CLAIMS

1. A method for establishing a network connection, comprising:

selecting, by a controller based on one or more selectable tags carried by a network connection object, one or more selectable application instances corresponding to the one or more selectable tags, respectively, from one or more preset original application instances;

selecting one or more excludable application instances from the one or more original application instances based on exclusion indication information carried by the network connection object;

deleting, by the controller, one or more of the one or more selectable application instances based on the one or more excludable application instances, to obtain one or more candidate application instances associated with a first service network and a second service network;

selecting, by the controller based on a running status corresponding to each of the one or more candidate application instances, one or more target application instances that meet a preset running condition from the one or more candidate application instances; and

establishing, by the controller, a network connection between the first service network and the second service network based on each target application instance.

2. The method according to claim 1, wherein the selecting, by the controller, the one or more excludable application instances from the one or more original application instances based on the exclusion indication information carried by the network connection object comprises:

selecting, by the controller based on one or more exclusion tags in the exclusion indication information, one or more excludable application instances corresponding to the one or more exclusion tags, from the one or more original application instances; and

determining, by the controller based on one or more first application instance identifiers in the exclusion indication information, one or more excludable application instances corresponding to the one or more first application instance identifiers, from the one or more original application instances.

3. The method according to claim 1, wherein deleting, by the controller, the one or more of the one or more selectable application instances based on the one or more selected excludable application instances, to obtain the one or more candidate application instances associated with the first service network and the second service network comprises:

for each excludable application instance, performing, by the controller, the following operations respectively:

in response to determining, based on an application instance identifier corresponding to the excludable application instance, that the excludable application instance is one of the one or more selectable application instances, deleting one of the one or more selectable application instances that corresponds to the application instance identifier; and

determining, by the controller, one or more remaining selectable application instances as the one or more candidate application instances.

4. The method according to claim 1, wherein the deleting, by the controller, the one or more of the one or more selectable application instances based on the one or more excludable application instances, to obtain the one or more candidate application instances associated with the first service network and the second service network comprises:

generating, by the controller, an excludable application instance set including the one or more excludable application instances, and a selectable application instance set including the one or more selectable application instances; and

deleting, by the controller based on an intersection between the excludable application instance set and the selectable application instance set, one or more excludable application instances in the intersection from the selectable application instance set, to obtain a candidate application instance set including the one or more candidate application instances by using each remaining selectable application instance as a candidate application instance.

5. The method according to claim 1, wherein the running status comprises at least a probe configuration status, and the selecting, by the controller based on the running status corresponding to each of the one or more candidate application instances, the one or more target application instances that meet a preset running condition, from the one or more candidate application instances, for each candidate application instance, comprises:

in response to determining that the probe configuration status corresponding to the candidate application instance is configured and detection of a corresponding configured probe succeeds, determining the candidate application instance as a target application instance, each probe being configured to determine whether a corresponding candidate application instance is in a state of normally providing a network service; and

in response to determining that the probe configuration status is unconfigured and an application instance running status in the running status is continuous running, determining the

candidate application instance as the target application instance.

6. The method according to any one of claims 1 to 5, further comprising:

adding, by the controller, the one or more candidate application instances with probe configuration status being unconfigured to a probe-free application instance set;

adding, by the controller, each target application instance to a service-available application instance set;

adding, by the controller, each candidate application instance that is not one of the one or more target application instances to a service-not-available application instance set; and

storing, by the controller, the probe-free application instance set, the service-available application instance set, and the service-not-available application instance set into a network status.

7. The method according to claim 1, wherein establishing, by the controller, the network connection between the first service network and the second service network based on the one or more target application instances comprises:

establishing, by the controller, a network interface between the first service network and the second service network by invoking a connection creation interface; and

providing, by the controller, a network service of the second service network to the first service network by invoking the one or more target application instances and the network interface.

8. The method according to any one of claims 1 to 7, further comprising:

tuning, by the controller, the network connection in response to obtaining an update time corresponding to the network connection, the update time being generated by an API server by updating a network connection object after setting a deletion timestamp for the network connection object to a current time in response to receiving a deletion request for the network connection;

during a process of tuning the network connection, in response to determining that the deletion timestamp is the current time, determining, by the controller, that the network status corresponding to the network connection is that the network connection is expected to be deleted, the deletion timestamp being set in response to receiving the deletion request; and

deleting, by the controller, the network connection.

9. The method according to claim 8, wherein the deleting, by the controller, the network connection comprises:

deleting, by the controller, one or more network service interfaces corresponding to the

network connection by invoking a deletion network interface;

removing, by the controller, a deletion interception identifier corresponding to the network connection and generating a deletion instruction; and

transmitting, by the controller, the deletion instruction to the API server, to enable the API server to delete the network connection object corresponding to the network connection.

10. An apparatus for establishing a network connection, applied to a controller, comprising:

a first selecting module, configured to select, based on one or more selectable tags carried by a network connection object, one or more selectable application instances corresponding to the one or more selectable tags, respectively, from one or more preset original application instances, and select one or more excludable application instances from the one or more original application instances based on exclusion indication information carried by the network connection object;

a determining module, configured to delete one or more of the one or more selectable application instances based on the one or more excludable application instances, to obtain one or more candidate application instances associated with a first service network and a second service network;

a second selecting module, configured to select, based on a running status corresponding to each of the one or more candidate application instances, one or more target application instances that meet a preset running condition from the one or more candidate application instances; and

an establishing module, configured to establish a network connection between the first service network and the second service network based on the one or more target application instances.

11. The apparatus according to claim 10, wherein in a case of selecting the one or more excludable application instances from the one or more original application instances based on exclusion indication information carried by the network connection object, the first selecting module is further configured to:

select, based on one or more exclusion tags in the exclusion indication information, one or more excludable application instances corresponding to the one or more exclusion tags, from the one or more original application instances; and

determine, based on one or more first application instance identifiers in the exclusion indication information, one or more excludable application instances corresponding to the one or more first application instance identifiers, from the one or more original application instances.

12. The apparatus according to claim 10, wherein in a case of deleting the one or more of the

one or more selectable application instances based on the one or more excludable application instances, to obtain the one or more candidate application instances associated with the first service network and the second service network, the determining module is further configured to:

for each excludable application instance, perform the following operations respectively:

in response to determining, based on an application instance identifier corresponding to the excludable application instance, that the excludable application instance is one of the one or more selectable application instances, deleting one of the one or more selectable application instances that corresponds to the application instance identifier; and

determining one or more remaining selectable application instances as the one or more candidate application instances.

13. The apparatus according to claim 10, wherein in a case of deleting the one or more of the one or more selectable application instances based on the one or more excludable application instances, to obtain the one or more candidate application instances associated with the first service network and the second service network, the determining module is further configured to:

generate an excludable application instance set including the one or more excludable application instances, and a selectable application instance set including the one or more selectable application instances; and

delete, based on an intersection between the excludable application instance set and the selectable application instance set, one or more excludable application instance in the intersection from the selectable application instance set, to obtain a candidate application instance set including the one or more candidate application instances by using each remaining selectable application instance as a candidate application instance.

14. The apparatus according to claim 10, wherein the running status at least comprises a probe configuration status, and the second selecting module is further configured to:

for each candidate application instance, perform the following operations respectively:

in response to determining that the probe configuration status corresponding to the candidate application instance is configured and detection of a corresponding configured probe succeeds, determining the candidate application instance as a target application instance, each probe being configured to determine whether a corresponding candidate application instance is in a state of normally providing a network service; and

in response to determining that the probe configuration status is unconfigured and an

application instance running status in the running status is continuous running, determining the candidate application instance as the target application instance.

15. The apparatus according to any one of claims 10 to 14, wherein the apparatus further comprises an adding module, and the adding module is configured to:

add each candidate application instance with probe configuration status being unconfigured to a probe-free application instance set;

add the one or more target application instances to a service-available application instance set;

add each candidate application instance that is not one of the one or more target application instances to a service-not-available application instance set; and

store the probe-free application instance set, the service-available application instance set, and the service-not-available application instance set into a network status.

16. The apparatus according to claim 10, wherein the establishing module is further configured to:

establish a network interface between the first service network and the second service network by invoking a connection creation interface; and

provide a network service of the second service network to the first service network by invoking the one or more target application instances and the network interface.

17. The apparatus according to any one of claims 10 to 16, wherein the apparatus further comprises a deletion module, and the deletion module is configured to:

tune the network connection in response to obtaining an update time corresponding to the network connection, the update time being generated by an API server by updating a network connection object after setting a deletion timestamp for the network connection object to a current time in response to receiving a deletion request for the network connection;

during a process of tuning the network connection, in response to determining that the deletion timestamp is the current time, determine that the network status corresponding to the network connection is that the network connection is expected to be deleted, the deletion timestamp being set in response to receiving the deletion request; and

delete the network connection.

18. An electronic device, comprising a processor and a memory, wherein the memory stores program code, and when the program code is executed by the processor, the processor performs

operations of the method according to any one of claims 1 to 9.

19. A computer-readable storage medium, comprising program code, when the program code runs on an electronic device, the program code being used for causing the electronic device to perform operations of the method according to any one of claims 1 to 9.

20. A computer program product, comprising computer instructions, the computer instructions being stored in a computer-readable storage medium; and a processor of an electronic device reading the computer instructions from the computer-readable storage medium, and executing the computer instructions, to cause the electronic device to perform operations of the method according to any one of claims 1 to 9.