

and

the second object is a second task residing within the protection domain of the at least one agent and executing within the second computer machine, wherein the first task and the second task execute concurrently on the first and second computer machines, respectively, and within the same protection domain of the at least one agent.

22. The distributed software system of claim 14, further comprising:

a plurality of bases, each base providing a local address space and computer resources to at least one agent on one of the plurality of computer machines, wherein the at least one agent resides on at least one base.

23. The distributed software system of claim 22, wherein the at least one agent resides on at least a first base on the first computer machine and also on a second base on the second computer machine, and wherein the first object resides on the first base and the second object resides on the second base.

24. The distributed software system of claim 22, wherein each base may provide the local address space and computer resources to a plurality of agents simultaneously.

25. The distributed software system of claim 22, wherein each base is implemented as an operating system-level process.

26. The distributed software system of claim 14, wherein the first computer machine and the second computer machine are heterogeneous.

27. A distributed software system for use with a plurality of computer machines connected as a network, the system comprising:

a plurality of bases, each base providing a local address space and computer resources on one of a plurality of computer machines;

at least one agent comprising a protection domain, wherein the protection domain of the at least one agent resides on at least one of the plurality of bases;

at least one object residing within the protection domain of the at least one agent; and

at least one runtime system connected to the plurality of bases, the at least one runtime system including a communication system which facilitates migration of agents and objects among the plurality of bases.

28. The distributed software system of claim 27, wherein each agent further comprises at least one subagent, each subagent residing on one base and comprising:

an object memory which stores objects in the subagent;

a task memory which stores task frames in the subagent;

program code for the agent to which the subagent belongs;

a subagent control storage comprising:

an agent identifier indicating the agent to which the subagent belongs;

an object table having a mapping which maps symbolic references of objects to corresponding physical addresses of said objects in the object memory;

a task stack which stores a plurality of task thread pointers in the task memory;

and wherein the at least one runtime system further comprises:

an agent manager for each base managing a plurality of subagent control storages of subagents residing on the corresponding base;

an object manager for each base managing a plurality of object memories for a plurality of subagents residing on the corresponding base;

an object serializer for each base serializing objects for transmitting the objects across the network to at least one base other than the corresponding base;

a task executor for each base reading program code, creating task stacks in task memories, and executing the program code;

a task serializer for each base serializing task stacks for transmitting the stacks across the network to at least one base other than the corresponding base;

a remote access controller for each base receiving remote object access messages from a task executor on at least one base other than the corresponding base and sending remote object access requests to at least one base other than the corresponding base; and

a communication system coordinating physical communication between the computer machine and the other computer machines.

29. The distributed software system of claim 28, wherein the program code is stored as class files in the subagent.

30. The distributed software system of claim 28, wherein the runtime system further facilitates