CLAIMS

1. A cable patch panel comprising:

a software-configurable network interface device having a first side, a second side different than the first side, a switch, and a configuration interface,

the first side comprising a first plurality of network interface ports that, when the cable patch panel is situated in at least one panel of a cage enclosure demarcating a customer area and provider area within a communication facility having an infrastructure network configured to interconnect a plurality of customer networks, are accessible only to a communication facility provider for the communication facility having an infrastructure network configured to interconnect a plurality of customer networks,

the second side comprising a second plurality of network interface ports that, when the cable patch panel is situated in the at least one panel of the cage enclosure demarcating the customer area and provider area, are accessible only to a customer of the communication facility provider, and

the configuration interface configured to, in response to receiving configuration data defining a connection between at least one port of the first plurality of network interface ports and at least one port of the second plurality of network interface ports, configure the switch to create the connection between the at least one port of the first plurality of network interface ports and the at least one port of the second plurality of network interface ports.

2. The cable patch panel of claim 1,

wherein the first plurality of network interface ports comprises at least one Ethernet port and at least one optical port, and

wherein the second plurality of network interface ports comprises at least one Ethernet port and at least one optical port.

3. The cable patch panel of claim 1,

wherein the first plurality of network interface ports comprises at least one pass-through port having a static connection to at least one of the second plurality of network interface ports.

4. The cable patch panel of claim 1,

wherein the configuration data defines a connection between multiple ports of the first plurality of network interface ports and a port of the second plurality of network interface ports, and

wherein to create the connection the configuration interface is configured to configure the switch to connect the multiple ports of the first plurality of network interface ports and the port of the second plurality of network interface ports.

5. The cable patch panel of claim 1,

wherein the configuration data defines a port of the second plurality of network interface ports as associated with a second virtual network and defines a port of the first plurality of network interface ports as associated with a first virtual network, and

wherein to create the connection the configuration interface is configured to configure the switch to forward packets received via the second virtual network to the first virtual network.

6. The cable patch panel of claim 1, wherein the second virtual network comprises a customer virtual local area network (VLAN) and the first virtual network comprises one of a provider VLAN and a provider VxLAN.

7. The cable patch panel of claim 1,

wherein the switch comprises an optical switch,

wherein to create the connection the configuration interface is configured to configure the optical switch to establish a transmission path for optical signals between the at least one port of the first plurality of network interface ports and the at least one port of the second plurality of network interface ports.

8. The cable patch panel of claim 7, wherein the optical switch comprises a photonic switch.

9. The cable patch panel of claim 1, wherein an access panel of the cable patch panel includes a security device that prevents access to the first plurality of network interface ports to all parties other than the communication facility provider.

10. The cable patch panel of claim 1, wherein a port of the first plurality of network interface ports receives, from a programmable network platform for the communication facility, the configuration data.

11. The cable patch panel of claim 1,

wherein the at least one port of the second plurality of network interface ports are coupled to a customer network for the customer, and

wherein the connection between the at least one port of the first plurality of network interface ports and the at least one port of the second plurality of network interface ports is part of a virtual circuit between the customer network and another customer network.

12. The cable patch panel of claim 1,

wherein the configuration data defines a connection between multiple ports of the first plurality of network interface ports and a port of the second plurality of network interface ports, and

wherein to create the connection the configuration interface is configured to configure the switch to connect the multiple ports of the first plurality of network interface ports and the port of the second plurality of network interface ports,

wherein multiple cables connected to the multiple ports of the first plurality of network interface ports include an aggregate pool of interconnection capacity through the communication facility coupled to the cable patch panel and available for uplink traffic sourced by a customer network connected to the port of the second plurality of network interface ports.

13. A cage structure of a communication facility, the cage structure comprising:

a cage enclosure having at least one panel demarcating a customer area and a provider area, the cage enclosure enclosing the customer area accessible only to a customer of the communication facility provider; and

a cable patch panel situated within the at least one panel comprising:

a software-configurable network interface device having a first side, a second side different than the first side, a switch, and a configuration interface,

the first side comprising a first plurality of network interface ports accessible only to a communication facility provider for a communication facility having an infrastructure network configured to interconnect a plurality of customer networks, and

the second side comprising a second plurality of network interface ports accessible only to the customer of the communication facility provider having access to the area enclosed by the cage enclosure, and

the configuration interface configured to, in response to receiving configuration data defining a connection between at least one port of the first plurality of network interface ports and at least one port of the second plurality of network interface ports, configure the switch to create the connection between the at least one port of the first plurality of network interface ports and the at least one port of the second plurality of network interface ports.

14. A method comprising:

receiving, by a configuration interface of a software-configurable network interface device of a cable patch panel, configuration data defining a connection between at least one port of the first plurality of network interface ports and at least one port of the second plurality of network interface ports,

wherein the software-configurable network interface device includes a first side, a second side different than the first side, and a switch,

wherein the first side comprises a first plurality of network interface ports accessible only to a communication facility provider for a communication facility having an infrastructure network configured to interconnect a plurality of customer networks, and

wherein the second side comprises a second plurality of network interface ports accessible only to a customer of the communication facility provider,

configuring, by the configuration interface in response to the receiving, the switch to create the connection between the at least one port of the first plurality of network interface ports and the at least one port of the second plurality of network interface ports.

15. The method of claim 14,

wherein the first plurality of network interface ports comprises at least one Ethernet port and at least one optical port, and

wherein the second plurality of network interface ports comprises at least one Ethernet port and at least one optical port.

16. The method of claim 14,

wherein the first plurality of network interface ports comprises at least one pass-through port having a static connection to at least one of the second plurality of network interface ports.

17. The method of claim 14,

wherein the configuration data defines a connection between multiple ports of the first plurality of network interface ports and a port of the second plurality of network interface ports, and

wherein to create the connection the configuration interface configures the switch to connect the multiple ports of the first plurality of network interface ports and the port of the second plurality of network interface ports.

18. The method of claim 14,

wherein the configuration data defines a port of the second plurality of network interface ports as associated with a second virtual network and defines a port of the first plurality of network interface ports as associated with a first virtual network, and

wherein to create the connection the configuration interface configures the switch to forward packets received via the second virtual network to the first virtual network.

19. The method of claim 14, wherein the second virtual network comprises a customer virtual local area network (VLAN) and the first virtual network comprises one of a provider VLAN and a provider VxLAN.

20. The method of claim 14,

wherein the switch comprises an optical switch,

wherein to create the connection the configuration interface configures the optical switch to establish a transmission path for optical signals between the at least one port of the first plurality of network interface ports and the at least one port of the second plurality of network interface ports.

21. The method of claim 20, wherein the optical switch comprises a photonic switch.

22. The method of claim 14, wherein an access panel of the cable patch panel includes a security device that prevents access to the first plurality of network interface ports to all parties other than the communication facility provider.

23. The method of claim 14, wherein a port of the first plurality of network interface ports receives, from a programmable network platform for the communication facility, the configuration data.

24. The method of claim 14,

wherein the at least one port of the second plurality of network interface ports are coupled to a customer network for the customer, and

wherein the connection between the at least one port of the first plurality of network interface ports and the at least one port of the second plurality of network interface ports is part of a virtual circuit between the customer network and another customer network.

25. The method of claim 14,

wherein the configuration data defines a connection between multiple ports of the first plurality of network interface ports and a port of the second plurality of network interface ports,

wherein to create the connection the configuration interface configures the switch to connect the multiple ports of the first plurality of network interface ports and the port of the second plurality of network interface ports, and

wherein multiple cables connected to the multiple ports of the first plurality of network interface ports include an aggregate pool of interconnection capacity through the communication facility coupled to the cable patch panel and available for uplink traffic sourced by a customer network connected to the port of the second plurality of network interface ports.

26. The method of claim 25, further comprising:

pre-provisioning interconnect capacity in the communication facility in part by connecting, by the communication facility provider, the multiple cables to the multiple ports of the first plurality of network interface ports.