Claims

1. A computing access method, which is applied to a first gateway device, wherein the method comprises:

receiving a first computing access packet sent by a client, wherein the client accesses a computing network through the first gateway device, and a destination address of the first computing access packet is an address of a target computing service;

determining an address of a second gateway device corresponding to the address of the target computing service based on a pre-stored first computing routing table, wherein the first computing routing table comprises an address of a computing service and an address of a gateway device connected to a service node, where a service instance that provides the computing service is located, when the service node accesses the computing network;

encapsulating the first computing access packet based on an address of the first gateway device and the address of the second gateway device, to obtain a second computing access packet;

sending the second computing access packet to the second gateway device.

2. The method according to claim 1, wherein the first computing routing table further comprises a routing cost of accessing the service node where the service instance that provides the computing service is located;

wherein determining the address of the second gateway device corresponding to the address of the target computing service based on the pre-stored first computing routing table, comprises:

determining an address of a second gateway device corresponding to the address of the target computing service which corresponds to a smallest routing cost, based on the pre-stored first computing routing table.

3. The method according to claim 1, wherein encapsulating the first computing access packet based on the address of the first gateway device and the

address of the second gateway device, to obtain the second computing access packet, comprises:

encapsulating a segment routing over Internet Protocol Version 6, SRv6, packet header in an outer layer of the first computing access packet, to obtain the second computing access packet, wherein a source address of the SRv6 packet header is the address of the first gateway device, a destination address of the SRv6 packet header is an address of a next hop device of the first gateway device on a path from the first gateway device to the second gateway device.

4. The method according to claim 1, wherein the first computing routing table further comprises an address of the service instance that provides the computing service; the method further comprises:

determining an address of a target service instance corresponding to the address of the target computing service based on the pre-stored first computing routing table;

wherein encapsulating the first computing access packet based on the address of the first gateway device and the address of the second gateway device, to obtain the second computing access packet, comprises:

encapsulating an SRv6 packet header in an outer layer of the first computing access packet, and modifying the destination address of the first computing access packet to the address of the target service instance, to obtain the second computing access packet, wherein a source address of the SRv6 packet header is the address of the first gateway device, a destination address of the SRv6 packet header is an address of a next hop device of the first gateway device on a path from the first gateway device to the second gateway device;

preferably, wherein the SRv6 packet header comprises a segment routing header SRH, and an optional field of the SRH is filled with an identity indicating the address of the target computing service.

5. The method according to claim 1, wherein before receiving the first computing access packet sent by the client, the method further comprises:

receiving a routing protocol announcement sent by the second gateway

device, wherein the routing protocol announcement comprises static attribute information and dynamic attribute information of a target service instance that provides the target computing service;

generating the first computing routing table based on the static attribute information and the dynamic attribute information;

preferably, wherein the static attribute information comprises one or more of: the address of the target computing service, a name of the target computing service, a service type of the target computing service, the address of the target service instance, a location of the target service instance, a priority of the target service instance, and a capability of the target service instance; or

the dynamic attribute information comprises one or more of a load status and a session status of the target service instance.

6. The method according to any one of claims 1 to 5, wherein the address of the computing service consists of a preset address prefix and an identity of the computing service;

the address of the computing service comprised in the first computing routing table is represented by the identity of the computing service;

preferably, wherein the address of the computing service and an address of the service instance are respectively in a same form as an Internet Protocol, IP, address.

7. A computing access method, which is applied to a second gateway device, wherein the method comprises:

receiving a second computing access packet from a first gateway device, wherein the first gateway device is a gateway device connected to a client when the client accesses a computing network, the second computing access packet is a packet encapsulated by the first gateway device based on an address of the first gateway device and an address of the second gateway device, after determining the address of the second gateway device based on a pre-stored first computing routing table and a destination address of a first computing access packet sent by the client,

wherein the destination address of the first computing access packet is an address of a target computing service, the first computing routing table comprises an address of a

computing service, and an address of a gateway device connected to a service node, where a service instance that provides the computing service is located, when the service node accesses the computing network;

decapsulating the second computing access packet, to obtain a third computing access packet;

determining an address of a target proxy device corresponding to the address of the target computing service based on a pre-stored second computing routing table, wherein the second computing routing table comprises an address of a computing service and an address of a proxy device of a service instance that provides the computing service;

sending the third computing access packet to a target service node, where a target service instance that provides the target computing service is located, based on the address of the target proxy device.

8. The method according to claim 7, wherein the second computing access packet comprises a segment routing over Internet Protocol Version 6, SRv6, packet header and a load, and a source address of the SRv6 packet header is the address of the first gateway device, a destination address of the SRv6 packet header is the address of the second gateway device, and the load is the first computing access packet;

wherein decapsulating the second computing access packet, to obtain the third computing access packet, comprises:

removing the SRv6 packet header of the second computing access packet, to obtain the first computing access packet which is the third computing access packet.

9. The method according to claim 7, wherein the first computing routing table further comprises an address of the service instance that provides the computing service; the second computing routing table further comprises the address of the service instance that provides the computing service;

the second computing access packet comprises an SRv6 packet header and a load, a source address of the SRv6 packet header is the address of the first gateway device, a destination address of the SRv6 packet header is the address of the second gateway device, and the load is the third computing access packet obtained by modifying the destination address of the first computing access packet to an address of the target service

instance;

wherein decapsulating the second computing access packet, to obtain the third computing access packet, comprises:

removing the SRv6 packet header of the second computing access packet, to obtain the third computing access packet;

wherein determining the address of the target proxy device corresponding to the address of the target computing service based on the pre-stored second computing routing table, comprises:

determining the address of the target proxy device corresponding to the address of the target service instance based on the pre-stored second computing routing table;

preferably, wherein the SRv6 packet header comprises a segment routing header SRH, and an optional field of the SRH is filled with a target identity indicating the address of the target computing service;

wherein determining the address of the target proxy device corresponding to the address of the target computing service based on the pre-stored second computing routing table, comprises:

determining the address of the target proxy device corresponding to the target identity and the address of the target service instance based on the pre-stored second computing routing table.

10. The method according to claim 7, wherein, before receiving the second computing access packet, the method further comprises:

receiving the second computing routing table issued by an operation and maintenance platform in the computing network;

storing the second computing routing table.

11. The method according to claim 7, wherein before receiving the second computing access packet, the method further comprises:

receiving static attribute information and dynamic attribute information of the target service instance collected by the target proxy device;

generating the second computing routing table based on the static attribute information and the dynamic attribute information;

preferably, wherein the dynamic attribute information comprises one or more of a load status and a session status of the target service instance.

12. The method according to claim 7, wherein before receiving the second computing access packet, the method further comprises:

receiving static attribute information of the target service instance collected by the target proxy device, wherein the static attribute information comprises a name of the target computing service;

if the address of the target computing service corresponding to the name of the target computing service is not stored in the second gateway device, sending the static attribute information to an operation and maintenance platform in the computing network;

receiving the address of the target computing service allocated by the operation and maintenance platform for the target computing service based on the static attribute information;

preferably, wherein after obtaining the address of the target computing service, the method further comprises:

sending a routing protocol announcement to the first gateway device, wherein the routing protocol announcement comprises the static attribute information and dynamic attribute information of the target service instance.

13. The method according to any one of claims 11 to 12, wherein the static attribute information comprises one or more of: the address of the target computing service, a name of the target computing service, a service type of the target computing service, an address of the target service instance, a location of the target service instance, a priority of the target service instance, and a capability of the target service instance.

14. The method according to any one of claims 7 to 12, wherein the address of the computing service consists of a preset address prefix and an identity of the computing service;

an address of each computing service comprised in the first computing routing table and the second computing routing table is represented by the identity of the computing service;

preferably, wherein the address of the computing service and the address of the

service instance are respectively in a same form as an Internet Protocol, IP, address.

15. A network device, which comprises a processor and a machine-readable storage medium, wherein the machine-readable storage medium stores machine-executable instructions thereon, which can be executed by the processor, to cause the processor to carry out the method according to any one of claims 1 to 6, or carry out the method according to any one of claims 7 to 14.