CLAIMS

~~We claim:~~

1. A method for providing on-demand edge compute, comprising:

receiving a user request for an edge compute service;

translating the user request into compute provisioning tasks and network provisioning tasks; and

automatically building a service front end for the edge compute service from the compute provisioning tasks;

automatically building a network port configuration, a network path configuration, or a network configuration from the network provisioning tasks;

configuring an edge compute resource to host the service front end; and

configuring a network resource, based on the network port configuration, the network path configuration, or the network service configuration.

2. The method of claim 1, wherein prior to configuring the edge compute resource to host the service front end, allocating the compute resource for the edge compute service.

3. The method of claim 2, wherein allocating the compute resource comprises:

reserving the compute resource in a compute inventory system; and

assigning a compute resource name to the server front end.

4. The method of claim 2 or 3, further comprising:

determining an IP address block for the server front end from an inventory of available IP address blocks; and

reserving the IP address block to prevent, prior to a completion of the configuration of the network resource, a conflict of the IP address block being used for another edge compute service associated with another received user request.

5. The method of claim 4, wherein determining the IP address block comprises:

receiving the inventory of available IP address blocks; and

based on an efficient utilization of the inventory of available IP address blocks, determining the IP address block for the server front end.

6. The method of any preceding claim ~~4~~, wherein building the network port configuration, the network path configuration, or the network configuration further comprises:

determining a first network resource connected to the compute resource; and

reserving a VLAN on a first port on the first connected network resource.

7. The method of claim 6, wherein configuring the network resource comprises:

applying a network port configuration to the first port on the first connected network resource; and

when configuring the edge compute resource to host the service front end is complete, removing a build network provided for securely configuring the edge compute resource.

8. The method of claim 7, wherein configuring the network resource comprises configuring a network path, comprising:

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

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

applying the network port configuration to a first port on the second network resource;

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

discovering a third network resource upstream from the second network resource;

applying the network port configuration to a first port on the third network resource; and

building a spine subinterface on a second port on the third network resource.

9. The method of claim 8, wherein:

the first connected network resource is a host leaf device;

the second network resource is a spine switch device; and

the third network resource is an edge device that provides a gateway to a network via the second port.

10. The method of claim 8 or 9, wherein configuring the network path further comprises building a VXLAN between the first connected network resource and the second network resource.

11. The method of any preceding claim ~~1~~, further comprising providing a notification of an operational edge compute service to a user.

12. A system for providing on-demand 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 user request for an edge compute service;

translate the user request into compute provisioning tasks and network provisioning tasks;

automatically build a service front end for the edge compute service from the compute provisioning tasks;

automatically build a network port configuration, a network path configuration, or a network configuration from the network provisioning tasks;

configure an edge compute resource to host the service front end; and

configure a network resource, based on the network port configuration, the network path configuration, or the network service configuration.

13. The system of claim 12, wherein prior to configuring the edge compute resource to host the service front end, the system is operative to:

reserve the compute resource in a compute inventory system; and

assign a compute resource name to the server front end.

14. The system of claim 13, wherein the system is further operative to:

determine an IP address block for the server front end from an inventory of available IP address blocks based on an efficient utilization of the inventory of available IP address blocks; and

reserve the IP address block to prevent, prior to a completion of the configuration of the network resource, a conflict of the IP address block being used for another edge compute service associated with another received user request.

15. The system of any one of claims 12 to 14, wherein in building the network port configuration, the network path configuration, or the network configuration, the system is operative to:

determine a first network resource connected to the compute resource; and

reserve a VLAN on a first port on the first connected network resource.

16. The system of claim 15, wherein in configuring the network resource, the system is operative to:

apply a network port configuration to the first port on the first connected network resource; and

when configuration of the service front end is complete, remove a build network provided for securely configuring the edge compute resource.

17. The system of claim 16, wherein the system is further operative to:

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

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

apply the network port configuration to a first port on the second network resource;

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

discover a third network resource upstream from the second network resource;

apply the network port configuration to a first port on the third network resource; and

build a spine subinterface on a second port on the third network resource.

18. The system of claim 17, wherein:

the first connected network resource is a host leaf device;

the second network resource is a spine switch device; and

the third network resource is an edge device that provides a gateway to a network via the second port.

19. The system of claim 17 or 18, wherein in configuring the network path, the system is further operative to build a VXLAN between the first resource and the second network resource.

20. A system for providing on-demand edge compute, wherein the system is operative to:

receive a user request for an edge compute service;

allocate a compute resource at an edge site of a communications network for the edge compute service;

assign a server name to the edge compute service;

gather network resources for a network configuration for the edge compute service;

identify network resources connected to the compute resource;

reserve a VLAN at a first network resource for the edge compute service;

deploy the edge compute service on the compute resource;

configure a port of the first network resource with edge compute service-specific values;

configure a path;

configure network service; and

upon validation of network connectivity to the compute resource, provide a success message including an IP address of the edge compute service.