CLAIMS

What is claimed is:

1. A device management method, which is applied to a first device in a self-organizing network and comprises:

when the first device is a master device, a network support module of the first device receiving, through a first tunnel between the network support module of the first device and a network support module of a second device in the self-organizing network, a discovery request sent by the network support module of the second device, wherein the discovery request comprises target device information of the second device;

the network support module of the first device sending a management notification to the network support module of the second device through the first tunnel, and sending a join event to a network service module of the first device, wherein the join event comprises the target device information;

the network service module of the first device acquiring first configuration information matching the target device information, and sending the first configuration information to the network support module of the first device;

the network support module of the first device sending the first configuration information to a network service module of the second device through a second tunnel between the network support module of the first device and the network service module of the second device, so that the network service module of the second device performs configuration by using the first configuration information when the network support module of the second device receives the management notification.

2. The method of claim 1, wherein the network service module of the first device sending the first configuration information to the network support module of the first device, comprises:

the network service module of the first device invoking an interface of the second tunnel to send the first configuration information to the network support module of the first device;

the network support module of the first device sending the first configuration

information to the network service module of the second device through the second tunnel between the network support module of the first device and the network service module of the second device, comprises:

the network support module of the first device receiving the first configuration information through the interface of the second tunnel between the network support module of the first device and the network service module of the second device; converting the first configuration information into a target message based on a preset protocol, and sending the target message to the network service module of the second device, so that the network service module of the second device converts the target message into the first configuration information and performs configuration by using the first configuration information when the network support module of the second device receives the management notification.

3. The method of claim 2, wherein the preset protocol is a simple object access protocol.

4. The method of claim 1, wherein after the network support module of the first device sends the first configuration information to the network service module of the second device, the method further comprises:

the network service module of the first device sending a register event comprising the target device information to a cloud through a cloud pipeline, so that the cloud registers the second device by using the target device information, and establishes a connection with the second device after the second device is registered and a connection request sent by the second device through the cloud pipeline is received, wherein the connection request is a request periodically sent by the second device, and the cloud pipeline is a connection established between the network service module of the first device and the cloud.

5. The method of claim 1, wherein after receiving the discovery request, the method further comprises:

if an automatic management function has been enabled, the network support module of the first device performing operations of sending a management notification to the network support module of the second device, and sending a join

event to the network service module of the first device;

if the automatic management function has not been enabled, the network support module of the first device refusing to respond to the discovery request.

6. The method of claim 5, wherein when the network support module of the first device has not enabled the automatic management function, the method further comprises:

if a management whitelist does not comprise the target device information, the network support module of the first device performing an operation of refusing to respond to the discovery request, wherein the management whitelist comprises device information of devices that are allowed to access the self-organizing network;

if the management whitelist comprises the target device information, the network support module of the first device performing operations of sending a management notification to the network support module of the second device, and sending a join event to the network service module of the first device.

7. The method of claim 1, further comprising:

the network service module of the first device sending target page data provided by a network interaction module of the first device to a user terminal, so that the user terminal displays the target page data and performs an operation on the target page data to obtain second configuration information for the second device;

the network service module of the first device receiving the second configuration information sent by the user terminal, and sending the second configuration information to the network support module of the first device;

the network support module of the first device sending the second configuration information to the network service module of the second device through the second tunnel, so that the network service module of the second device performs configuration by using the second configuration information.

8. The method of claim 7, wherein the network service module of the first device sending the target page data provided by the network interaction module of the first device to the user terminal, comprises:

the network service module of the first device receiving an access request sent by

the user terminal, wherein the access request comprises a target URL;

the network service module of the first device acquiring the target page data provided by the network interaction module of the first device when the target URL is a domain name of the self-organizing network;

the network service module of the first device carrying the target page data in an access response to the access request, and feeding the access response back to the user terminal.

9. The method of claim 8, wherein the access request is a request from the user terminal sent by a network support module of a third device in the self-organizing network through a third tunnel between the network support module of the third device and the network support module of the first device; or

the access request is a request from the user terminal sent by a cloud through a cloud pipeline.

10. The method of claim 7, wherein the network service module of the first device sending the target page data provided by the network interaction module of the first device to the user terminal, comprises:

the network service module of the first device receiving a page request sent by a network support module of a fourth device in the self-organizing network through a fourth tunnel between the network support module of the fourth device and the network service module of the first device, wherein the page request is a request sent by a network service module of the fourth device to the first device after receiving an access request from the user terminal, wherein the target URL comprised in the access request is a domain name of the self-organizing network;

the network service module of the first device acquiring the target page data from the network interaction module of the first device according to the page request; sending the target page data to the network service module of the fourth device through a fifth tunnel between the network support module of the first device and the network service module of the fourth device, so that the network service module of the fourth device carries the target page data in an access response to the access request, and feeds the access response back to the user terminal.

11. The method of any one of claims 1-10, comprising:

the network support module of the first device performing a second-layer negotiation with a network support module of another device in the self-organizing network through a sixth tunnel between the network support module of the first device and the network support module of the another device, and determining a role of each of the first device and the another device in the self-organizing network, wherein the role is the master device or a slave device.

12. A network device, comprising a first network support module and a first network service module, wherein

the first network support module is to: when the network device is a master device of a self-organizing network, receive, through a first tunnel between first network support module and a network support module of a second device in the self-organizing network, a discovery request sent by the network support module of the second device, wherein the discovery request comprises target device information of the second device;

the first network support module is to send a management notification to the network support module of the second device through the first tunnel, and send a join event to the first network service module, wherein the join event comprises the target device information;

the first network service module is to acquire first configuration information matching the target device information, and send the first configuration information to the first network support module;

the first network support module is to send the first configuration information to a network service module of the second device through a second tunnel between first network support module and the network service module of the second device, so that the network service module of the second device performs configuration by using the first configuration information when the network support module of the second device receives the management notification.

13. The network device of claim 12, wherein, the first network service module is further to send a register event comprising the target device information to a cloud

through a cloud pipeline after the first network support module sends the first configuration information to the network service module of the second device, so that the cloud registers the second device by using the target device information, and establishes a connection with the second device after the second device is registered and a connection request sent by the second device through the cloud pipeline is received, wherein the connection request is a request periodically sent by the second device, and the cloud pipeline is a connection established between the first network service module and the cloud.

14. The network device of claim 12, wherein the first network support module is further to:

after receiving the discovery request, if an automatic management function has been enabled, send a management notification to the network support module of the second device, and send a join event to the first network service module;

if the automatic management function has not been enabled, refuse to respond to the discovery request.

15. The network device of claim 14, wherein the first network support module is further to:

when the automatic management function has not enabled, if a management whitelist does not comprise the target device information, refuse to respond to the discovery request, wherein the management whitelist comprises device information of devices that are allowed to access the self-organizing network;

if the management whitelist comprises the target device information, send a management notification to the network support module of the second device, and send a join event to the first network service module.

16. The network device of claim 12, wherein the network device further comprises a first network interaction module;

the first network service module is further to send target page data provided by a first network interaction module to a user terminal, so that the user terminal displays the target page data and performs an operation on the target page data to obtain second configuration information for the second device;

the first network service module is further to receive second configuration information sent by the user terminal, and send the second configuration information to the first network support module;

the first network support module is further to send the second configuration information to the network service module of the second device through the second tunnel, so that the network service module of the second device performs configuration by using the second configuration information.

17. The network device of claim 16, wherein the first network service module is specifically to:

receive an access request sent by the user terminal, wherein the access request comprises a target URL;

when the target URL is a domain name of the self-organizing network, acquire target page data provided by the first network interaction module;

carry the target page data in an access response to the access request, and feed the access response back to the user terminal.

18. The network device of claim 16, wherein the first network service module is specifically to:

receive a page request sent by a network support module of a fourth device in the self-organizing network through a fourth tunnel between the network support module of the fourth device and the first network service module, wherein the page request is a request sent by a network service module of the fourth device to the network device after receiving an access request from the user terminal, wherein the target URL comprised in the access request is a domain name of the self-organizing network;

acquire the target page data from the first network interaction module according to the page request; send the target page data to the network service module of the fourth device through a fifth tunnel between the first network support module and the network service module of the fourth device, so that the network service module of the fourth device carries the target page data in an access response to the access request, and feeds the access response back to the user terminal.

19. A network device, comprising a processor and a machine-readable storage

medium, where the machine-readable storage medium stores machine executable instructions that can be executed by the processor and cause the processor to implement the method of any one of claims 1-11.

20. A machine-readable storage medium, wherein the machine-readable storage medium stores a computer program thereon which, when executed by a processor, causes the processor to implement the method of any one of claims 1-11.