

CLAIMS

1. A computer-implemented method for migrating a virtual machine instance, comprising:

under the control of one or more computer systems of a virtual computer system service, the one or more computer systems configured with executable instructions,

receiving a set of preferences from a customer, the set of preferences including one or more hardware specifications for instantiating a virtual machine instance that indicates an optionally specifiable hardware preference for instantiating a virtual machine instance, the set of preferences received via an interface through which one or more requests for instantiation of a virtual machine instance from a plurality of virtual machine instance types can be submitted, one or more of the plurality of virtual machine instance types being capable of being requested with the optionally specifiable hardware preference;

instantiating the virtual machine instance to result in an instantiated virtual machine instance in a first physical host computer system, the first physical host computer system comprising hardware that does not conform to the set of preferences by lacking the indicated optionally specifiable hardware preference at the time of instantiation of the virtual machine instance;

generating for the instantiated virtual machine instance, a metadata flag that identifies that the instantiated virtual machine instance should be migrated to a physical host computer system that conforms to the set of preferences by comprising hardware that has the indicated optionally specifiable hardware preference if capacity within a conforming physical host computer system becomes available that comprises the indicated optionally specifiable hardware preference defined by the preferences;

detecting, as a result of the metadata flag, available capacity within a second physical host computer system after instantiation of and during execution of the virtual machine instance, the second physical host computer system comprising hardware that conforms to the set of preferences by comprising the indicated optionally specifiable hardware preference defined by the preferences; and

migrating, as a result of the metadata flag, the virtual machine instance from the first physical host computer system to the second physical host computer system partially due to having detected the available capacity within the second physical host computer system.

2. The computer-implemented method of claim 1, wherein the set of preferences are received concurrently with a request to provision a virtual machine instance.

3. The computer-implemented method of claim 2, wherein the request to provision a virtual machine instance includes an indication of being fulfillable by instantiating the virtual machine instance using hardware that does not conform to the set of preferences for an amount of time.

4. The computer-implemented method of claim 1, wherein the method further comprises:

detecting an elective shutdown of the virtual machine instance; and
migrating the virtual machine instance from the first physical host computer system to the second physical host computer system includes restarting the virtual machine instance on the second physical host computer system to restore the virtual machine instance from the elective shutdown.

5. The computer-implemented method of claim 1, wherein the set of preferences are part of a request to migrate an existing virtual machine instance from the first physical host computer system to the second physical host computer system.

6. The computer-implemented method of claim 4, further comprising denying the request to migrate the existing virtual machine instance due at least in part to unavailable capacity in a set of physical host computer systems conforming to the set of preferences.

7. The computer-implemented method of claim 1, wherein migrating comprises rebooting the virtual machine instance upon detecting available capacity of the second physical host computer system such that the virtual machine instance restarts on the second physical host computer system.

8. A computer-implemented method for migrating a virtual machine instance, comprising:

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

instantiating the virtual machine instance to result in an instantiated virtual machine instance in a first computer system, the first computer system comprising one or more components that do not conform, at the time of instantiation of the virtual machine instance, to a preference for one or more hardware specifications for instantiating a virtual machine instance that indicates an optionally specifiable hardware preference for instantiating a virtual machine instance, the preference received via an interface through which one or more requests for instantiation of a virtual machine instance from a plurality of virtual machine instance types can be submitted, one or more of the plurality of virtual machine instance types being capable of being requested with the optionally specifiable hardware preference;

generating for the instantiated virtual machine instance a metadata flag that identifies that the instantiated virtual machine instance should be migrated to a physical host computer system that conforms to the preference if capacity within a conforming physical host computer system becomes available;

detecting, as a result of the metadata flag, and after instantiation of and during execution of the virtual machine instance, a condition within a second host computer system that conforms to the preference; and

migrating, as a result of the metadata flag, the virtual machine instance from the first computer system to the second host computer system due at least in part to having detected the condition within the second host computer system.

9. The computer-implemented method of claim 8, wherein the condition is based at least in part on availability of capacity within the second host computer system for instantiating the virtual machine instance.

10. The computer-implemented method of claim 8, wherein the preference is received through an interface through which one or more requests for instantiation of a virtual machine instance can be submitted.

11. The computer-implemented method of claim 8, wherein the preference includes a requirement for migration of the virtual machine instance based at least in part on a host computer system comprising the one or more hardware specifications.

12. The computer-implemented method of claim 8, wherein migrating the virtual machine instance is performed without rebooting the virtual machine instance.

13. The computer-implemented method of claim 8, wherein instantiating the virtual machine instance in the first computer system is performed to fulfill a request to provision the virtual machine instance, the request including the preference.

14. A computer system, comprising:
an interface through which one or more requests for instantiation of a virtual machine instance from a plurality of virtual machine instance types can be submitted, one or more of the plurality of virtual machine instance types being capable of being requested with an optionally specifiable hardware preference;
one or more host computer systems comprising hardware components collectively configured to instantiate a virtual machine instance; and
a management sub-system configured to process a request received through the interface, wherein:

the virtual machine instance is instantiated in a first host computer system from the one or more host computer systems to result in an instantiated virtual machine instance, the first computer system comprising one or more components that do not conform, at the time of instantiation of the virtual machine instance, to the optionally specifiable hardware preference for one or more hardware specifications for instantiating the virtual machine instance that indicates a hardware component for instantiating a virtual machine instance;

a metadata flag is associated with the instantiated virtual machine instance that identifies that the instantiated virtual machine instance should be migrated to a host computer system that conforms to the set of preferences if capacity within a conforming physical host computer system becomes available; and

the virtual machine instance is migrated, as a result of the metadata flag and after instantiation of and during execution of the virtual machine instance, from the first host computer system to a second host computer system that conforms to the optionally specifiable hardware preference.

15. The computer system of claim 14, wherein the virtual machine instance is migrated based at least in part on availability of one or more slots in the second host computer system, the one or more slots comprising capacity that is allocated to a virtual machine instance.

16. The computer system of claim 14, wherein the management sub-system is further configured to migrate an existing virtual machine instance from the second host computer system to a non-conforming host computer system based at least in part on the optionally specifiable hardware preference.

17. The computer system of claim 14, wherein the virtual machine instance is migrated to the second host computer system based at least in part on a ranking of a set of available placement locations within the one or more host computer systems based at least in part on whether the available placement locations satisfy the optionally specifiable hardware preference.

18. The computer system of claim 14, wherein the virtual machine instance is instantiated within the first host computer system that does not conform to the optionally specifiable hardware preference as a result of a lack of capacity for the virtual machine instance in a set of host computer systems that satisfy the optionally specifiable hardware preference.

19. The computer system of claim 14, wherein the virtual machine instance is migrated from the first host computer system to the second host computer system without rebooting the virtual machine instance.

20. One or more non-transitory_computer-readable storage media having collectively stored therein instructions that, when executed by one or more processors of a computer system, cause the computer system to fulfill a set of preferences that includes one or more hardware specifications for instantiating a virtual machine instance that indicates an

optionally specifiable hardware preference for instantiating a virtual machine instance by causing the computer system to at least:

implement, for an amount of time, the virtual machine instance to result in an instantiated virtual machine instance using a first host computer system that fails to conform to the one or more hardware specifications at the time of instantiation of the virtual machine instance;

generate in the instantiated virtual machine a metadata flag that identifies that the instantiated virtual machine instance should be migrated to a host computer system that conforms to the set of preferences if capacity within a conforming host computer system becomes available; and

migrate the virtual machine instance, as a result of the metadata flag and after instantiation of and during execution of the virtual machine instance, from the first host computer system to a second host computer system that conforms to the one or more hardware specifications,

wherein the set of preferences are received via an interface through which one or more requests for instantiation of a virtual machine instance from a plurality of virtual machine instance types can be submitted, one or more of the plurality of virtual machine instance types being capable of being requested with the optionally specifiable hardware preference.

21. The one or more non-transitory computer-readable storage media of claim 20, wherein migrating includes selecting the second host computer system based at least in part on a ranking of available slots for the virtual machine instance based at least in part on underlying hardware specifications for the available slots.

22. The one or more non-transitory computer-readable storage media of claim 20, wherein the set of preferences are received in a request to provision the virtual machine instance.

23. The one or more non-transitory computer-readable storage media of claim 20, wherein the instructions further cause the computer system to deny a request to provision another virtual machine instance as a result of the request specifying one or more

hardware specifications for which capacity for virtual computer system instantiation is unavailable.

24. The one or more non-transitory computer-readable storage media of claim 20, wherein:

the instructions further cause the computer system to detect an elective shutdown of the virtual machine instance; and

migrating the virtual machine instance occurs such that the virtual machine instance restarts on the second host computer system.

25. The one or more non-transitory computer-readable storage media of claim 20, wherein the instructions further cause the virtual computer system to reboot the virtual computer system from the first host computer system to the second host computer system.