

WHAT IS CLAIMED IS:

1. A computer-implemented method for providing a functions-as-a-service (FaaS) platform within a blockchain network, the method being executed by one or more processors, and comprising:

receiving, from a smart contract, and by a first function application containing a first function controller executing within the blockchain network, a first function call to execute a first function, the first function call comprising data for execution of the first function,

wherein the first function is implemented by code in the first function application,

wherein the first function application contains multiple versions of the first function and the first function controller routes the first function call to an appropriate version of the first function, and

wherein the first function application is stored in the blockchain network, the first function controller has a unique address within the blockchain network, and the versions of the first function each have a respective unique address within the blockchain network;

transmitting, by the first function controller, the data of the first function call to a first function component, the first function component executing the first function based on the data of the first function call;

receiving, by the first function controller, a first function result from the first function component; and

providing, by the first function controller, the first function result to the smart contract.

2. The method of claim 1, wherein the first function call further comprises an address of the first function and a version identifier of the first function.

3. The method of claim 2, wherein the version identifier is null indicating that a latest version of the first function is to be executed.

4. The method of claim 1, further comprising updating, by the first function controller, statistics associated with a version of the first function that was executed in response to the first function call.

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5. The method of claim 4, wherein the statistics indicate a number of times each version of a first function has been executed.

6. The method of claim 1, further comprising:

10 receiving, from a smart contract, and by a second function controller executing within the blockchain network, a second function call to execute a second function, the second function call comprising data for execution of the second function, wherein the second function is different from the first function, and wherein the second function controller is different from the first function controller;

15 transmitting, by the second function controller, the data of the second function call to a second function component, the second function component executing the second function based on the data of the second function call, wherein the second function component is different from the first function component;

20 receiving, by the second function controller, a second function result from the second function component; and

providing, by the second function controller, the second function result to the smart contract.

25 7. The method of claim 6, wherein the first function and the second function are provided by different providers.

8. The method of claim 1, wherein the smart contract executes a transaction at least partially based on the function results, the transaction being recorded within a blockchain of the blockchain network.

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9. One or more computer-readable storage media encoded with instructions that, when executed by one or more computers, cause the one or more computers to perform operations for providing a functions-as-a-service (FaaS) platform within a blockchain network, the operations comprising:

5 receiving, from a smart contract, and by a first function application containing a first function controller executing within the blockchain network, a first function call to execute a first function, the first function call comprising data for execution of the first function,

10 wherein the first function is implemented by code in the first function application,

wherein the first function application contains multiple versions of the first function and the first function controller routes the first function call to an appropriate version of the first function, and

15 wherein the first function application is stored in the blockchain network, the first function controller has a unique address within the blockchain network, and the versions of the first function each have a respective unique address within the blockchain network;

20 transmitting, by the first function controller, the data of the first function call to a first function component, the first function component executing the first function based on the data of the first function call;

receiving, by the first function controller, a first function result from the first function component; and

25 providing, by the first function controller, the first function result to the smart contract.

10. The computer-readable storage media of claim 9, wherein the first function call further comprises an address of the first function and a version identifier of the first function.

30 11. The computer-readable storage media of claim 10, wherein the version identifier is null indicating that a latest version of the first function is to be executed.

12. The computer-readable storage media of claim 9, wherein operations further comprise updating, by the first function controller, statistics associated with a version of the first function that was executed in response to the first function call.

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13. The computer-readable storage media of claim 12, wherein the statistics indicate a number of times each version of a first function has been executed.

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14. The computer-readable storage media of claim 9, wherein operations further comprise:

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receiving, from a smart contract, and by a second function controller executing within the blockchain network, a second function call to execute a second function, the second function call comprising data for execution of the second function, wherein the second function is different from the first function, and wherein the second function controller is different from the first function controller;

transmitting, by the second function controller, the data of the second function call to a second function component, the second function component executing the second function based on the data of the second function call, wherein the second function component is different from the first function component;

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receiving, by the second function controller, a second function result from the second function component; and

providing, by the second function controller, the second function result to the smart contract.

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15. The computer-readable storage media of claim 14, wherein the first function and the second function are provided by different providers.

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16. The computer-readable storage media of claim 9, wherein the smart contract executes a transaction at least partially based on the function results, the transaction being recorded within a blockchain of the blockchain network.

17. A system, comprising:

one or more computers; and

one or more computer-readable memories coupled to the one or more computers and configured with instructions executable by the one or more computers to perform operations for providing a functions-as-a-service (FaaS) platform within a blockchain network, the operations comprising:

receiving, from a smart contract, and by a first function application containing a first function controller executing within the blockchain network, a first function call to execute a first function, the first function call comprising data for execution of the first function,

wherein the first function is implemented by code in the first function application,

wherein the first function application contains multiple versions of the first function and the first function controller routes the first function call to an appropriate version of the first function, and

wherein the first function application is stored in the blockchain network, the first function controller has a unique address within the blockchain network, and the versions of the first function each have a respective unique address within the blockchain network;

transmitting, by the first function controller, the data of the first function call to a first function component, the first function component executing the first function based on the data of the first function call;

receiving, by the first function controller, a first function result from the first function component; and

providing, by the first function controller, the first function result to the smart contract.

18. The system of claim 17, wherein the first function call further comprises an address of the first function and a version identifier of the first function.

19. The system of claim 18, wherein the version identifier is null indicating that a latest version of the first function is to be executed.

20. The system of claim 17, wherein operations further comprise updating, by the first function controller, statistics associated with a version of the first function that was executed in response to the first function call.

21. The system of claim 20, wherein the statistics indicate a number of times each version of a first function has been executed.

22. The system of claim 17, wherein operations further comprise:
receiving, from a smart contract, and by a second function controller executing within the blockchain network, a second function call to execute a second function, the second function call comprising data for execution of the second function, wherein the second function is different from the first function, and wherein the second function controller is different from the first function controller;

transmitting, by the second function controller, the data of the second function call to a second function component, the second function component executing the second function based on the data of the second function call, wherein the second function component is different from the first function component;

receiving, by the second function controller, a second function result from the second function component; and

providing, by the second function controller, the second function result to the smart contract.

23. The system of claim 22, wherein the first function and the second function are provided by different providers.

24. The system of claim 17, wherein the smart contract executes a transaction at least partially based on the function results, the transaction being recorded within a blockchain of the blockchain network.