

CLAIMS:

1. A method of providing virtual computers to users, the method including:
(a) receiving a series of system logon requests by each user, and in response to the received system login requests providing the respective user with a series
5 of virtual computers that reflect applied updates; (b) maintaining a pool of suspended virtual computers as a cache for load storm logon requests, with each virtual computer being provided by resuming a suspended virtual computer from the pool of suspended virtual computers where the suspended virtual computers are based on at least one virtual computer template; (c)
10 customizing each virtual computer for the particular user after the suspended virtual computer is resumed from the pool of suspended virtual computers to provide an active virtual computer, said customizing each virtual computer for the particular user including providing the resumed virtual computer with a user data layer; (d) regularly updating the at least one virtual computer
15 template so that each virtual computer in the series of virtual computers provided to each user reflects the applied updates; and (e) using the updated at least one virtual computer template to create each of suspended virtual computers.
2. A method as claimed in claim 1 including ensuring that the virtual computers
20 provided to the users are regularly updated by terminating virtual computers based on system logoff requests by users.
3. A method as claimed in claim 2 including the terminated virtual computers not being used again in the provision of the virtual computers to the users.
4. A method as claimed in claim 3 wherein maintaining suspended virtual
25 computers in the pool includes ensuring that the suspended virtual computers have a desirable turnover rate.

5. A method as claimed in claim 4 wherein the turnover rate of suspended virtual computers in the pool of at least 1 virtual machine per 120 sec for each suspended virtual computer in the pool.
- 5 6. A method as claimed in any one of claims 3 to 5 wherein maintaining suspended virtual computers in the pool includes deleting or otherwise removing older suspended virtual computers from the pool.
7. A method as claimed in any one of claims 1 or 6 including providing suspended virtual computers in the pool with each suspended virtual computer having services suspended in a substantially deployed state; wherein the
10 substantially deployed state comprises a state in which the services are available as part of a fully operational system in the sense of being enabled and functional.
8. A method as claimed in claim 7 wherein creating each of suspended virtual computers includes cloning one or more of the virtual computer templates to
15 provide a number of virtual computers; installing applications on the virtual computers according to desired user classes; and suspending the virtual computers.
9. A method as claimed in claim 8 wherein in order to accommodate different user classes, the method includes uninstalling applications from a number of
20 virtual computers cloned from the at least one virtual computer template.
10. A method as claimed in claim 8 or 9 including creating suspended virtual computers in the pool with each suspended virtual computer having services suspended in a substantially deployed state; and ensuring that application installation or uninstallation is limited to 30 seconds or less in duration.
- 25 11. A computer system for providing virtual computers, the computer system including: a pool facility for storing a pool of suspended virtual computers as a cache for load storm logon requests, each suspended virtual computer based

- on at least one virtual computer template; and a provision manager for providing a series of virtual computers as a result of a series of system logon requests by each user; the provision manager including an update facility, a resume facility and a customization facility; the update facility for regularly
5 updating the or each at least one virtual computer template so that each created virtual computer in the series of virtual computers provided to each user reflects applied updates; the resume facility for resuming virtual computers from the pool of suspended virtual computers provided by the pool facility; the customization facility for customizing virtual computers for the particular
10 user after the suspended virtual computer is resumed from the pool of suspended virtual computers to provide active virtual computers, said customizing each virtual computer for the particular user including providing the resumed virtual computer with a user data layer.
12. A computer system as claimed in claim 11 wherein the provision manager
15 includes a termination facility for terminating virtual computers based on system logoff requests; the termination facility for assisting with ensuring that the virtual computers provided to the users are regularly updated.
13. A computer system as claimed in claim 12 wherein the provision manager is
20 configured to maintain suspended virtual computers in the pool by ensuring that the suspended virtual computers have a desirable turnover rate.
14. A computer system as claimed in claim 13 wherein the provision manager is
configured for maintaining suspended virtual computers in the pool by deleting or other removing older suspended virtual computers in the pool.
15. A computer system as claimed in any one of claims 11 to 14 wherein the
25 provision manager includes a creation facility configured for providing suspended virtual computers in the pool with each suspended virtual computer having services suspended in a substantially deployed state, wherein the substantially deployed state comprises a state in which services are available

as part of a fully operational system in the sense of being enabled and functional.

16. A computer system as claimed in any one of claims 11 to 14 wherein the provision manager includes: a creation facility for providing the suspended
5 virtual computers in the pool by cloning one or more of the at least one virtual computer template to provide a number virtual computers; an installation facility for installing applications according to the different user classes; and a suspension facility for suspending the virtual computers.
17. A computer system as claimed in claim 16 wherein the provision facility
10 includes an uninstall facility for accommodating different user classes, the uninstall facility for uninstalling applications from virtual computers cloned from the at least one virtual computer template.
18. A non-transient computer readable medium having stored thereon computer
15 executable instructions for performing a computer implemented method as claimed in any one of claims 1 to 10.
19. A non-transient computer readable medium having stored thereon computer
executable instructions encoding a computer implemented system as claimed
in any one of claims 11 to 17.
20. A method of providing virtual computers to users, the method comprising:
20 creating a pool of suspended virtual computers where the suspended virtual computers are based on at least one virtual computer template; regularly applying updates to the at least one virtual computer template to ensure that each virtual computer provided reflects the applied updates; receiving a series
25 of system logon requests by each user; providing the respective user with a virtual computer for each received system logon request received from the respective user; wherein each provided virtual computer has applied updates; wherein providing each virtual computer comprises resuming a suspended

virtual computer from the pool of suspended virtual computers; customizing each virtual computer for the particular user after the suspended virtual computer is resumed from the pool of suspended virtual computers to provide an active virtual computer; said customizing each virtual computer for the particular user including providing the resumed virtual computer with a user data layer; removing from the pool of suspended virtual computers suspended virtual computers that meet an age criterion and/or a virtual computer which has been used as an active virtual computer and the user has logged off from use of the active virtual computer; and replenishing the pool of suspended virtual computers with suspended virtual computers based on the regularly updated at least one virtual computer template at a rate so as to have sufficient suspended virtual computers in the pool of suspended virtual computers to meet a minimum rate of receiving system logon requests.