~~We claim:~~

CLAIMS

1. A method for providing automated network configuration for edge compute, comprising:

receiving a request for a user server instance in an edge compute network;

translating the request into compute provisioning tasks and networking provisioning tasks; and

causing a network configurator in communication with network resources to execute the networking provisioning tasks, wherein the network provisioning tasks comprise:

reserving a VLAN for the user server instance on a first port of a first network resource connected to a compute resource;

configuring the first port of the first network resource to translate VLAN communications between the compute resource and the first network resource;

automatically discovering a path between the first network resource and an egress network resource in the edge compute network; and

building the path between the first network resource and the egress network resource as the path is discovered.

2. The method of claim 1, wherein prior to building the path:

receiving an indication that the user server instance is built; and

removing a build network provided for securely building the user server instance.

3. The method of any preceding claim ~~1~~, wherein building the path comprises:

determining a next available VLAN on a second port of the first network resource;

discovering a second network resource upstream from the first connected network resource;

configuring a first port of the second network resource to translate VLAN communications between the first network resource and the second network resource;

determining a next available VLAN on a second port of the second network resource;

discovering a third network resource upstream from the second network resource, wherein the third network resource is the egress network resource;

configuring a first port of the egress network resource to translate VLAN communications between the second network resource and the egress network resource; and

building a spine subinterface on the egress network resource.

4. The method of claim 3, wherein:

the first network resource is a host leaf switch;

the second network resource is a spine switch device; and

building the path further comprises building a VXLAN, comprising:

reserving a second VLAN for the user server instance on a first port of a second host leaf switch connected to the compute resource;

configuring the first port of the second host leaf switch to translate VLAN communications between the compute resource and the first network resource;

determining a next available VLAN on a second port of the second host leaf switch;

discovering a second spine switch device upstream from the second host leaf switch;

configuring a first port of the second spine switch device to translate VLAN communications between the second host leaf switch and the second spine switch device;

discovering a second egress network resource upstream from the second spine switch device;

configuring a first port of the second egress network resource to translate VLAN communications between the second spine switch device and the second egress network resource;

building a spine subinterface on the second egress network resource;

determining a VXLAN on the second ports of the first and second host leaf devices; and

configuring the first ports of the first and second spine switch devices to translate VXLAN communications between the first and second host leaf devices and the first and second spine switch devices.

5. The method of claim 3 or 4, further comprising:

in response to receiving an indication of a failure in reserving the VLAN, configuring the first port of the first network resource, discovering the path between the first network resource and the egress network resource in the edge compute network, or building the path, backing out of the reservation, configuration, discovery, or build according to a backout workflow based on where the failure occurs.

6. The method of any preceding claim ~~1~~, wherein prior to reserving the VLAN:

receiving the inventory of available IP address blocks; and

based on utilization of the inventory of available IP address blocks, determining the IP address block for the user server instance.

7. The method of any preceding claim ~~1~~, wherein causing the network configurator to perform the network provisioning tasks comprises calling an application programming interface (API) of a network configuration orchestrator to open communication between an edge compute system orchestrator and the network configurator, and wherein the method further comprises calling an application programming interface (API) of a server configuration orchestrator to open communication between an edge compute system orchestrator and a compute orchestrator in communication with compute resources for executing the compute provisioning tasks.

8. The method of any preceding claim ~~7~~, wherein prior to reserving the VLAN for the user server instance:
reserving the compute resource in a compute inventory system; and
assigning a compute resource name to the user server instance.

9. The method of any preceding claim ~~8~~, where prior to configuring the first port, deploying the user server instance on the compute resource.

10. A system for providing automated network configuration for edge compute, the system comprising:
at least one processor;
memory operatively connected to the at least one processor and storing instructions that, when executed by the at least one processor, cause the system to:
receive a request for a user server instance in an edge compute network;
translate the request into compute provisioning tasks and networking provisioning tasks; and
causing a network configurator in communication with network resources to perform the network provisioning tasks, including:
reserve a VLAN for the user server instance on a first port of a first network resource connected to a compute resource;
configure the first port of the first network resource to translate VLAN communications between the compute resource and the first network resource;
automatically discover a path between the first network resource and an egress network resource in the edge compute network; and
build the path between the first network resource and the egress network resource as the path is discovered.

11. The system of claim 10, wherein prior to building the path, the system is operative to:

receive an indication that the user server instance is built; and

remove a build network provided for securely building the user server instance.

12. The system of claim 10 or 11, wherein in building the path, the system is operative to:

determine a next available VLAN on a second port of the first network resource;

discover a second network resource upstream from the first connected network resource;

configure a first port of the second network resource to translate VLAN communications between the first network resource and the second network resource;

determine a next available VLAN on a second port of the second network resource;

discover a third network resource upstream from the second network resource, wherein the third network resource is the egress network resource;

configure a first port of the egress network resource to translate VLAN communications between the second network resource and the egress network resource; and

build a spine subinterface on the egress network resource.

13. The system of claim 12, wherein:

the first network resource is a host leaf switch;

the second network resource is a spine switch device; and

building the path further comprises building a VXLAN.

14. The system of claim 12 or 13, wherein in response to receiving an indication of a failure in reserving the VLAN, configuring the first port of the first network resource, discovering the path between the first network resource and the egress network resource in the edge compute network, or building the path, the system is further operative to back out of the reservation, configuration, discovery, or build according to a backout workflow based on where the failure occurs.

15. The system of any one of claims 10 to 14, wherein prior to reserving the VLAN, the system if further operative to:

receive the inventory of available IP address blocks; and

based on utilization of the inventory of available IP address blocks, determine the IP address block for the user server instance.

16. The system of any one of claims 10 to 15, wherein causing the network configurator to perform the network provisioning tasks comprises calling an application programming interface (API) of a network configuration orchestrator to open communication between

an edge compute system orchestrator and the network configurator, and wherein the system is further operative to call an application programming interface (API) of a server configuration orchestrator to open communication between an edge compute system orchestrator and a compute orchestrator in communication with compute resources for executing the compute provisioning tasks.

17. The system of claim 10 to 16, wherein prior to reserving the VLAN for the user server instance, the system is further operative to:
reserve the compute resource in a compute inventory system; and
assign a compute resource name to the user server instance.

18. The system of claim 10 to 17, where prior to configuring the first port, the system is further operative to deploy the user server instance on the compute resource.

19. A system for providing on-demand edge compute, wherein the system is operative to:
receive a user request for a user server instance in an edge compute network; and
call an application programming interface (API) of a network configuration orchestrator to open communication between an edge compute system orchestrator and a network configurator in communication with network resources to:
gather network resources for a network configuration for the user server instance;
identify a network resource connected to a reserved compute resource;
reserve a VLAN on the network resource for the user server instance;
configure the network resource to point to the user server instance;
configure a path;
configure network service;
validate network connectivity; and
upon validation of network connectivity to the user server instance, provide a success message including an IP address of the user server instance.

20. The system of claim 19, wherein the system is further operative to:
call an application programming interface (API) of a server configuration orchestrator to open communication between the edge compute system orchestrator and a compute orchestrator to:
reserve the compute resource in a compute inventory system;
assign a compute resource name to the user server instance; and
deploy the user server instance on the compute resource.