

CLAIMS

1. A method of configuring a network to handle multicast messages, the method comprising:
for each of a plurality of routing nodes of the network, determining if a respective routing node is
an ancestor node to a node that is a member of a particular multicast group;

5 based at least in part on a result of the determining,
creating a multicast forwarding configuration for of the respective routing node, the
multicast forwarding configuration for the respective routing node including:

an indication of the particular multicast group; and

10 an indication of a forwarding operation for the respective routing node to carry out
on multicast messages associated with the particular multicast group, received by the
respective routing node; and

causing a representation of the created multicast forwarding configuration to be provided
to the respective routing node.

15 2. The method of claim 1, wherein:
the forwarding operation is at least one of a group of unicast transmission or one hop multicast
transmission.

3. The method of claim 1, wherein:
20 the forwarding operation is at least one of a group of unicast transmission, one hop multicast
transmission, and no forwarding.

4. The method of claim 1, wherein:
the particular multicast group is a first particular multicast group, and
25 the method further comprising creating the multicast forwarding configuration and providing the
representation of the multicast forwarding configuration for a second particular multicast group.

5. The method of claim 1, further comprising:
determining a quantity of nodes in the network that are a member of the particular multicast group.

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6. The method of claim 5, further comprising:

based on the determined quantity, determining whether to perform the operations of determining whether the respective node is an ancestor node and creating a multicast forwarding configuration.

5 7. A computing device programmed to execute operations to configure a network to handle multicast messages, the operations comprising:

for each of a plurality of routing nodes of the network, determining if a respective routing node is an ancestor node to a node that is a member of a particular multicast group;

based at least in part on a result of the determining,

10 creating a multicast forwarding configuration for the respective routing node, the multicast forwarding configuration for the respective routing node including:

an indication of the particular multicast group; and

an indication of a forwarding operation for the respective routing node to carry out on multicast messages associated with the particular multicast group, received by the respective routing node; and

15 causing a representation of the created multicast forwarding configuration to be provided to the respective routing node.

8. The computing device of claim 7, wherein:

20 the forwarding operation is at least one of a group of unicast transmission and one hop multicast transmission.

9. The computing device of claim 7, wherein:

the forwarding operation is at least one of a group of unicast transmission, one hop multicast transmission, and no forwarding.

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10. The computing device of claim 7, wherein:

the particular multicast group is a first particular multicast group, and

the operations further comprising creating the multicast forwarding configuration and providing the representation of the multicast forwarding configuration for a second particular multicast group.

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11. The computing device of claim 7, the operations further comprising:

determining a quantity of nodes in the network that are a member of the particular multicast group.

12. The computing device of claim 11, the operations further comprising:
based on the determined quantity, determining whether to perform the operations of determining
5 whether the respective node is an ancestor node and creating a multicast forwarding configuration.

13. A method of operating a network, comprising:
receiving, via a radio of a routing node, a multicast message addressed to a particular multicast
group; and
10 forwarding, via the radio of the routing node, the multicast message in accordance with a
forwarding configuration stored at the routing node, the forwarding configuration indicating the particular
multicast group and a forwarding operation, associated with the indication of the particular multicast
group, for the routing node to carry out on multicast messages received by the routing node addressed to
the particular multicast group.

15 14. The method of claim 13, further comprising:
receiving, via the radio of the routing node, the forwarding configuration; and
storing the forwarding configuration in a memory of the routing node.

20 15. The method of claim 13, wherein the forwarding operation is at least one of a group of
unicast transmission and one hop multicast transmission.

16. The method of claim 13, wherein:
the particular multicast group is a first particular multicast group and there is no forwarding
25 configuration stored at the routing node for a second particular multicast group; and
the method further comprises:
receiving, via the radio of the routing node, a multicast message addressed to the second
particular multicast group; and
forwarding, via the radio of the routing node, the multicast message addressed to the second
30 particular multicast group according to a default forwarding operation of the routing node.

17. The method of claim 16, wherein the default forwarding operation is forwarding by one hop multicast transmission.

18. The method of claim 13, wherein:
5 the particular multicast group is a first particular multicast group, and
the method further comprises:

receiving, via a radio of a routing node, a message addressed to a second particular multicast group; and

10 forwarding, via the radio of the routing node, the multicast message addressed to the second particular multicast group, in accordance with the forwarding configuration stored at the routing node, the forwarding configuration indicating the second particular multicast group and a forwarding operation, associated with the indication of the second particular multicast group, for the routing node to carry out on messages received by the routing node addressed to the second particular multicast group.

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19. The method of claim 18, wherein the forwarding operation associated with the indication of the second particular multicast group is the same as the forwarding operation associated with the indication of the first particular multicast group.

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20. The method of claim 18, wherein the forwarding operation associated with the indication of the second particular multicast group is different from the forwarding operation associated with the indication of the first particular multicast group.