CLAIMS

1. A data center power system, comprising:

an enclosure that defines an inner volume;

a first direct current (DC) power bus mounted in the inner volume and extending externally from the enclosure to electrically couple to a source of main power;

a second DC power bus mounted in the inner volume and extending externally from the enclosure to electrically couple to the source of main power;

a plurality of transfer switches mounted in the inner volume, each transfer switch electrically coupled to one of the first DC power bus or the second DC power bus; and

a plurality of DC power conductors, each DC power conductor electrically coupled to a pair of transfer switches that comprises one transfer switch electrically coupled to the first DC power bus and one transfer switch electrically coupled to the second DC power bus; each DC power conductor configured to electrically couple to a data center rack that supports a plurality of electronic devices,

wherein the first and second DC power busses are configured such that one of the first or second DC power busses is electrically decoupled from the source of main power for maintenance performance on the one of the first or second DC power busses, and concurrently with maintenance performance, DC power is provided from the other of the first or second DC power busses to the DC power conductor through the respective first or second plurality of transfer switches.

2. The data center power system of claim 1, wherein at least a portion of the plurality of transfer switches comprises an automatic transfer switch.

3. The data center power system of claim 1, wherein at least a portion of the plurality of transfer switches comprises a fused contact.

4. The data center power system of claim 1, wherein the source of main power is electrically coupled, through a power converter, to the first and second DC power busses.

5. The data center power system of claim 4, wherein the source of main power comprises at least one of a utility grid power source or a backup power source.

6. The data center power system of claim 5, wherein the backup power source comprises at least one of a generator power source or a renewable power source.

7. The data center power system of claim 1, wherein the first DC power bus and the second DC power bus are isolated from each other in the enclosure.

8. A method of delivering direct current (DC) power to a data center rack, comprising:

providing DC power from a source of main power to a first DC power bus mounted in an inner volume of an enclosure;

providing DC power from the source of main power to a second DC power bus mounted in the inner volume of the enclosure;

feeding the DC power from the first DC power bus to a first plurality of transfer switches mounted in the inner volume;

feeding the DC power from the second DC power bus to a second plurality of transfer switches, that are exclusive of the first plurality of transfer switches, mounted in the inner volume;

supplying: (i) DC power from one of the first plurality of transfer switches, or (ii) DC power from one of the second plurality of transfer switches, to a DC power conductor that is electrically coupled to a data center rack that supports a plurality of electronic devices;

powering the plurality of electronic devices with the supplied DC power;

electrically decoupling one of the first or second DC power busses from the source of main power;

performing maintenance on the one of the first or second DC power busses; and

concurrently with performing maintenance, feeding the DC power from the other of the first or second DC power busses to the DC power conductor through the respective first or second plurality of transfer switches.

9. The method of claim 8, wherein each of the plurality of transfer switches comprises an automatic transfer switch.

10. The method of claim 8, wherein each of the plurality of transfer switches comprises a fused contact.

11. The method of claim 8, wherein the source of main power comprises alternating current (AC) power, the method further comprising inverting the AC power to the DC power prior to providing the DC power to the first DC power bus and the second DC power bus.

12. The method of claim 8, wherein the source of main power comprises at least one of a utility grid power source or a backup power source.

13. The method of claim 12, further comprising electrically coupling the first and second DC power busses, through a power converter, to both the utility grid power source and the backup power source.

14. The method of claim 13, further comprising

detecting a loss of main power from the utility power grid; and

based on the detected loss, switching from providing DC power to the first and second DC power busses from the utility power grid to providing DC power to the first and second DC power busses from the backup power source.

15. A data center power system, comprising:

a first direct current (DC) switchboard module, comprising:

an enclosure,

a first DC power bus mounted in the enclosure and extending externally from the enclosure to electrically couple to a source of main power,

a second DC power bus mounted in the enclosure and extending externally from the enclosure to electrically couple to the source of main power,

a plurality of transfer switches mounted in the enclosure, each transfer switch electrically coupled to one of the first DC power bus or the second DC power bus, and

a plurality of DC power conductors, each DC power conductor electrically coupled to a pair of transfer switches that comprises one transfer switch electrically coupled to the first DC power bus and one transfer switch electrically coupled to the second DC power bus; and

a first plurality of racks that comprise a plurality of electronic devices, each of at least a portion of the first plurality of racks electrically coupled to a particular DC power conductor of the first DC switchboard module,

wherein the first and second DC power busses are configured such that one of the first or second DC power busses is electrically decoupled from the source of main power for maintenance performance on the one of the first or second DC power busses, and concurrently with maintenance performance, DC power is provided from the other of the first or second DC power busses to the DC power conductor through the respective first or second plurality of transfer switches.

16. The data center power system of claim 15, further comprising:

a second DC switchboard module, comprising:

an enclosure;

a first DC power bus mounted in the enclosure and extending externally from the enclosure to electrically couple to a source of main power;

a second DC power bus mounted in the enclosure and extending externally from the enclosure to electrically couple to the source of main power;

a plurality of transfer switches mounted in the enclosure, each transfer switch electrically coupled to one of the first DC power bus or the second DC power bus; and

a plurality of DC power conductors, each DC power conductor electrically coupled to a pair of transfer switches that comprises one transfer switch electrically coupled to the first DC power bus and one transfer switch electrically coupled to the second DC power bus; and

a second plurality of racks that comprise a plurality of electronic devices, each of at least a portion of the second plurality of racks electrically coupled to a particular DC power conductor of the second DC switchboard module.

17. The data center power system of claim 16, wherein each of another portion of the second plurality of racks is electrically coupled to a particular DC power conductor of the first DC switchboard module, and each of another portion of the first plurality of racks is electrically coupled to a particular DC power conductor of the second DC switchboard module.

18. The data center power system of claim 17, wherein the portion of the second plurality of racks and the other portion of the second plurality of racks are positioned in separate rows of a plurality of rows of racks in the data center.

19. The data center power system of claim 17, wherein the portions of the first and second pluralities of racks are positioned in one particular row of the plurality of rows of racks.