

What is claimed is ~~HAT IS CLAIMED IS:~~

1. A method for upgrading farms in an online service, comprising:

determining when to deploy a new farm in a network to replace an old farm;

deploying the new farm; wherein deploying the new farm comprises provisioning

5 different machines in the new farm to perform different roles for the online service;

wherein the machines performing a same role are arranged in a highly available configuration;

creating a backup for each database in the old farm while continuing to allow reads and writes to the database while the database is being backed up;

10 copying each database in the old farm to the new farm; while continuing to allow reads and writes to the databases previously backed up in the old farm; wherein the old farm continues to process requests for the roles provided by the old farm;

performing any upgrades to the databases in the new farm;

automatically routing requests from the old farm to the new farm; and

15 unprovisioning the old farm.

2. The method of Claim 1, wherein provisioning the machines in the new farm comprises automatically starting a process to deploy the new farm within the network; wherein deploying the farm comprises provisioning software on the machines within the farm using virtual hard disk (VHD) images, and starting the machines.

20 3. The method of Claim 1, further comprising marking each database in the old farm as read only during a time period that each database is being copied to the new farm.

4. The method of Claim 1, further comprising updating the databases copied to the new farm with any data that changed on the old farm since a time the data was backed up on the old farm.

25 5. The method of Claim 1, further comprising automatically adjusting a configuration of the new farm during deployment to load balance the new farm.

6. The method of Claim 1, wherein determining when to deploy the new farm to replace the old farm comprises determining when the old farm has at least a potential security breach.

30 7. The method of Claim 1, wherein deploying the new farm comprises automatically deploying: a content farm; a federated services farm; and a SQL farm.

8. The method of Claim 7, wherein the content farm is deployed first and the federated services farm second.

9. The method of Claim 1, wherein deployment of the new farm initially has a portion of a determined number of machines to be deployed.

108. A computer-readable storage medium having computer-executable instructions for deploying farms for an online service, comprising:

5 machines are arranged within farms within each of the networks, wherein the role is used to determine one or more virtual machines to install the machines, wherein the configuration stores a goal for each of the farms and a role for each of the farms;

determining when to deploy a new farm in a network to replace an old farm; wherein the new farm and the old farm comprise a first group of virtual machines to perform a first
10 role; a second group of machines to perform a second role; and a third group of machines to perform a third role;

deploying the new farm; wherein deploying the new farm comprises provisioning physical machines within the network with virtual machines to perform the first role, the second role and the third role; wherein the physical machines and the virtual machines are
15 arranged in a highly available configuration;

creating a backup for each database in the old farm while continuing to allow reads and writes to the database while the database is being backed up;

copying each database in the old farm to the new farm; while continuing to allow reads and writes to the databases previously backed up in the old farm; wherein the old
20 farm continues to process requests for the roles provided by the old farm;

marking each database in the old farm as read only during a time period that each database is being copied to the new farm;

performing any upgrades to the databases in the new farm;

automatically routing requests from the old farm to the new farm; and

25 unprovisioning the old farm.

11. The computer-readable storage medium of Claim 10, wherein the first group of virtual machines is a content farm; the second group of machines is a federated services farm; and a third group of machines is a database farm.

12. The computer-readable storage medium of Claim 11, wherein deploying the new
30 farm comprises automatically deploying the content farm first followed by deploying the federated services farm followed by deploying the database farm.

13. The computer readable storage medium of Claim 11, wherein provisioning the machines in the new farm comprises automatically starting a process to deploy the new

farm within the network; wherein deploying the farm comprises provisioning the machines within the farm using virtual hard disk (VHD) images, and starting the machines.

5 14. The computer-readable storage medium of Claim 11, further comprising updating the databases copied to the new farm with any data that changed on the old farm since a time the data was backed up on the old farm.

15 15. The computer-readable storage medium of Claim 11, further comprising automatically adjusting a configuration of the new farm during deployment to load balance the new farm.

10 16. The computer-readable storage medium of Claim 11, wherein determining when to deploy the new farm to replace the old farm comprises determining when the old farm has at least a potential security breach.

179. -A system for deploying farms for an online service, comprising:

15 a network comprising physical machines, virtual machines and databases; wherein the virtual machines are arranged in farms that each perform a role; wherein the farms comprise content farms, federated services farms and SQL farms that are arranged together in groups;

20 a processor and a computer-readable storage medium;

25 an operating environment stored on the computer-readable medium and executing on the processor; and

30 software that is operative to:

store a configuration of machines in farms of different networks for the online service, wherein the configuration includes a location of each of the machines that includes a rack location of the machine and roles of the machines in the networks; wherein the role is used to determine one or more virtual machines to install the machines, wherein the

configuration stores a goal for each of the farms and a role for each of the farms;

determine when to deploy a new farm in a network to replace an old farm;

deploy the new farm; wherein deploying the new farm comprises provisioning the physical machines within the network with virtual machines to perform the roles of the content farm, the federated services farm and the SQL farm; wherein the physical machines and the virtual machines are arranged in a highly available configuration;

creating a backup for each database in the old farm while continuing to allow reads and writes to the database while the database is being backed up;

copying each database in the old farm to the new farm; while continuing to allow reads and writes to the databases previously backed up in the old farm; wherein the old farm continues to process requests for the roles provided by the old farm;

5 marking each database in the old farm as read only during a time period that each database is being copied to the new farm;
automatically routing requests from the old farm to the new farm; and
unprovisioning the old farm.

10 18. The system of Claim 17, wherein deploying the new farm comprises automatically deploying the content farm first followed by deploying the federated services farm followed by deploying the database farm.

~~19~~¹⁰. The system of Claim ~~17~~⁹, wherein provisioning the machines in the new farm comprises automatically starting a process to deploy the new farm within the network; wherein deploying the farm comprises provisioning the machines within the farm using virtual hard disk (VHD) images, and starting the machines.

15 20. The system of Claim 17, further comprising determining when the upgrade is unsuccessful for a farm and when unsuccessful using routing requests to the databases in the old farm.