CLAIMS:

~~What is claimed is:~~

1. A routing system comprising:

a plurality of fabric endpoints; and

a switching fabric comprising a fabric plane to switch cells among the fabric endpoints,

wherein the fabric plane includes two fabric cores and one or more inter-core links connecting the fabric cores, wherein the one or more inter-core links that facilitate routing cells between the fabric cores to balance cell traffic,

wherein each fabric core is configured to select an output port of the fabric core to which to route a received cell of the cells based on (i) an input port of the fabric core on which the received cell was received and (ii) a destination fabric endpoint for the received cell, at least a portion of the selected output ports being connected to the inter-core links, and switch the received cell to the selected output port.

2. The routing system of claim 1, wherein each fabric core includes a routing table that maps an input port to one more output ports to route the received cell based on (i) an input port of the fabric core on which the received cell was received and (ii) a destination fabric endpoint for the cell.

3. The routing system of claim 2, wherein at least a portion of the input ports are mapped to at least two output ports.

4. The routing system of claim 3, wherein for the portion of the input ports that are mapped to at least two of the output ports, the routing table specifies a spray ratio to use to select one of the at least two output ports.

5. The routing system of claim 4, wherein for the portion of the input ports that are mapped to at least two of the output ports, one of the at least two output ports is mapped to one of outputs associated with one of the inter-core links.

6. The routing system of claim 1, wherein a first portion of the plurality of fabric endpoints has a first number of links to each of the fabric cores and a second portion of the plurality of fabric endpoints has a second number of links to each of the fabric cores.

7. The routing system of claim 1, wherein two of the plurality of endpoints collectively have an odd number of connections to the fabric plane.

8. The routing system of claim 7, wherein the two endpoints share a link to each of the two fabric cores.

9. The routing system of claim 8, wherein one of the inter-core links is associated in a routing table to the shared link.

10. The routing system of claim 1, wherein when the input port is associated with one of the inter-core links, the cell is routed to one of the output ports associated with the destination endpoint.

11. A method of routing cells in a router with a plurality of endpoints and a switching fabric comprising a fabric plane to switch cells among the endpoints, wherein the switch fabric plane includes two fabric cores and one or more inter-core links connecting the fabric cores, and wherein the one or more inter-core links that facilitate routing cells between the fabric cores to balance cell traffic, the method comprising:

receiving cells at a plurality of input ports;

selecting, by a fabric core of the fabric cores, an output port of the fabric core to route a received cell of the cells based on (i) an input port of the fabric core on which the received cell was received and (ii) a destination fabric endpoint for the received cell, at least a portion of the selected output ports being connected to the inter-core links; and

switching, by the fabric core, the received cell to the selected output port.

12. The method of claim 11, wherein each fabric core includes a routing table that maps an input port to one more output ports to route the received cell based on (i) an input port of the

fabric core on which the received cell was received and (ii) a destination fabric endpoint for the cell, wherein selecting the output port of the fabric core includes selecting the one of the one more output ports based on the routing table.

13. The method of claim 12, wherein at least a portion of the input ports are mapped to at least two output ports.

14. The method of claim 13, wherein for the portion of the input ports that are mapped to at least two of the output ports, the routing table specifies a spray ratio to use to select one of the at least two output ports.

15. The system of claim 14, wherein for the portion of the input ports that are mapped to at least two of the output ports, one of the at least two output ports is mapped to one of output associated with one of the inter-core links, wherein selecting the one of the plurality of output ports includes selecting, for a portion of the cells, the one of the output ports associated with one of the inter-core links based on the spray ratio.

16. The method of claim 11, wherein a first portion of the plurality of fabric endpoints has a first number of links to each of the fabric cores and a second portion of the plurality of fabric endpoints has a second number of links to each of the fabric cores.

17. The method of claim 11, wherein two of the plurality of endpoints has collectively an odd number of connections to the fabric plane.

18. The method of claim 17, wherein the two endpoints share a link to each of the two fabric cores.

19. The method of claim 18, wherein one of the inter-core links is associated in a routing table to the shared link, wherein selecting the one of the plurality of output ports includes selecting one of the output ports associated with the one of the inter-core links for the cells received from one of the input ports associated with the shared link.

20. A network device comprising:

a plurality of line cards collectively having a plurality of fabric endpoints;

a fabric switch card coupled to the line cards and comprising a fabric plane to switch cells among the fabric endpoints,

wherein the fabric plane includes two fabric cores and one or more inter-core links connecting the fabric cores, wherein the one or more inter-core links that facilitate routing cells between the fabric cores to balance cell traffic,

wherein each fabric core is configured to select an output port of the fabric core to route a received cell of the cells based on (i) an input port of the fabric core on which the received cell was received and (ii) a destination fabric endpoint for the received cell, at least a portion of the selected output ports being connected to the inter-core links, and switch the received cell to the selected output port.