

What Is Claimed Is:

1. A computer-implemented method for automatic blockchain deployment, the method comprising:

causing a virtual computing environment to be created at a computer, the computer connecting to a cloud platform;

generating an initial block of a blockchain and transmitting the initial block of the blockchain to the cloud platform;

causing the blockchain to be initialized at the virtual computing environment; and

after initialization of the blockchain is completed, monitoring the blockchain based on the cloud platform.

2. The method of claim 1, wherein causing the blockchain to be initialized at the virtual computing environment comprises:

in response to completed transmission of the initial block, sending a message indicative of the completed transmission to a message queue of the cloud platform, the message to be received by the virtual computing environment for initializing the blockchain.

3. The method of claim 2, wherein causing the blockchain to be initialized at the virtual computing environment comprises:

causing the virtual computing environment to receive the initial block from a storage of the cloud platform and start a blockchain application using the initial block, based on the message indicative of the completed transmission of the initial block from the message queue.

4. The method of claim 3, further comprising:
causing the virtual computing environment to delete at least one file or program process not associated with the blockchain.
5. The method of any of claims 2-4, further comprising:
determining whether the sending the message to the message queue is completed;
if it is determined that the sending the message to the message queue is completed, causing the blockchain to be initialized at the virtual computing environment; and
if it is determined that the sending the message to the message queue is not completed, resending the message to the message queue after a predetermined period of time.
6. The method of claim 1, wherein causing the blockchain to be initialized at the virtual computing environment comprises:
determining whether the transmitting of the initial block is completed;
if it is determined that the transmitting of the initial block is completed, causing the blockchain to be initialized at the virtual computing environment; and
if it is determined that the transmitting of the initial block is not completed, retransmitting the initial block to the cloud platform after a predetermined period of time.
7. The method of any preceding claim, further comprising:
causing a pair of a public key and a private key to be generated, the pair representing an identity of the virtual computing environment; and

in response to receiving one of the public key or the private key, generating the initial block.

8. The method of claim 7, wherein causing the pair of the public key and the private key to be generated comprises:

 sending a request to a security service to cause the security service to generate the pair of the public key and the private key.

9. The method of claim 7, wherein causing the pair of the public key and the private key to be generated comprises:

 sending a request to the virtual computing environment to cause the virtual computing environment to generate the pair of the public key and the private key.

10. The method of claim 7, further comprising:

 causing the public key to be stored at multiple virtual computing environments; and

 generating respective weights associated with the multiple virtual computing environments.

11. The method of any preceding claim, wherein causing the virtual computing environment to be created at the computer comprises:

 receiving a network address of the computer, the computer connecting to a set of computers in the cloud platform; and

causing the cloud platform to create, based on the network address, the virtual computing environment at the computer.

12. The method of claim 11, wherein the network address of the computer includes an Internet Protocol (IP) address, and the IP address is different from IP addresses of the set of computers.

13. The method of any preceding claim, wherein the computer includes a computer in the cloud platform.

14. The method of any of claims 1-12, wherein the computer includes a computer not in any cloud platform, or a computer in an external cloud platform, wherein the external cloud platform includes a public cloud platform, a private cloud platform, and a hybrid cloud platform.

15. The method of any preceding claim, wherein monitoring the blockchain based on the cloud platform comprises:

monitoring a status of the blockchain, wherein the status includes at least one of a synchronization status of blocks of the blockchain or a height of the blocks in the virtual computing environment;

extracting information associated with the blocks from the blockchain; and

generating a browser for browsing at least one of the status of the blockchain or the information associated with the blocks.

16. The method of any preceding claim, wherein causing the virtual computing environment to be created at the computer comprises:

applying a distributed lock to shared resources of the computer;

causing the virtual computing environment to be created using the shared resources of the computer; and

releasing the distributed lock.

17. The method of any preceding claim, wherein the virtual computing environment includes a processor core of a physical machine, a portion of a memory of the physical machine, and a network interface.

18. The method of any preceding claim, wherein the initial block includes at least one of a network address of the virtual computing environment, a port number of the virtual computing environment, an identity of the virtual computing environment, or an initial smart contract.

19. The method of claim 10, wherein generating the initial block comprises:

receiving, from ones of the multiple virtual computing environments, public keys each corresponding to the public key of the virtual computing environment;

determining a sum of weights associated with the ones of the multiple virtual computing environments; and

based on a determination that the sum is greater than or equal to a threshold value, storing the received public keys and the weights in the initial block.

20. The method of any one of claims 18-19, wherein the initial smart contract includes at least one of a configuration smart contract for configuring blocks in the blockchain or a node smart contract for setting node configurations in the blockchain.
21. A device for automatic blockchain deployment, the device comprising:
one or more processors; and
one or more computer-readable memories coupled to the one or more processors and having instructions stored thereon that are executable by the one or more processors to perform the method of any of claims 1 to 20.
22. An apparatus for automatic blockchain deployment, the apparatus comprising a plurality of modules for performing the method of any of claims 1 to 20.
23. A non-transitory computer-readable medium having stored therein instructions that, when executed by a processor of a device, cause the device to perform the method of any of claims 1 to 20.