WHAT IS CLAIMED IS:

1. A computer-implemented method for blockchain-based routing managing a routing table utilizing a secure blockchain routing protocol performed by a blockchain routing node of an overlay network, comprising:

transmitting forwarding table request messages to a plurality of blockchain routing nodes;

receiving~~, by a blockchain routing node,~~ a plurality of single-node forwarding tables from the ~~a~~ plurality of blockchain routing nodes in accordance with an extended blockchain protocol, each of the node forwarding tables corresponding to a respective one of the plurality of blockchain routing nodes, the blockchain routing node participating with the plurality of blockchain routing nodes in an overlay network~~, and wherein each of the plurality of single-node forwarding tables comprises a plurality of optimal network routes~~;

determining~~, by the blockchain routing node, a~~ the routing table for the overlay network ~~based at least on part on the plurality of single-node~~ utilizing forwarding information received with the forwarding tables; ~~and~~

~~routing, by the blockchain routing node, a payload message to a destination blockchain routing node in the overlay network in accordance with the determined routing table~~

determining corresponding forwarding tables for any suitable combination of the blockchain routing node and the plurality of blockchain routing nodes by calculating a total cost associated with each available route associated with the received forwarding information to determine at least one optimal route between each of the blockchain routing nodes in the network utilizing the calculated costs;

distributing the determined forwarding tables to the plurality of blockchain routing nodes; and

maintaining the determined routing table and the determined forwarding tables in one or more blockchain ledgers by transmitting and/or receiving information to and/or from the blockchain routing node and plurality of blockchain routing nodes to collectively maintain the one or more blockchain ledgers.

2. The computer-implemented method of claim 1, further comprising:

executing, by the blockchain routing node, instructions to join the overlay network;

identifying, by the blockchain routing node, ~~a subset of~~ the plurality of blockchain routing nodes from a stored data record~~;~~

~~transmitting, by the blockchain routing node, a forwarding table request message to the subset of the plurality of blockchain routing nodes; and~~

~~receiving, by the blockchain routing node, forwarding table information from at least one of the subset of the plurality of blockchain routing nodes~~.

3. The method of claim 2, wherein the data record is stored in local memory of the blockchain routing node.

4. The computer-implemented method of claim 1~~2~~, further comprising consulting a locally stored forwarding table of the determined forwarding tables to determine a next hop address for a data message to be transmitted through the overlay network~~maintaining, by the blockchain routing node, a blockchain ledger comprising entries corresponding to the routing table~~.

5. The computer-implemented method of claim 14, further comprising transmitting, by the blockchain routing node, a distribution message to the plurality of blockchain routing nodes, the distribution message comprising the blockchain ledger, the distribution message being formatted according to the extended blockchain protocol.

6. The computer-implemented method of claim 1, further comprising wherein

calculating, by the blockchain routing node, the total cost associated with each available route associated with the received forwarding information to determine at least one an optimal network route comprises calculating for routing the payload message through the overlay network to the destination blockchain routing node, the optimal network route being the total cost based at least in part on performance data associated with respective blockchain routing nodes of the plurality of blockchain routing nodes.

7. The computer-implemented method of claim 6, wherein the performance data comprises at least a first attribute associated with a latency value and a second attribute corresponding to a cost value.

8. The computer-implemented method of claim 7, wherein the optimal network route total cost associated with each available route is calculated based at least in part by multiplying the latency value by the cost value.

9. The computer-implemented method of claim 1, wherein the extended blockchain protocol defines at least one routing procedure that is undefined in a blockchain protocol from which the extended blockchain protocol extends.

10. The computer-implemented method of claim 7, wherein transmitting the payload message according to the optimal network route causes a destination blockchain computing node of a different overlay network to process the payload message.

10~~11~~. A blockchain routing node configured to manage a routing table by utilizing a secure blockchain routing protocol comprising,

a processor, and

a computer readable medium coupled to the processor, the computer readable medium comprising code for causing the processor to~~:~~ perform a method according to any of the preceding claims ~~receive a plurality of single-node forwarding tables from a plurality of blockchain routing nodes in accordance with an extended blockchain protocol, the blockchain routing node participating with the plurality of blockchain routing nodes in an overlay network, and wherein each of the plurality of single-node forwarding tables comprises a plurality of optimal network routes;~~

~~determine a routing table for the overlay network based at least on part on the plurality of single-node forwarding tables; and~~

~~route a payload message to a destination blockchain routing node in the overlay network in accordance with the determined routing table~~.

~~12. The blockchain routing node of claim 11, wherein the computer readable medium comprises additional code for causing the processor to:~~

~~execute instructions to join the overlay network;~~

~~identify a subset of the plurality of blockchain routing nodes from a stored data record;~~

~~transmit a forwarding table request message to the subset of the plurality of blockchain routing nodes; and~~

~~receive forwarding table information from at least one of the subset of the plurality of blockchain routing nodes.~~

~~13. The blockchain routing node of claim 12, wherein the data record is stored in local memory of the blockchain routing node.~~

~~14. The blockchain routing node of claim 12, further comprising maintaining, by the blockchain routing node, a blockchain ledger comprising entries corresponding to the routing table.~~

~~15. The blockchain routing node of claim 14, wherein the computer readable medium comprises additional code for causing the processor to:~~

~~transmit a distribution message to the plurality of blockchain routing nodes, the distribution message comprising the blockchain ledger, the distribution message being formatted according to the extended blockchain protocol.~~

~~16. The blockchain routing node of claim 11, wherein the computer readable medium comprises additional code for causing the processor to:~~

~~calculate an optimal network route for routing the payload message through the overlay network to the destination blockchain routing node, the optimal network route being based at least in part on performance data associated with respective blockchain routing nodes of the plurality of blockchain routing nodes.~~

~~17. The blockchain routing node of claim 16, wherein the performance data comprises at least a first attribute associated with a latency value and a second attribute corresponding to a cost value.~~

~~18. The blockchain routing node of claim 17, wherein the optimal network route is calculated based at least in part by multiplying the latency value by the cost value.~~

~~19. The blockchain routing node of claim 11, wherein the extended blockchain protocol defines at least one routing procedure that is undefined in a blockchain protocol from which the extended blockchain protocol extends.~~

11~~20~~. A system, comprising:

an overlay network comprising a plurality of blockchain routing nodes, the plurality of blockchain routing nodes individually comprising:

a processor; and

a computer readable medium coupled to the processor, the computer readable medium comprising instructions that, when executed, cause the processor to: perform the method according to any of claims 1-9.

join the overlay network comprising the plurality of blockchain routing nodes;

receive a plurality of single-node forwarding tables from at least one of the plurality of blockchain routing nodes in accordance with an extended blockchain protocol;

determine a routing table for the overlay network based at least on part on the plurality of single-node forwarding tables, and wherein each of the plurality of single-node forwarding tables comprises a plurality of optimal network routes; and

route a payload message to a destination blockchain routing node in the overlay network in accordance with the determined routing table.