

CLAIMS

1. A computer-implemented method of launching virtual machines, comprising:
 - under control of one or more computer systems configured with executable instructions,
 - maintaining a general server pool including at least one general server configured to at least partially implement a plurality of virtual machines associated with a plurality of customers of a virtual machine provider;
 - maintaining a dedicated server pool including at least one dedicated server dedicated to a subset of the plurality of customers of the virtual machine provider;
 - receiving, from a customer of the virtual machine provider, a request to launch a virtual machine, the request associated with a server constraint specifying that the virtual machine be hosted by at least one server drawn from the dedicated server pool;
 - in response to the request, launching the virtual machine at least in part by allocating the at least one dedicated server to the virtual machine, the at least one dedicated server comprising a set of hardware resources; and
 - indicating, in a data store associated with the virtual machine provider, that the at least one dedicated server has been dedicated to hosting the virtual machine of the customer,
 - wherein maintaining the dedicated server pool comprises transitioning servers into the dedicated server pool based at least in part on anticipated demand by the customer.
2. A computer-implemented method according to Claim 1, further comprising dedicating resources associated with the at least one general server to the virtual machine, wherein dedicating the resources establishes, at least in part, a virtual network between the subset of the plurality of customers and other customers of the virtual machine provider.
3. A computer-implemented method according to Claim 1, wherein:
 - the general server pool comprises a plurality of general servers; and
 - maintaining the dedicated server pool comprises dedicating at least one server of the plurality of general servers to the subset of the plurality of customers at least in part by transitioning the at least one server from the general server pool to the dedicated server pool.
4. A computer-implemented method according to Claim 3, wherein the dedicating is predictive based at least in part on a forecast demand for the virtual machine by the subset of the plurality of customers.

5. A computer-implemented method according to Claim 3, wherein transitioning the at least one server from the general server pool to the dedicated server pool comprises performing a server transition procedure specified by at least one of the subset of the plurality of customers.

6. A computer-implemented method according to Claim 5, wherein the at least one of the subset of the plurality of customers selects the server transition procedure from a plurality of server transition procedures offered by the virtual machine provider.

7. A computer-implemented method according to Claim 1, wherein the anticipated demand is for servers by the subset of the plurality of customers.

8. A computer-implemented method according to Claim 1, wherein the server constraint further specifies that a first component of the virtual machine be implemented by at least one server from the dedicated server pool and a second component of the virtual machine be implemented by at least one server from the general server pool.

9. A computer-implemented method according to Claim 1, wherein the request to launch the virtual machine is received from a customer associated with the virtual machine, the method further comprising:

receiving, from the customer, a request to terminate the virtual machine, the request to terminate identifying the at least one dedicated server; and

in response to the request to terminate the virtual machine, terminating the virtual machine hosted by the at least one dedicated server.

10. A computerized system for launching virtual machines, comprising:
a plurality of servers collectively capable of implementing a plurality of virtual machines associated with a plurality of customers of a virtual machine provider; and

a launching interface configured to, at least:

receive a request to launch a virtual machine from a customer of the plurality of customers of the virtual machine provider, the request associated with information indicating that the virtual machine is to be hosted by at least one dedicated server;

in response to the request, select at least one available server to dedicate to the customer;

cause a data store to store information indicating that the at least one available server is dedicated to only hosting virtual machines of the customer;

after causing the at least one available server to be dedicated to the customer, launch the virtual machine utilizing the at least one available server, wherein launching the virtual machine includes provisioning the virtual machine into a virtual network, the virtual network implemented at least in part with hardware resources operated by the virtual machine provider; and

maintain a dedicated server pool by transitioning the at least one available server from a general server pool to a dedicated server pool based at least in part on anticipated demand by the customer.

11. A computerized system according to Claim 10, wherein provisioning the virtual machine into the virtual network lowers a probability that at least one other customer of the virtual machine provider gains access to unpublished information concerning the virtual machine.

12. A computerized system according to Claim 10, wherein the information comprises a set of server constraints including at least one server constraint indicating that virtual machines of the customer be hosted by the same dedicated server, and wherein the interface component is further configured to:

receive, from the customer, a second request to launch a second virtual machine, the second request associated with the information;

identify, from the data store, the at least one available server previously dedicated to the virtual machine of the customer; and

launching the second virtual machine on the at least one available server.

13. A computerized system according to Claim 10, wherein the interface component is further configured to:

receive, from the customer, a request to increase at least one operational parameter of the virtual machine;

identify, from the data store, the at least one available server previously dedicated to the virtual machine of the customer; and

dedicate a second available server to the virtual machine such that the at least one available server and the second available server host the virtual machine.

14. A computerized system according to Claim 10, wherein the transitioning comprises:

identifying a virtual machine provider event associated with the at least one available server when the at least one available server is within the general server pool, the at least one available server comprising a set of hardware resources;

initiating an entry procedure selected from a set of entry procedures, the entry procedure particular to the customer of the plurality of customers and indicating at least a transition time for the at least one available server, the at least one available server in a transition state for at least part of the entry procedure; and

concluding the entry procedure when the at least one available server enters the dedicated server pool.

15. A computerized system according to Claim 14, wherein the entry procedure comprises at least one of data storage media formatting, data storage media erasure including secure data erasure procedures, software installation, component configuration, component reallocation, access control configuration, firewall reconfiguration, virtual machine migration, authentication credential creation and issuance, mobile data center relocation, manual review of server transition by a customer, or customer-provided entry procedures including customer-provided computer-executable instructions.

16. A computer-implemented method for provisioning virtual resources, comprising:

under control of one or more computer systems configured with executable instructions,

receiving, at a control plane of a virtual machine provider having a plurality of customers, a request to launch a virtual machine from a customer of the plurality of customers of the virtual machine provider, the request associated with information indicating that the virtual machine is to be hosted by at least one dedicated hardware server;

in response to the request, selecting an available hardware server to dedicate to the customer;

causing the available hardware server to be dedicated to the customer;

causing a data store to store information indicating that the available hardware server is dedicated to hosting virtual machines only of the customer;
after causing the available hardware server to be dedicated to the customer,
launching the virtual machine on the available hardware server, wherein launching the virtual machine includes provisioning the virtual machine into a virtual network, the virtual network operated by the virtual machine provider on behalf of the customer; and

maintaining a dedicated server pool by transitioning the available hardware server from a general server pool to a dedicated server pool based at least in part on anticipated demand by the customer.

17. A computer-implemented method for provisioning virtual machines, comprising:
under control of one or more computer systems configured with executable instructions,
maintaining a general server pool including at least one general hardware server configured to at least partially implement a plurality of virtual machines associated with a plurality of customers of a virtual machine provider;
maintaining a dedicated server pool including at least one dedicated hardware server dedicated to a subset of the plurality of customers of the virtual machine provider;
receiving, from a customer of the virtual machine provider, a request to launch a virtual machine, the request associated with a server constraint specifying that the virtual machine be hosted by a hardware server drawn from the dedicated server pool; in response to the request, launching the virtual machine at least in part by allocating the at least one dedicated hardware server to the virtual machine, the at least one dedicated hardware server comprising a set of hardware resources; and
indicating, in a data store associated with the virtual machine provider, that the at least one dedicated hardware server has been dedicated to hosting virtual machines authorized by a policy specified by the customer, wherein maintaining the dedicated server pool comprises transitioning hardware servers into the dedicated server pool based at least in part on anticipated demand by the customer.

18. A computer-implemented method according to Claim 17, wherein maintaining the dedicated server pool comprises transitioning hardware servers from the general server pool to the dedicated server pool when an inactivity level of the dedicated server pool is less than a first threshold.

19. A computer-implemented method according to Claim 18, wherein maintaining the dedicated server pool further comprises transitioning other hardware servers from the dedicated

server pool to the general server pool when the inactivity level of the dedicated server pool is greater than a second threshold.

20. A computer-implemented method according to Claim 17, further comprising dedicating resources associated with the at least one general hardware server to the virtual machine, wherein dedicating the resources establishes, at least in part, a virtual network between the subset of the plurality of customers and other customers of the virtual machine provider.

21. A computer-implemented method according to Claim 20, wherein dedicating the resources associated with the at least one general hardware server establishes an information barrier between at least one of the other customers of the virtual machine provider and the customer.

22. A computer-implemented method according to Claim 17, wherein launching the virtual machine isolates the virtual machine, at least in part, from at least one operational fault occurring at the at least one general hardware server.

23. A computer-implemented method according to Claim 17, wherein: the general server pool includes a plurality of general hardware servers; and maintaining the dedicated server pool comprises dedicating at least one hardware server of the plurality of general hardware servers to the subset of the plurality of customers at least in part by transitioning the at least one hardware server from the general server pool to the dedicated server pool.

24. A computer-implemented method according to Claim 23, wherein the dedicating is predictive based at least in part on a forecast demand for the virtual machine by the subset of the plurality of customers.

25. A computer-implemented method according to Claim 23, wherein transitioning the at least one hardware server from the general server pool to the dedicated server pool comprises performing a server transition procedure specified by at least one of the subset of the plurality of customers.

26. A computer-implemented method according to Claim 25, wherein the at least one of the subset of the plurality of customers selects the server transition procedure from a plurality of server transition procedures offered by the virtual machine provider.

27. A computer-implemented method according to Claim 17, wherein the virtual machine comprises at least one of: a virtual computer system and a virtual data store.

28. A computer-implemented method according to Claim 17, wherein the at least one dedicated hardware server is associated with a set of hardware resources, the set of hardware resources comprising at least one of: a storage device, a physical server, a server rack, a physically secured portion of a data center, a portion of a data center monitored with respect to physical access, a data center, a mobile data center, a network switch, a network connection, a wireless network transmitter, and a wireless network receiver.

29. A computer-implemented method according to Claim 16, wherein transitioning the available hardware server comprises:
identifying a virtual machine provider event associated with the available hardware server when the available hardware server is within the general server pool, the available hardware server comprising a set of hardware resources;
initiating an entry procedure selected from a set of entry procedures, the entry procedure particular to the customer of the plurality of customers and indicating at least a transition time for the available hardware server, the available hardware server in a transition state for at least part of the entry procedure; and
concluding the entry procedure when the available hardware server enters the dedicated server pool.

30. A computer-implemented method according to Claim 29, wherein the virtual machine provider event comprises at least one of a virtual machine launching request or an automated transition based at least in part on a forecast launching request.

31. A computer-implemented method according to Claim 30, wherein the entry procedure comprises at least one of data storage media formatting, data storage media erasure including secure data erasure procedures, software installation, component configuration, component reallocation, access control configuration, firewall reconfiguration, virtual machine migration, authentication credential creation and issuance, mobile data center relocation, manual review of server

transition by a customer, or customer provided entry procedures including customer-provided computer-executable instructions.

32. A computer-implemented method according to Claim 17, wherein anticipated demand is for hardware servers by the subset of the plurality of customers.

33. A computer-implemented method according to Claim 17, wherein the server constraint further specifies that a first component of the virtual machine be implemented by at least one hardware server from the dedicated server pool and a second component of the virtual machine be implemented by at least one hardware server from the general server pool.

34. A computer-implemented method according to Claim 17, wherein the virtual machine comprises a first component and a second component, each component implemented by a distinct hardware server drawn from at least the general server pool and the dedicated server pool, the first component distinct from the second component.

35. A computer-implemented method according to Claim 17, wherein the request to launch the virtual machine is received from a customer associated with the virtual machine, the method further comprising:
receiving, from the customer, a request to terminate the virtual machine, the request to terminate identifying the at least one dedicated hardware server; and in response to the request to terminate the virtual machine,
terminating the virtual machine hosted by the at least one dedicated hardware server.

36. A computer-implemented method according to Claim 16, wherein provisioning the virtual machine into the virtual network lowers a probability that at least one of the other customers of the virtual machine provider gains access to unpublished information concerning the virtual machine.

37. A computer-implemented method according to Claim 16, further comprising:
receiving a request to launch a second virtual machine from the customer, the request associated with the a set of server constraints including at least one server constraint
indicating that virtual machines of the customer be hosted by the same dedicated hardware server;

identifying, from the data store, the available hardware server previously dedicated to the virtual machine of the customer; and
launching the second virtual machine on the dedicated available hardware server.

38. A computer-implemented method according to Claim 37, further comprising:
receiving, from the customer, a request to terminate the virtual machine, the request to terminate identifying the dedicated available hardware server;
in response to the request to terminate the virtual machine, terminating the virtual machine hosted by the dedicated available hardware server; and
allowing the dedicated available hardware server to continue to host the second virtual machine.

39. A computer-implemented method according to Claim 16, further comprising:
receiving, a request to increase at least one operational parameter of the virtual machine from the customer;
identifying, from the data store, the available hardware server previously dedicated to the virtual machine of the customer; and
dedicating a second available hardware server to the virtual machine such that the available hardware server and the second available hardware server host the virtual machine.

40. A computer-implemented method according to Claim 16, wherein the request to provision is associated with a set of server constraints, a particular server constraint of the set of server constraints indicates that the virtual machine be hosted by a second dedicated hardware server.