

CLAIMS

1. Method of providing an external device ~~(200, 300, 300')~~ with a session in a distributed computerized environment, wherein the session requires establishing conversations between the external device ~~(200, 300, 300')~~ and application servers ~~(A1, ..., C4)~~ of a system ~~(100)~~, the external device ~~(200, 300, 300')~~ and the system ~~(100)~~ operating in a client/server mode, the system ~~(100)~~ operating in one mode among the client mode and the server mode, the external device ~~(200, 300, 300')~~ operating in the other mode among the client mode and the server mode, characterized in that each application server processes at least a software application ~~(A, B, C, D)~~, at least some of the application servers ~~(A1, ..., C4)~~ being arranged to locally store in data storage means at least a part of a context of the session, allowing thereby to distribute the context through various application servers ~~(A1, ..., C4)~~;

in that at least a routing means ~~(10, 15)~~ comprised in the system ~~(100)~~ performs a step of establishing, for a given session, a conversation between the external device ~~(200, 300, 300')~~ and at least one of the application servers ~~(A1, ..., C4)~~;

and in that establishing the conversation comprises the following steps performed at the routing means ~~(10, 15)~~ with at least one data processor:

- receiving a call from one among the application server and the external device to reach the other among the application server and the external device;
- determining if the call comprises a session identifier (ID),
 - if the call does not comprise a session ID, then opening a session for said conversation, creating a session ID that uniquely identifies said session, adding the session ID to the call, storing the session ID and routing the call to the other among the application server and the external device ~~(200, 300, 300')~~, establishing thereby the conversation;
 - if the call already comprises a session ID, then routing the call to the other among the application server and the external device ~~(200, 300, 300')~~ thereby establishing the conversation and allowing said conversation to join an already opened session that is uniquely identified by said session ID through enabling the conversation to share the context of said already opened session;

wherein the system ~~(100)~~ comprises a plurality of routing means ~~(10, 11, 12, 13, 15)~~, wherein for a given session one routing means among the plurality of routing means is a main routing means ~~(10, 15)~~ in charge of routing transactions between the external device ~~(200, 300, 300')~~ and the system ~~(100)~~;

and wherein the step of allowing said conversation to join an already opened session that is uniquely identified by said session ID comprises the following steps performed at the routing means receiving the call: polling the other routing means to identify which one among the plurality of routing means is the main routing means for said already opened session and then forwarding the transaction to the main routing means.

2. The method according to the preceding claim, wherein the established conversation has a first session ID and uses a first protocol and wherein at least another conversation has the same session ID and uses a second protocol different from the first protocol.

3. The method according to any one of the preceding claims, wherein the external device ~~(200)~~ operates in a client mode in regard with the system ~~(100)~~ operating in a server mode.

4. The method according the preceding claim, wherein all application servers ~~(A1, ..., C4)~~ receiving calls having the same session ID share the same inbound session with the external device ~~(200)~~.

5. The method according to any one of claims 1 or 2, wherein the external device ~~(300, 300')~~ operates in a server mode in regard with the system ~~(100)~~ operating in a client mode.

6. The method according the preceding claim, wherein all application servers ~~(A1, ..., C4)~~ receiving calls sharing the same session ID share the same outbound conversation with the external device ~~(300, 300')~~.

7. The method according to any one of the preceding claims, wherein the external device ~~(200)~~ operates in a client mode in regard with the system ~~(100)~~ operating in a server mode and wherein an additional external device ~~(300,)~~ operates in a server mode in regard with the system ~~(100)~~ operating in a client mode.

8. The method according to any one of the preceding claims, wherein after the step of receiving a call at the routing means and before the step of determining if the call comprises a session identifier (ID), the method comprises an additional step of determining that the call requires joining an already opened session.

9. The method according to the preceding claim, wherein the step of determining that the call requires joining an already opened session comprises receiving a request to join an already opened session and wherein the call comprises a header comprising a request to join a session.

5

10. The method according to claim 8, wherein the step of determining that the call requires joining an already opened session comprises the following step: the routing means determines that the received call comes from or requires to be routed to an application server that processes a software application dedicated to requests to join an already opened session, which indicates to the routing means that the received call must join an already opened session.

10

11. The method according to any one of the preceding claims, wherein a given conversation of a session is provided with a property that controls the closure of the session.

15

12. The method according to the preceding claim, wherein the property is configured to close the session upon closure of said given conversation.

13. The method according to claim 11, wherein the property is configured to close the session upon closure of said given conversation and if no other conversation is still opened for that session and wherein the property is configured to keep the session opened upon closure of said given conversation and if at least another conversation is still open for that session

20

14. The method according to claim 11, wherein the property is configured to close the session after the end of a predetermined inactivity time period starting upon closure of said given conversation.

25

15. The method according to any one of the preceding claims, wherein upon closure of a session the routing means sends to all application servers ~~(A1, ..., C4)~~ sharing a conversation for that session a notification of session closure.

30

16. The method according to any one of the preceding claims, wherein the system comprises application servers ~~(A1, ..., C4)~~ forming groups ~~(20, 30, 40)~~ of application servers ~~(A1, ..., C4)~~ dedicated to a software application, each application server ~~(A1, ..., A8)~~ of the same group ~~(20)~~ processing independently the software application ~~(A)~~ to which the group is

35

dedicated, application servers storing a part of the context of a session defining thereby for each session a set of application servers having each an affinity with the user session, the method comprising the following steps at the routing means:

- assigning to the session a correlation record ~~(DCX)~~ arranged to comprise affinity keys, each affinity key indicating the application server that has an affinity with the session for a given software application,
- propagating the correlation record with the transaction to an application server that is relevant to process the transaction, allowing thereby all the routing means to target the application servers that are linked to the context of that session.

17. The method according to any one of the preceding claims, wherein the external device operates in a client mode and the system ~~(100)~~ operates in a server mode, wherein the external device requests to open a new session while inheriting security settings from an already opened session, wherein inheriting security settings comprises duplicating a part of a context of the already opened session, said part of context containing security settings of the already opened session and wherein the new session has a context that is independent of the context of the already opened session excepted for a part of its context containing security settings.

18. The method according to the preceding claim, wherein requesting to open a new session while inheriting security settings from an already opened session, comprises the following steps performed at the routing means:

- receiving from the external device a request to open a new session and a session ID identifying the already opened session,
- retrieving the security settings of the already opened session based on said session ID,
- propagating said security settings with a conversation of the new session.

19. A non-transitory computer-readable medium that contains software program instructions, where execution of the software program instructions by at least one data processor results in performance of operations that comprise execution of the method as in any one of the preceding claims.

~~20. System for providing an external device (200, 300, 300') with a session in a distributed computerized environment, wherein the session requires establishing conversations between the external device (200, 300, 300') and application servers (A1, ...,~~

~~C4) comprised in the system (100), the system (100) being configured to operate in a client/server mode with the external device (200, 300, 300'), the system (100) operating in one mode among the client mode and the server mode, the external device (200, 300, 300') operating in the other mode among the client mode and the server mode, the system comprising a plurality of machines comprising each at least a processor, at least some of the machines comprising data storage means, each application server running on a machine and being arranged to process each at least a software application, at least some of the application servers (A1, ..., C4) being arranged to locally store in data storage means at least a part of a context of the session, allowing thereby to distribute the context through various application servers (A1, ..., C4);~~

~~characterized in that the system (100) comprises routing means (10, 15) comprising at least a data processor configured to establish a conversation between the external device (200, 300, 300') and the application servers (A1, ..., C4), the one or more routing means (10, 15) being configured to:~~

- ~~* receive a call from one among the application server and the external device (200, 300, 300') to reach the other among the application server and the external device (200, 300, 300');~~

- ~~* determine if the call comprises a session identifier (ID),~~

- ~~— if the call does not comprise a session ID, then opening a session for said conversation, creating a session ID that uniquely identifies said session, adding the session ID to the call, storing the session ID and routing the call to the other among the application server and the external device (200, 300, 300'), establishing thereby the conversation;~~

- ~~— if the call already comprises a session ID, then routing the call to the other among the application server and the external device (200, 300, 300') thereby establishing the conversation and allowing said conversation to join an already opened session that is uniquely identified by said session ID through enabling the conversation to share the context of said already opened session.~~