CLAIMS

1. An image obtaining method, performed by a server, the method comprising:

obtaining, from an application process set, a target application process corresponding to a user identifier;

calling, when detecting that an image rendering function in the target application process is executed during running the target application process, a data interception module to intercept a plurality of window image data currently generated for each window by using the image rendering function;

obtaining a picture display parameter configured for the target application process, and determining a window hierarchy identifier of each window image data according to the picture display parameter;

constructing an image multi-way tree according to window hierarchy identifiers of the plurality of window image data determined by using the determining unit, and converting the image multi-way tree into the image binary tree, wherein a first node in each hierarchy of the image multi-way tree is converted into a left node of the image binary tree, and another node that is a sibling node of the first node is converted into a right node of the image binary tree;

traversing the image binary tree according to a preset first traversing order, to determine a synthesis order of the plurality of window image data;

performing image synthesis processing on the plurality of window image data according to the synthesis order, to obtain a user interface image to be displayed; and

transmitting a notification message carrying the user interface image to a user terminal corresponding to the user identifier, so that the user terminal displays the user interface image on a user interface.

2. The method according to claim 1, wherein the calling, when detecting that an image rendering function in the target application process is executed during running the target application process, a data interception module to intercept a plurality of window image data currently generated for each window by using the image rendering function comprises:

traversing the image binary tree according to a preset second traversing order, to obtain an image capturing order of the plurality of window image data; and

calling the data interception module to obtain, through interception, the plurality of window image data according to the image capturing order.

3. The method according to claim 1, wherein the calling, when detecting that an image rendering function in the target application process is executed during running the target application process, a data interception module to intercept a plurality of window image data currently generated for each window by using the image rendering function comprises:

determining a rendering manner comprised in the image rendering function;

determining a data interception submodule corresponding to the rendering manner in the data interception module according to the rendering manner; and

calling the data interception submodule to intercept the plurality of window image data obtained when the image rendering function is executed.

4. The method according to claim 1, further comprising:

generating a message response binary tree according to the window hierarchy identifiers of the plurality of window image data, wherein

the performing the image synthesis processing on the plurality of window image data according to the synthesis order comprises:

determining display location information of each window image data based on the message response binary tree; and

performing the image synthesis processing on the plurality of window image data according to the display location information and the synthesis order.

5. The method according to claim 4, wherein the message response binary tree comprises a plurality of message nodes, and the method further comprises:

receiving a user operation message transmitted by the user terminal, and obtaining operation location information from the user operation message;

traversing the message response binary tree according to a preset third traversing order, and determining a message node of the plurality of message nodes at which the operation location information meets a preset location condition as a target message node; and

processing, by using window image data corresponding to the target message node as target window image data, a window corresponding to the target window image data in response to the user operation message.

6. The method according to claim 5, wherein each message node records window location information and window size information of a corresponding window image data; and

the operation location information meets the preset location condition when the operation location information is within a range defined by the window location information and the window size information recorded by the target message node.

7. An image obtaining apparatus, configured in a server, the apparatus comprising:

an obtaining unit, configured to obtain, from an application process set, a target application process corresponding to a user identifier, and obtain a picture display parameter configured for the target application process;

an interception unit, configured to call, when detecting that an image rendering function in the target application process is executed during running the target application process, a data interception module to intercept a plurality of window image data currently generated for each window by using the image rendering function;

a determining unit, configured to determine a window hierarchy identifier of each window image data according to the picture display parameter obtained by using the obtaining unit;

a first generation unit, configured to construct an image multi-way tree according to window hierarchy identifiers of the plurality of window image data, and convert the image multi-way tree into the image binary tree, wherein a first node in each hierarchy of the image multi-way tree is converted into a left node of the image binary tree, and another node that is a sibling node of the first node is converted into a right node of the image binary tree;

a first processing unit, configured to traverse the image binary tree generated by using the first generation unit according to a preset first traversing order, to obtain a synthesis order of the plurality of window image data; perform image synthesis processing on the plurality of window image data intercepted by using the interception unit, to obtain a user interface image to be displayed; and

a transmission unit, configured to transmit a notification message carrying the user interface image obtained by using the first processing unit to a user terminal corresponding to the user identifier, so that the user terminal displays the user interface image on a user interface.

8. The apparatus according to claim 7, wherein

the interception unit is configured to traverse the image binary tree generated by using the first generation unit according to a preset second traversing order, to obtain an image capturing order of

the plurality of window image data; and call the data interception module to obtain, through interception, the plurality of window image data according to the image capturing order.

9. The apparatus according to claim 7, wherein the interception unit is configured to determine a rendering manner comprised in the image rendering function; determine a data interception submodule corresponding to the rendering manner in the data interception module according to the rendering manner; and call the data interception submodule to intercept the plurality of window image data obtained when the image rendering function is executed.

10. The apparatus according to claim 7, further comprising:

a second generation unit, configured to generate a message response binary tree according to the window hierarchy identifiers of the plurality of window image data determined by using the determining unit, wherein

the first processing unit is configured to determine display location information of each window image data based on the message response binary tree generated by using the second generation unit; and perform the image synthesis processing on the plurality of window image data according to the display location information and the synthesis order.

11. The apparatus according to claim 10, wherein the message response binary tree comprises a plurality of message nodes, and the obtaining unit is further configured to receive a user operation message transmitted by the user terminal, and obtain operation location information from the user operation message; and

the apparatus further comprises:

a second processing unit, configured to traverse the message response binary tree generated by using the second generation unit according to a preset third traversing order, and determine a message node of the plurality of message nodes at which the operation location information obtained by using the obtaining unit meets a preset location condition as a target message node; and process, by using window image data corresponding to the target message node as target window image data, a window corresponding to the target window image data in response to the user operation message.

12. A server, comprising:

a processor, suitable for implementing one or more instructions; and

a computer storage medium, storing one or more instructions, the one or more instructions being suitable to be loaded by the processor to perform the image obtaining method according to

any one of claims 1-6.

13. A computer storage medium, storing computer program instructions, the computer program instructions, when executed by a processor, being configured to perform the image obtaining method according to any one of claims 1-6.