

CLAIMS

1. A method of transmitting packets containing digital data through a cloud, the cloud comprising a network of media nodes, said media nodes being hosted on servers, each of the media nodes receiving packets from other media nodes in the cloud and transmitting packets to other media nodes in the cloud, each of the packets comprising a plurality of data segments, the method comprising:

scrambling a packet by changing an order of the data segments in the packet in a first media node in accordance with a first scrambling algorithm;

transmitting the packet to a second media node;

unscrambling the packet in the second media node so as to recreate the order of the data segments in said packet prior to said scrambling in said first media node;

after said unscrambling in said second media node, scrambling the packet in said second media node in accordance with a second scrambling algorithm; and

transmitting said packet to a third media node, said second scrambling algorithm being different from said first scrambling algorithm such that the order of the data segments in the packet when the packet arrives at the third media node is different from the order of the data segments in the packet when the packet arrived at the second media node.

2. The method of Claim 1 wherein said cloud comprises a plurality of gateway media nodes, each of said gateway media nodes being a media node connected to a client device via a last mile connection, and wherein at least one of said first and second media nodes is not a gateway media node.

3. The method of Claim 2 wherein said first scrambling algorithm is determined by a value of a state.

4. The method of Claim 3 wherein said value of said state is determined by a time at which said packet is scrambled in said first media node.

5. The method of Claim 3 wherein said value of said state is determined by a zone in which said first media node is located.

6. The method of Claim 3 wherein a first DMZ server is associated with said first media node and a second DMZ server is associated with said second media node, each of said first and second DMZ servers being isolated such that neither of said first and second media

nodes is able to access files stored on either of said first and second DMZ servers, the method further comprising transmitting data representing a first value of said state from said first media node to said second DMZ server.

7. The method of Claim 6 further comprising providing said second DMZ server with a selector, said selector containing a list of scrambling algorithms stored in a computer memory.

8. The method of Claim 7 wherein said second DMZ server uses said data representing said first value of said state to select said first scrambling algorithm from said list of scrambling algorithms in said selector .

9. The method of Claim 8 further comprising transmitting said first scrambling algorithm selected by said second DMZ server to said second media node, said second media node using said first scrambling algorithm to unscramble said packet.

10. The method of claim 7 wherein said data representing said value of said state comprises a seed, said seed containing a disguised representation of said value of said state.

11. The method of claim 7 wherein said second DMZ server comprises a hidden number generator, said hidden number generator using a hidden number algorithm to calculate a hidden number from said data representing said value of said state, said hidden number being used to select said first scrambling algorithm in said selector in said second DMZ server.

12. The method of claim 7 wherein said first DMZ server uses said first value of said state to select said first scrambling algorithm from a selector within said first DMZ server and transmits said first scrambling algorithm to first media node, thereby enabling said first media node to scramble said packet.

13. The method of claim 7 wherein said second DMZ server uses a second value of said state to select said second scrambling algorithm from said list of scrambling algorithms in said selector in said second DMZ server and transmits said second scrambling algorithm to said second media node, thereby enabling said second media node to scramble said packet.

14. A method of transmitting a packet containing digital data across a network, the network comprising:

a plurality of media nodes, the media nodes being hosted on respective servers, each of the media nodes receiving packets from other media nodes in the network and transmitting packets to other media nodes in the network, each of the packets comprising a plurality of data

segments, said packet passing through a first media node, a second media node, and one or more intermediate media nodes between said first media node and said second media node;

the method comprising:

scrambling said packet in said first media node;

rescrambling said packet in at least some of said intermediate nodes, said rescrambling comprising unscrambling and then scrambling said packet; and

unscrambling said packet in said second media node after said packet has been received by said second media node, wherein a scrambling algorithm used to scramble said packet in each of said media nodes in which said packet is scrambled is different from a scrambling algorithm used to scramble said packet in every other media node in which said packet is scrambled.

15. The method of claim 14 comprising rescrambling said packet in each of said intermediate media nodes.

16. The method of claim 14 wherein a scrambling algorithm used to scramble said packet in each of said media nodes in which said packet is scrambled is determined by a time at which said scrambling occurs.

17. A method of transmitting packets containing digital data through a cloud, the cloud comprising a network of media nodes, said media nodes comprising a plurality of gateway media nodes, each of said gateway media nodes being connected to a client device via a last mile connection, said media nodes being hosted on servers, each of the media nodes receiving packets from other media nodes in the cloud and transmitting packets to other media nodes in the cloud, each of the packets comprising a plurality of data segments, the method comprising:

encrypting data in a packet in a first media node in accordance with a first encryption method, said first encryption method being determined by a value of a state;

transmitting the packet to a second media node; and

after the packet has been received by the second media node, decrypting the encrypted data in the packet in the second media node so as to recreate said packet prior to said encrypting in said first media node, wherein at least one of said first and second media nodes is not a gateway media node.

18. The method of claim 17 further comprising, after said decrypting in said second media node, encrypting data in the packet in said second media node.

19. The method of claim 17 wherein encrypting data in a packet in a first media node in accordance with a first encryption method comprises using an encryption algorithm and an encryption key.

20. The method of claim 18 wherein said encrypting in said first media node is performed in accordance with a first encryption method and said encrypting in said second media node is performed in accordance with a second encryption method, said second encryption method being different from said first encryption method.

21. The method of claim 20 wherein said value of said state is determined by a time at which said packet is encrypted in said first media node.

22. The method of claim 20 wherein said value of said state is determined by a zone in which said first media node is located.

23. The method of claim 20 wherein a first DMZ server is associated with said first media node and a second DMZ server is associated with said second media node, each of said first and second DMZ servers being isolated such that neither of said first and second media nodes is able to access files stored on either of said first and second DMZ servers, the method further comprising transmitting data representing a first value of said state from said first media node to said second DMZ server.

24. The method of claim 23 further comprising providing said second DMZ server with a selector, said selector containing a list of encryption methods stored in a computer memory.

25. The method of claim 24 wherein said second DMZ server uses said data representing said first value of said state to select said first encryption method from said list of encryption methods in said selector.

26. The method of claim 25 further comprising transmitting said first encryption method selected by said second DMZ server to said second media node, said second media node using said first encryption method to decrypt said encrypted data in said packet.

27. The method of claim 24 wherein said data representing said value of said state comprises a seed, said seed containing a disguised representation of said value of said state.

28. The method of claim 24 wherein said second DMZ server comprises a hidden number generator, said hidden number generator using a hidden number algorithm to calculate a

hidden number from said data representing said value of said state, said hidden number being used to select said first encryption method in said selector in said second DMZ server.

29. The method of claim 24 wherein said first DMZ server uses said first value of said state to select said first encryption method from a selector within said first DMZ server and transmits said first encryption method to first media node, thereby enabling said first media node to encrypt data in said packet.

30. The method of claim 24 wherein said second DMZ server uses a second value of said state to select said second encryption method from said list of encryption methods in said selector in said second DMZ server and transmits said second encryption method to said second media node, thereby enabling said second media node to encrypt said packet using said second encryption method.

31. A method of transmitting a packet containing digital data across a network of media nodes, the media nodes being hosted on respective servers, each of the media nodes receiving packets from other media nodes in the network and transmitting packets to other media nodes in the network, each of the packets comprising a plurality of data segments, said packet passing through a first media node, a second media node, and one or more intermediate media nodes between said first media node and said second media node, the method comprising:

encrypting data in said packet in said first media node;

re-encrypting said packet in at least some of said intermediate media nodes, said re-encrypting comprising decrypting data in said packet and then encrypting data in said packet; and

decrypting data in said packet in said second media node, wherein an encryption method used to encrypt data in said packet in each of said media nodes in which data in said packet is encrypted is different from an encryption method used in encrypting data in said packet in every other media node in which data in said packet is encrypted.

32. The method of claim 31 comprising re-encrypting said packet in each of said intermediate media nodes.

33. The method of claim 31 wherein an encryption method used to encrypt data in said packet in each of said media nodes in which data in said packet is encrypted is determined by a time at which said encryption occurs.

34. The method of claim 31 wherein an encryption method used to encrypt data in said packet in each of said media nodes in which data in said packet is encrypted comprises using an encryption algorithm and an encryption key.