CLAIMS

What is claimed is:

1. A computer-implemented method, comprising:

identifying one or more service call chains in a distributed service system, each service call chain including one or more service nodes that are sequentially called by clients of the distributed service system;

generating a service call model corresponding to a particular service call chain from the one or more service call chains;

identifying calls to the particular service call chain by the clients of the distributed service system;

updating performance statistics in the service call model for the particular service call chain, wherein the performance statistics is updated based on the identified calls to the particular service call chain;

identifying a performance problem associated with the particular service call chain based on the updated performance statistics; and

in response to identifying the performance problem associated with the particular service call chain, initiating corrective action for the identified performance problem.

2. The computer-implemented method of claim 1, wherein identifying the one or more service call chains comprises:

acquiring service call log information from the distributed service system; and

extracting the one or more service call chains from the service call log information, wherein each service call chain comprises the one or more service nodes that are sequentially called.

3. The computer-implemented method of claim 1, wherein generating the service call model comprises generating the service call model by performing aggregation processing on the service call chain, wherein the service call model comprises one or more service call topologies, wherein each service call topology is acquired by performing aggregation processing on one or more additional service call chains different than the particular service call chain; and

wherein processing the service call chain comprises processing the service call chain according to a service call topology.

4. The computer-implemented method of claim 3, further comprising:

performing a data cleaning operation on the service call topology, wherein updating performance statistics in the service call model for the particular service call chain comprises updating performance statistics in the service call model for the particular service call chain according to a cleaned service call topology.

5. The computer-implemented method of claim 4, wherein the data cleaning operation comprises at least one of:

deleting a predetermined service node in the service call topology;

deleting a service node that is in the service call topology and that does not return call result information;

deleting an occasionally-used service node in the service call topology, wherein a number of accumulated appearance times of the occasionally-used service node in the service call chain corresponding to the service call topology is less than or equal to a predetermined occasionally-used threshold; or

deleting the occasionally-used service node in the service call topology, wherein the number of accumulated appearance times of the occasionally-used service node in the service call chain corresponding to the service call topology is less than or equal to the predetermined occasionally-used threshold, and wherein a number of accumulated appearance times of another service node different from the occasionally-used service node is greater than or equal to a predetermined frequently used threshold.

6. The computer-implemented method of claim 3, wherein generating the service call model comprises:

performing aggregation processing on the service call chain with reference to call feedback information of the service node in the service call chain; and

generating the service call model, wherein the service call model comprises one or more service call topologies, and wherein each service call topology is acquired by performing aggregation processing on one or more service call chains.

7. The computer-implemented method of claim 6, wherein identifying the performance problem comprises:

comparing, based on a predetermined duration comparison rule, a corresponding statistical result with call feedback information of each service node in the service call chain corresponding to the service call topology; and

when a difference exceeds predetermined fluctuation threshold, generating alert information about a service call chain corresponding to the difference, wherein the alert information identifies a service node corresponding to the difference.

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

identifying one or more service call chains in a distributed service system, each service call chain including one or more service nodes that are sequentially called by clients of the distributed service system;

generating a service call model corresponding to a particular service call chain from the one or more service call chains;

identifying calls to the particular service call chain by the clients of the distributed service system;

updating performance statistics in the service call model for the particular service call chain, wherein the performance statistics is updated based on the identified calls to the particular service call chain;

identifying a performance problem associated with the particular service call chain based on the updated performance statistics; and

in response to identifying the performance problem associated with the particular service call chain, initiating corrective action for the identified performance problem.

9. The non-transitory, computer-readable medium of claim 8, wherein identifying the one or more service call chains comprises:

acquiring service call log information from the distributed service system; and

extracting the one or more service call chains from the service call log information, wherein each service call chain comprises the one or more service nodes that are sequentially called.

10. The non-transitory, computer-readable medium of claim 8, wherein generating the service call model comprises generating the service call model by performing aggregation processing on the service call chain, wherein the service call model comprises one or more service call topologies, wherein each service call topology is acquired by performing aggregation processing on one or more additional service call chains different than the particular service call chain; and

wherein processing the service call chain comprises processing the service call chain according to a service call topology.

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

performing a data cleaning operation on the service call topology, wherein updating performance statistics in the service call model for the particular service call chain comprises updating performance statistics in the service call model for the particular service call chain according to a cleaned service call topology.

12. The non-transitory, computer-readable medium of claim 11, wherein the data cleaning operation comprises at least one of:

deleting a predetermined service node in the service call topology;

deleting a service node that is in the service call topology and that does not return call result information;

deleting an occasionally-used service node in the service call topology, wherein a number of accumulated appearance times of the occasionally-used service node in the service call chain corresponding to the service call topology is less than or equal to a predetermined occasionally-used threshold; or

deleting the occasionally-used service node in the service call topology, wherein the number of accumulated appearance times of the occasionally-used service node in the service call chain corresponding to the service call topology is less than or equal to the predetermined occasionally-used threshold, and wherein a number of accumulated appearance times of another service node different from the occasionally-used service node is greater than or equal to a predetermined frequently used threshold.

13. The non-transitory, computer-readable medium of claim 10, wherein generating the service call model comprises:

performing aggregation processing on the service call chain with reference to call feedback information of the service node in the service call chain; and

generating the service call model, wherein the service call model comprises one or more service call topologies, and wherein each service call topology is acquired by performing aggregation processing on one or more service call chains.

14. The non-transitory, computer-readable medium of claim 13, wherein identifying the performance problem comprises:

comparing, based on a predetermined duration comparison rule, a corresponding statistical result with call feedback information of each service node in the service call chain corresponding to the service call topology; and

when a difference exceeds predetermined fluctuation threshold, generating alert information about a service call chain corresponding to the difference, wherein the alert information identifies a service node corresponding to the difference.

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:

identifying one or more service call chains in a distributed service system, each service call chain including one or more service nodes that are sequentially called by clients of the distributed service system;

generating a service call model corresponding to a particular service call chain from the one or more service call chains;

identifying calls to the particular service call chain by the clients of the distributed service system;

updating performance statistics in the service call model for the particular service call chain, wherein the performance statistics is updated based on the identified calls to the particular service call chain;

identifying a performance problem associated with the particular service call chain based on the updated performance statistics; and

in response to identifying the performance problem associated with the particular service call chain, initiating corrective action for the identified performance problem.

16. The computer-implemented system of claim 15, wherein identifying the one or more service call chains comprises:

acquiring service call log information from the distributed service system; and

extracting the one or more service call chains from the service call log information, wherein each service call chain comprises the one or more service nodes that are sequentially called.

17. The computer-implemented system of claim 15, wherein generating the service call model comprises generating the service call model by performing aggregation processing on the service call chain, wherein the service call model comprises one or more service call topologies, wherein

each service call topology is acquired by performing aggregation processing on one or more additional service call chains different than the particular service call chain; and

wherein processing the service call chain comprises processing the service call chain according to a service call topology.

18. The computer-implemented system of claim 17, the operations further comprising:

performing a data cleaning operation on the service call topology, wherein updating performance statistics in the service call model for the particular service call chain comprises updating performance statistics in the service call model for the particular service call chain according to a cleaned service call topology.

19. The computer-implemented system of claim 18, wherein the data cleaning operation comprises at least one of:

deleting a predetermined service node in the service call topology;

deleting a service node that is in the service call topology and that does not return call result information;

deleting an occasionally-used service node in the service call topology, wherein a number of accumulated appearance times of the occasionally-used service node in the service call chain corresponding to the service call topology is less than or equal to a predetermined occasionally-used threshold; or

deleting the occasionally-used service node in the service call topology, wherein the number of accumulated appearance times of the occasionally-used service node in the service call chain corresponding to the service call topology is less than or equal to the predetermined occasionally-used threshold, and wherein a number of accumulated appearance times of another service node different from the occasionally-used service node is greater than or equal to a predetermined frequently used threshold.

20. The computer-implemented system of claim 17, wherein generating the service call model comprises:

performing aggregation processing on the service call chain with reference to call feedback information of the service node in the service call chain; and

generating the service call model, wherein the service call model comprises one or more service call topologies, and wherein each service call topology is acquired by performing aggregation processing on one or more service call chains.