**Claims**

1. A method comprising, by a client device:

identifying one or more target transactions, recorded on a blockchain, that contain operating system software stored in a payload of the one or more target transactions, the operating system software comprising at least part of an operating system, at least including some executable code of the operating system;

accessing the operating system software from the payload of the one or more target transactions as stored on the blockchain; and

running, on the client device, the operating system software as accessed from the one or more target transactions, said running comprising executing the executable code of the operating system.

~~2. The method of claim 1, wherein said operating system software is the whole of the operating system.~~

~~3~~2. The method of claim 1~~ or 2~~, wherein said running comprises running said operating system software live from the blockchain by streaming it via RAM of the client device without installing on the client device.

~~4. The method of claim 1 or 2, wherein said running comprises installing a copy of the operating system software on the client device and running the installed copy.~~

~~5~~3. The method of any preceding claim, wherein the accessing and running of said operating system software are performed upon booting the client device.

~~6~~4. The method of any preceding claim, further comprising, by the client device: sending to be published on the blockchain an acknowledgement that the client device has accessed the operating system software.

~~7~~5. The method of any preceding claim, further comprising, by the client device: sending to be published on the blockchain an acknowledgement that the client device has run the operating system software.

~~8. The method of any preceding claim, wherein said one or more target transactions are a plurality of target transactions.~~

~~9~~6. The method of any preceding claim, wherein a tree structure is overlaid on the blockchain, the tree structure comprising a plurality of nodes and edges between nodes, wherein each node is a different transaction recorded on the blockchain, and each edge connects from a respective child node to a respective parent node, the edges being formed by each child node specifying a transaction ID of its respective parent node in a payload of the respective child node, and wherein one of the parent nodes is a root node of the tree structure; and

wherein the one or more target transactions storing said operating system software are child nodes of said tree structure.

~~10~~7. The method of claim ~~9~~6, wherein the tree structure comprises a Metanet tree.

~~11~~8. The method of claim ~~9~~6 or ~~10~~7, wherein said operating system software comprise a plurality of files in different folders arranged in a hierarchical file-and-folder structure, wherein each of the target transactions stores at least a respective one of the files and one or more parent nodes of the target transactions are tagged so as to represent folders, such that at least part of the tree structure of the nodes follows at least part of the file-and-folder structure of the operating system software.

~~12~~9. The method of any of claims ~~9~~6 to ~~11~~7, wherein said identifying comprises, based on the transaction ID of the root node, following paths of the edges from the root node down the tree structure to find leaf nodes, the leaf nodes being child nodes that are not parent nodes of other child nodes, wherein each of the one or more target transactions is a leaf node.

~~13~~10. The method of claim ~~12~~9, wherein the client device checks that each of the target transactions, and any intermediate parent node on a path between a target transaction and

the root node, meets one or more rules of a tree protocol associated with the tree structure; wherein said execution is conditional on the meeting of said one or more rules.

~~14~~11. The method of claim ~~13~~10, wherein the set of rules comprises at least: for each child along a path from root node to target transaction, the child is signed by key of the respective parent node.

~~15~~12. The method of claim ~~13~~10 or ~~14~~11, wherein the one or more rules comprise: that only leaf nodes can form a valid part of the operating system.

~~16~~13. The method of ~~any of~~ claim ~~15~~12, further comprising, by the client device: at a subsequent time following said execution, checking for any new leaf node that has been subsequently appended to a respective one of the target transactions, such that the respective target transaction is no longer a leaf; wherein the new leaf nodes represent updates or deletion of the respective target transaction.

~~17~~14. The method of claim ~~16~~13, wherein one of the respective target transactions comprises an update, the method further comprises the client device running the update.

~~18~~15. The method of any preceding claim, further comprising, by the client device:

identifying a further transaction on the blockchain, containing a remote command or script recorded in a payload of the further transaction by a remote administrator system remote from the client device; and

carrying out the command or script as accessed from the further transaction.

~~19~~16. The method of claim ~~18~~15, further comprising, by the client device~~:~~, sending to be published on the blockchain one or both of:

an acknowledgement that the client device has accessed the command or script~~.~~, or

~~20. The method of claim 18 or 19, further comprising, by the client device: sending to be published on the blockchain~~ an acknowledgement that the client device has carried out the command or script.

~~21. The method of any preceding claim, wherein the device is an Internet-of-things, IoT, device.~~

~~22~~17. The method of any preceding claim, wherein the client device is connected with one or more other devices in a network, and shares the operating system software with at least one of the other devices via said network.

~~23~~18. The method of claim ~~22~~17, wherein the network is a mesh network.

~~24. The method of claim 22 or 23, wherein the network is a wireless local area network.~~

~~25~~19. The method of claim ~~22, 23~~17 or ~~24~~18, wherein not all of the other devices have access to the blockchain.

~~26. The method of any preceding claim, wherein the blockchain employs an output-based model, each transaction comprises at least one respective input and a respective one or more outputs, and wherein the payload of each transaction is contained in one or more of the respective outputs.~~

~~27~~20. A client device comprising:

processing apparatus comprising one or more processing units, and

memory comprising one or more memory units;

wherein the memory stores code arranged to run on the processing apparatus, the code being configured so as when run on the processing apparatus to perform operations in accordance with any preceding claim.

~~28~~21. A computer program embodied on computer-readable storage, the computer program comprising code configured so as when run on a client device to perform operations in accordance with any of claims 1 to ~~26~~19.

~~29. A method comprising, by computer equipment of a producer of an operating system:~~

~~transmitting operating system software to be published in a payload of a transaction on a blockchain, the operating system software comprising at least part of the operating system, at least including some executable code of the operating system.~~

~~30~~22. A method of updating a tree structure overlaid on the blockchain, the tree structure comprising a plurality of nodes and edges between nodes, wherein each node is a different transaction recorded on the blockchain, and each edge connects from a respective child node to a respective parent node, the edges being formed by each child node specifying a transaction ID of its respective parent node in a payload of the respective child node, and wherein the tree structure comprises one of the parent nodes as a root node of the tree structure, and a plurality leaf nodes being child nodes that are not parent nodes of other child nodes;

wherein one or more of the leaf nodes store operating system software in a payload of the one or more leaf nodes, the operating system software comprising at least part of the operating system, at least including some executable code of the operating system; and

wherein the tree structure is governed by a protocol whereby only leaf nodes are deemed to form valid parts of the operating system;

the method comprising, by an administrator system:

appending a new leaf node to a respective one of the one or more leaf nodes, such that the respective target transaction is no longer a leaf, wherein the new leaf node represents an update or deletion of the respective target transaction.

~~31~~23. An administrator system comprising:

processing apparatus comprising one or more processing units, and

memory comprising one or more memory units;

wherein the memory stores code arranged to run on the processing apparatus, the code being configured so as when run on the processing apparatus to perform the method of claim ~~30~~22.

~~32~~24. A computer program embodied on computer-readable storage, the computer program comprising code configured so as when run on an administrator system, to perform the method of claim ~~30~~22.