed", and/or deleting the task resource group and the task pod.

6. The method according to claim 1, wherein after the scheduling, by the centralized scheduler, the task pod to a computing node of the participant that satisfies the scheduling requirement, the method further comprises:

updating, by the centralized scheduler, a state of the task resource group to a successful state.

7. The method according to any one of claims 1 to 3, 5, and 6, wherein the description information of the privacy computing task comprises at least one of the following: information of the plurality of participants, the threshold of the quantity of participants, or a participant scheduling requirement.

8. A privacy computing task execution method, implemented by a privacy task controller in a kubernetes cluster, the method comprising:

creating a task resource group based on description information of a submitted privacy computing task, wherein information of the task resource group comprises information of a plurality of participants of the privacy computing task, a threshold of a quantity of participants that satisfy a scheduling requirement, and a duration in which a participant reserves a resource; and

creating, in each of namespaces of the plurality of participants, a task pod used to run the privacy computing task, wherein the kubernetes cluster further comprises a centralized scheduler, configured to: learn through watching that the task pod is created, obtain the information of the task resource group based on the task pod, and when it is determined that the quantity of

participants that satisfy the scheduling requirement is not less than the threshold of the quantity of participants, schedule the task pod to a computing node of the participant that satisfies the scheduling requirement, and

when it is determined that a timing reaches the duration and the quantity of participants that satisfy the scheduling requirement is less than the threshold of the quantity of participants, release a successfully reserved resource of the participant that satisfies the scheduling requirement.

9. A privacy computing task execution method, implemented by a centralized scheduler in a kubernetes cluster, wherein the kubernetes cluster further comprises a privacy task controller; the privacy task controller is configured to: create a task resource group based on description information of a submitted privacy computing task, wherein information of the task resource group comprises information of a plurality of participants of the privacy computing task, a threshold of a quantity of participants that satisfy a scheduling requirement, and a duration in which a participant reserves a resource; and create, in each of namespaces of the plurality of participants, a task pod used to run the privacy computing task,

and the method comprises:

learning through watching that the task pod is created, and obtaining the information of the task resource group based on the task pod; and

when it is determined that a quantity of participants that satisfy the scheduling requirement is not less than the threshold of the quantity of participants, scheduling the task pod to a computing node of the participant that satisfies the scheduling requirement; and

when it is determined that a timing reaches the duration and the quantity of participants that satisfy the scheduling requirement is less than the threshold of the quantity of participants, releasing, by the centralized scheduler, a successfully reserved resource of the participant that satisfies the scheduling requirement.

10. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program, and when the computer program is executed on a computer, the computer is enabled to perform the method according to any one of claims 1 to 9.

11. A computing device, comprising a memory and a processor, wherein the memory stores executable code, and when the processor executes the executable code, the method according to any one of claims 1 to 9 is implemented.