

CLAIMS

What is claimed is:

1. A computer-implemented method, comprising:

receiving, from a client device and by one or more processors of a node in a
5 blockchain network in which (a) each node comprises a blockchain virtual machine (i)
that does not support XML processing operations by default, (ii) whose instruction set
is expanded to include an XML processing instruction to enable support of the XML
processing operations in the blockchain virtual machine, and (iii) in which XML
processing logic corresponding to the XML processing instruction is deployed, and (b)
10 a service smart contract comprising the XML processing instruction is deployed, a
service initiation transaction that is broadcasted by the client device to nodes in the
blockchain network;

wherein the service smart contract is compiled by a smart contract compiler
whose instruction set is expanded to include the XML processing instruction, such
15 that the compiled service smart contract comprises the XML processing instruction;

invoking, by the one or more processors of the node in the blockchain
network using the blockchain virtual machine, the service smart contract; and

triggering, by the one or more processors of the node in the blockchain
network using the blockchain virtual machine, execution of the XML processing
20 logic based on the XML processing instruction in the service smart contract to
perform the XML processing operations on data to be processed.

2. The computer-implemented method according to claim 1, wherein the service
initiation transaction comprises the data to be processed; or

the service smart contract comprises the data to be processed; or
25 the data to be processed is generated when the service initiation transaction is
executed.

3. The computer-implemented method according to claim 1, wherein the service
smart contract compiled by the smart contract compiler comprises a contract identifier
of an XML processing smart contract, and the XML processing smart contract is a smart
30 contract pre-deployed in the blockchain network.

4. The computer-implemented method according to claim 3, further comprising:
invoking, using the blockchain virtual machine, the service smart contract;

invoking, using the blockchain virtual machine, the XML processing smart contract based on the contract identifier of the XML processing smart contract in the service smart contract; and

triggering, using the blockchain virtual machine, execution of the XML processing logic based on the XML processing instruction in the XML processing smart contract to perform the XML processing operations on the data to be processed.

5 5. The computer-implemented method according to claim 1, wherein the instruction set of the blockchain virtual machine further comprises at least one Ethereum instruction, and the Ethereum instruction is an instruction in an instruction set of an Ethereum virtual machine; and

logic corresponding to each Ethereum instruction comprised in the instruction set of the blockchain virtual machine is deployed in the blockchain virtual machine.

6. The computer-implemented method according to claim 1, wherein the smart contract compiler is configured to compile a smart contract written in a programming language into a machine language.

7. The computer-implemented method according to claim 1, wherein the service smart contract compiled by the smart contract compiler is in a form of bytecode or binary code.

8. A non-transitory, computer-readable medium storing one or more instructions executable by a computer system to perform operations comprising:

receiving, from a client device and by one or more processors of a node in a blockchain network in which (a) each node comprises a blockchain virtual machine (i) that does not support XML processing operations by default, (ii) whose instruction set is expanded to include an XML processing instruction to enable support of the XML processing operations in the blockchain virtual machine, and (iii) in which XML processing logic corresponding to the XML processing instruction is deployed, and (b) a service smart contract comprising the XML processing instruction is deployed, a service initiation transaction that is broadcasted by the client device to nodes in the blockchain network,

30 wherein the service smart contract is compiled by a smart contract compiler whose instruction set is expanded to include the XML processing instruction, such that the compiled service smart contract comprises the XML processing instruction;

invoking, by the one or more processors of the node in the blockchain network using the blockchain virtual machine, the service smart contract; and

triggering, by the one or more processors of the node in the blockchain network using the blockchain virtual machine, execution of the XML processing logic based on the XML processing instruction in the service smart contract to perform the XML processing operations on data to be processed.

5 9. The non-transitory, computer-readable medium of claim 8, wherein the service initiation transaction comprises the data to be processed; or

the service smart contract comprises the data to be processed; or

the data to be processed is generated when the service initiation transaction is executed.

10 10. The non-transitory, computer-readable medium of claim 8, wherein the service smart contract compiled by the smart contract compiler comprises a contract identifier of an XML processing smart contract, and the XML processing smart contract is a smart contract pre-deployed in the blockchain network.

15 11. The non-transitory, computer-readable medium of claim 10, wherein the operations further comprise:

invoking, using the blockchain virtual machine, the service smart contract;

invoking, using the blockchain virtual machine, the XML processing smart contract based on the contract identifier of the XML processing smart contract in the service smart contract; and

20 triggering, using the blockchain virtual machine, execution of the XML processing logic based on the XML processing instruction in the XML processing smart contract to perform the XML processing operations on the data to be processed.

25 12. The non-transitory, computer-readable medium of claim 8, wherein the instruction set of the blockchain virtual machine further comprises at least one Ethereum instruction, and the Ethereum instruction is an instruction in an instruction set of an Ethereum virtual machine; and

logic corresponding to each Ethereum instruction comprised in the instruction set of the blockchain virtual machine is deployed in the blockchain virtual machine.

30 13. The non-transitory, computer-readable medium of claim 8, wherein the smart contract compiler is configured to compile a smart contract written in a programming language into a machine language.

14. The non-transitory, computer-readable medium of claim 8, wherein the service smart contract compiled by the smart contract compiler is in a form of bytecode or binary code.

15. A computer-implemented system, comprising:

one or more computers; and

one or more computer memory devices interoperably coupled with the one or more computers and having tangible, non-transitory, machine-readable media storing one or more instructions that, when executed by the one or more computers, perform one or more operations comprising:

receiving, from a client device and by one or more processors of a node in a blockchain network in which (a) each node comprises a blockchain virtual machine (i) that does not support XML processing operations by default, (ii) whose
5 instruction set is expanded to include an XML processing instruction to enable support of the XML processing operations in the blockchain virtual machine, and (iii) in which XML processing logic corresponding to the XML processing instruction is deployed, and (b) a service smart contract comprising the XML processing instruction is deployed, a service initiation transaction that is
10 broadcasted by the client device to nodes in the blockchain network,

wherein the service smart contract is compiled by a smart contract compiler whose instruction set is expanded to include the XML processing instruction, such that the compiled service smart contract comprises the XML processing instruction;

15 invoking, by the one or more processors of the node in the blockchain network using the blockchain virtual machine, the service smart contract; and

triggering, by the one or more processors of the node in the blockchain network using the blockchain virtual machine, execution of the XML processing logic based on the XML processing instruction in the service smart contract to
20 perform the XML processing operations on data to be processed.

16. The computer-implemented system of claim 15, wherein the service initiation transaction comprises the data to be processed; or

the service smart contract comprises the data to be processed; or

25 the data to be processed is generated when the service initiation transaction is executed.

17. The computer-implemented system of claim 15, wherein the service smart contract compiled by the smart contract compiler comprises a contract identifier of an XML processing smart contract, and the XML processing smart contract is a smart contract pre-deployed in the blockchain network.

18. The computer-implemented system of claim 17, wherein the one or more operations further comprise:

invoking, using the blockchain virtual machine, the service smart contract;

invoking, using the blockchain virtual machine, the XML processing smart contract based on the contract identifier of the XML processing smart contract in the service smart contract; and

triggering, using the blockchain virtual machine, execution of the XML processing logic based on the XML processing instruction in the XML processing smart contract to perform the XML processing operations on the data to be processed.

19. The computer-implemented system of claim 15, wherein the instruction set of the blockchain virtual machine further comprises at least one Ethereum instruction, and the Ethereum instruction is an instruction in an instruction set of an Ethereum virtual machine; and

logic corresponding to each Ethereum instruction comprised in the instruction set of the blockchain virtual machine is deployed in the blockchain virtual machine.

20. The computer-implemented system of claim 15, wherein the smart contract compiler is configured to compile a smart contract written in a programming language into a machine language.