UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

INVINCIBLE IP LLC, Plaintiff v. **ALIBABA CLOUD US LLC,** Defendant	**Case No.**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Invincible IP, LLC ("Invincible" or "Plaintiff") files this Complaint for patent infringement against Alibaba Cloud US LLC ("Defendant"), and alleges as follows:

NATURE OF THE ACTION

1.   This is an action for patent infringement arising under 35 U.S.C. § 1 *et seq*.

PARTIES

2.   Invincible is a limited liability company organized and existing under the laws of the State of Texas with its principal place of business in Plano, Texas.

3.   Upon information and belief, Defendant is a corporation organized and existing under the laws of Delaware with a principal place of business at 400 S El Camino Real, Suite 400 San Mateo, California 94402.

JURISDICTION AND VENUE

4.   This Court has original jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

5.   Defendant is subject to personal jurisdiction of this Court based upon it being a Delaware corporation, such that Defendant is essentially at home in the State of Delaware.

6.   Venue is proper in this District under 28 U.S.C. § 1400(b) because Defendant resides in this judicial district.

IDENTIFICATION OF THE ACCUSED SYSTEMS AND PRODUCTS

7.   Defendant provides for its customers use Alibaba Cloud.

8.   Defendant provides for its customers use AlibabaMQ for Apache RocketMQ.

9.   Defendant provides for its customers use Alibaba Cloud Auto-Scaling.

10.   Defendant provides for its customers use Alibaba Cloud – 'Elastic Compute Service'.

COUNT I (Infringement of U.S. Patent No. 8,938,634)

11.   Invincible incorporates the above paragraphs as though fully set forth herein.

12.   Plaintiff is the owner, by assignment, of U.S. Patent No. 8,938,634 (" the '634 Patent"), entitled USER GENERATED DATA AND POWER SAVINGS, which issued on January 20, 2015. A copy of the '634 Patent is attached as Exhibit 1.

13.   The '634 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

14.   Defendant has been and is now infringing one or more claims of the '634 Patent under 35 U.S.C. § 271 by making, using, selling, and offering to sell Alibaba Cloud in the United States without authority.

15.   Claim 1 of the '634 Patent recites:

1.   A method to provide power savings in a data center, the method comprising:

identifying user-provided hardware independent power saving codes from multiple virtual machines within the data center;

converting at least a portion of the user-provided hardware independent power saving codes into a device power management message specific to a computing system in the data center, wherein the converting includes identifying the portion of the user-provided hardware independent power saving codes relevant to the computing system and converting the portion of the user-provided hardware independent power saving codes into the device power management message specific to the computing system in the data center; and

providing the device power management message to the computing system, wherein the computing system is operative to enable or disable one or more devices within the computing system in accordance with the device power management message.

16.   More particularly, Defendant infringes at least claim 1 of the '634 Patent.

17.   On information and belief, Defendant makes, uses, sells, and offers to sell Alibaba Cloud, which practices a method to provide power savings (e.g., halts power to a host) in a data center.

18.   On information and belief, the method practiced by Alibaba Cloud includes a step of identifying user-provided hardware independent power saving codes (e.g. reboot, force stop, etc.) from multiple virtual machines (e.g. Instances) within the data center.

19.   On information and belief, the method practiced by Alibaba Cloud includes a step of converting at least a portion of the user-provided hardware independent power saving codes (e.g. reboot, force stop, etc.) into a device power management message specific to a computing system (e.g. Instance Host) in the data center, wherein the converting includes identifying the portion of the user-provided hardware independent power saving codes (e.g. reboot, force stop, etc.) relevant to the computing system (e.g. Instance Host) and converting the portion of the user-provided hardware independent power saving codes (e.g. reboot, force stop, etc.) into the device power management message specific to the computing system (e.g. Instance Host) in the data center.

20.   On information and belief, Alibaba Cloud accepts user provided hardware independent power saving code through rebooting, force stop, etc. and converts it to device power management message specific to VM hosts. The computing system identifies the rebooting, force stop, etc. of VM instance.

21.   On information and belief, Alibaba Cloud practices providing the device power management message (e.g., message to power on/off the server, message to reboot the instance, etc.) to the computing system (e.g. Instance Host), wherein the computing system (e.g. Instance Host) is operative to enable or disable one or more devices (e.g. servers, Instance hosts, etc.) within the computing system (e.g. Instance Host) in accordance with the device power management message (e.g. message to power on/off the server through force stop, message to reboot the instance).

22.   Plaintiff has been damaged by Defendant's infringing activities.

COUNT II (Infringement of U.S. Patent No. 8,954,993)

23.   Invincible incorporates the above paragraphs as though fully set forth herein.

24.   Plaintiff is the owner, by assignment, of U.S. Patent No. 8,954,993 ("the '993 Patent"), entitled LOCAL MESSAGE QUEUE PROCESSING FOR CO-LOCATED WORKERS, which issued on February 10, 2015. A copy of the '993 Patent is attached as Exhibit 2.

25.   The '993 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

26.   Defendant has been and is now infringing one or more claims of the '993 Patent under 35 U.S.C. § 271 by making, using, selling, and offering to sell AlibabaMQ for Apache RocketMQ in the United States without authority.

27.   Claim 1 of the '993 Patent recites:

1. A method to locally process queue requests from co-located workers in a datacenter, the method comprising:

detecting a producer worker at a first server sending a first message to a datacenter queue at least partially stored at a second server;

storing the first message in a queue cache at the first server, wherein the queue cache includes one of a copy and a partial copy of the datacenter queue;

detecting a consumer worker at the first server sending a message request to the datacenter queue;

providing the stored first message to the consumer worker in response to the message request;

receiving a signal from a command channel associated with the datacenter queue; and

modifying the stored first message in response to receiving the signal.

28.   More particularly, Defendant infringes at least claim 1 of the '993 Patent.

29.   On information and belief, Defendant makes, uses, sells, and offers to sell AlibabaMQ for Apache RocketMQ, which practices a method to locally process queue requests from co-located workers in a datacenter.

30.   On information and belief, AlibabaMQ for Apache RocketMQ practices detecting a producer worker (e.g. producer cluster) at a first server (e.g. a first server at Alibaba cloud), sending a first message to a datacenter queue (e.g. RocketMQ queue) at least partially stored at a second server (e.g. RocketMQ server).

31.   On information and belief, AlibabaMQ for Apache RocketMQ practices storing the first message in a queue cache at the first server (e.g., a server at Alibaba cloud) wherein the queue cache includes one of a copy and a partial copy of the datacenter queue (e.g., a message queue at RocketMQ server). Further, on information and belief, a first server with a producer cluster of the AlibabaMQ for Apache RocketMQ system stores messages in a queue cache.

32.   On information and belief, AlibabaMQ for Apache RocketMQ practices detecting a consumer worker (e.g., consumer group) at the first server sending a message request (e.g. request messages from the queue) to the datacenter queue (e.g. RocketMQ queue).

33.   On information and belief, AlibabaMQ for Apache RocketMQ practices providing the stored first message to the consumer worker (e.g., Consumer group) in response to the message request (e.g. request messages from the queue).

34.   On information and belief, AlibabaMQ for Apache RocketMQ practices receiving a signal (e.g. OnsInstanceDelete) from a command channel associated with the datacenter queue.

35.   On information and belief, AlibabaMQ for Apache RocketMQ The accused system practices modifying the stored first message in response to receiving the signal (e.g. OnsInstanceDelete). On information and belief, upon reception of OnsInstanceDelete command, the accused system deletes messages from the queue.

36.   Plaintiff has been damaged by Defendant's infringing activities.

COUNT III (Infringement of U.S. Patent No. 9,479,472)

37.   Invincible incorporates the above paragraphs as though fully set forth herein.

38.   Plaintiff is the owner, by assignment, of U.S. Patent No. 9,479,472 ("the '472 Patent"), entitled LOCAL MESSAGE QUEUE PROCESSING FOR CO-LOCATED WORKERS, which issued on October 25, 2016. A copy of the '472 Patent is attached as Exhibit 3.

39.   The '472 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

40.   Defendant has been and is now infringing one or more claims of the '472 Patent under 35 U.S.C. § 271 by making, using, selling, and offering to sell AlibabaMQ for Apache RocketMQ in the United States without authority.

41.   Claim 1 of the '472 Patent recites:

1. A method to locally process queue requests from co-located workers in a datacenter, the method comprising:

detecting a producer worker at a first server, wherein the producer worker sends a message to a datacenter queue at least partially stored at a second server;

storing the message in a queue cache at the first server;

detecting a consumer worker at the first server, wherein the consumer worker sends a message request to the datacenter queue; and

providing the message to the consumer worker in response to the message request.

42.   More particularly, Defendant infringes at least claim 1 of the '472 Patent.

43   On information and belief, Defendant makes, uses, sells, and offers to sell AlibabaMQ for Apache RocketMQ, which practices a method to locally process queue requests from co-located workers in a datacenter.

44.   On information and belief, AlibabaMQ for Apache RocketMQ practices detecting a producer worker (e.g. Producer cluster) at a first server (e.g. the first server), wherein the producer worker (e.g. Producer cluster) sending a first message to a datacenter queue (e.g. RocketMQ queue) at least partially stored at a second server (e.g. RocketMQ server).

45.   On information and belief, AlibabaMQ for Apache RocketMQ practices storing the first message in a queue cache at the first server wherein the queue cache includes one of a copy and a partial copy of the datacenter queue. Further, on information and belief, the first server with the producer cluster stores the message in a queue cache.

46.   On information and belief, AlibabaMQ for Apache RocketMQ practices detecting a consumer worker (e.g., Consumer group) at the first server, wherein the consumer worker (e.g., Consumer group) sends a message request (e.g. request messages from the queue) to the datacenter queue (e.g. RocketMQ queue).

47.   On information and belief, AlibabaMQ for Apache RocketMQ practices providing the stored first message to the consumer worker (e.g., Consumer group) in response to the message request (e.g. request messages from the queue).

COUNT IV (Infringement of U.S. Patent No. 9,635,134)

48.   Invincible incorporates the above paragraphs as though fully set forth herein.

49.   Plaintiff is the owner, by assignment, of U.S. Patent No. 9,635,134 ("the '134 Patent"), entitled RESOURCE MANAGEMENT IN A CLOUD COMPUTING ENVIRONMENT, which issued on April 25, 2017. A copy of the '134 Patent is attached as Exhibit 4.

50.   The '134 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

51.   Defendant has been and is now infringing one or more claims of the '134 Patent under 35 U.S.C. § 271 by making, using, selling, and offering to sell Alibaba Cloud Auto-Scaling in the United States without authority.

52.   Claim 1 of the '134 Patent recites:

> 1. A method to manage resources in a cloud computing environment, comprising:
>
> determining a consumption rate of cloud resources by one or more virtual machines (VMs), the determining based on monitoring at least one of processor usage, memory usage, or input/output (I/O) access rates for the one or more virtual machines in the cloud computing environment;
>
> prioritizing the one or more VMs for consumption of the cloud resources using a first resource management scheme based, at least in part, on the determined consumption rate;
>
> determining whether a change in the consumption rate of the cloud resources exceeds a predetermined threshold, the change in the consumption rate including a change in the at least one of processor usage, memory usage, I/O access rates, or a change region size based on changed regions of a graphical display generated by the one or more VMs;

prioritizing the one or more VMs for consumption of the cloud resources using a second resource management scheme based, at least in part, on a maximum capacity for utilization of allowed cloud resources for the cloud computing environment and whether the determined change in the consumption rate of the cloud resources exceeds the predetermined threshold; and

migrating the consumption of the cloud resources to alternate cloud resources located outside of the cloud computing environment for at least one of the one or more VMs based, at least in part, on the one or more VMs prioritized for consumption of the cloud resources using the second resource management scheme.

53.   More particularly, Defendant infringes at least claim 1 of the '134 Patent.

54.   Defendant makes, uses, sells, and offers to sell Alibaba Cloud Auto-Scaling, which provides a method to manage resources in a cloud computing environment (e.g., Alibaba Cloud provides monitoring and performance metrics and manages resources in the Alibaba cloud computing environment.)

55.   On information and belief, Alibaba Cloud Auto-Scaling determines a consumption rate (e.g., CPU the instance is currently consuming, etc.) of cloud resources (e.g., CPU and memory) by one or more virtual machines (e.g., VMs), the determining based on monitoring at least one of processor usage (e.g., CPU usage), memory usage, or input/output (I/O) access rates for the one or more virtual machines in the cloud computing environment (e.g., the origin host where the VMs are located).

56.   On information and belief, Alibaba Cloud Auto-Scaling prioritizes the one or more VMs for consumption of the cloud resources (e.g., CPU usage, etc.) using a first resource management scheme (e.g., calculation for CPU demand) based, at least in part, on the determined consumption rate (e.g., CPU currently used).

57.   On information and belief, Alibaba Cloud Auto-Scaling determines whether a change in the consumption rate of the cloud resources exceeds a predetermined threshold (e.g., a

preset metric target value), the change in the consumption rate including a change in the at least one of processor usage, memory usage, I/O access rates, or a change region size based on changed regions of a graphical display generated by the one or more VMs.

58.   On information and belief, Alibaba Cloud Auto-Scaling prioritizes the one or more VMs for consumption of the cloud resources (e.g., prioritizes one or more VMs that would reduce the imbalance the most) using a second resource management scheme (e.g., Rebalance, Maximum capacity of instances in the group, etc.) based, at least in part, on a maximum capacity for utilization of allowed cloud resources for the cloud computing environment (e.g., the preset Max capacity, etc.) and whether the determined change in the consumption rate of the cloud resources exceeds the predetermined threshold (e.g., whether the change in the consumption rate of the cloud resources causes a load imbalance, the maximum capacity of instances, etc.).

59.   On information and belief, Alibaba Cloud Auto-Scaling migrates the consumption of the cloud resources to alternate cloud resources located outside of the cloud computing environment (e.g., destination host where the VMs are migrated to, to different ECS instances, etc.) for at least one of the one or more VMs based, at least in part, on the one or more VMs prioritized for consumption of the cloud resources using the second resource management scheme (e.g., Rebalance, Maximum capacity of instances in the group, etc.).

60.   Plaintiff has been damaged by Defendant's infringing activities.

COUNT V (Infringement of U.S. Patent No. 9,678,774)

61.   Invincible incorporates the above paragraphs as though fully set forth herein.

62.   Plaintiff is the owner, by assignment, of U.S. Patent No. 9,678,774 ("the '774 Patent"), entitled SECURE MIGRATION OF VIRTUAL MACHINES, which issued on June 13, 2017. A copy of the '774 Patent is attached as Exhibit 5.

63.   The '774 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

64.   Defendant has been and is now infringing one or more claims of the '774 Patent under 35 U.S.C. § 271 by making, using, selling, and offering to sell Alibaba Cloud – 'Elastic Compute Service' in the United States without authority.

65.   Claim 1 of the '774 Patent recites:

1. A method, comprising:

receiving, at a computing device, a request to migrate a virtual machine from a source host to a target host;

determining, via a hidden process, whether a geographic location of the target host is within a particular perimeter, wherein the hidden process is executable by the virtual machine;

in response to a determination that the geographic location of the target host is within the particular perimeter, allowing, via the hidden process, a migration of the virtual machine from the source host to the target host; and

in response to a determination that the geographic location of the target host is outside of the particular perimeter, denying, via the hidden process, the migration of the virtual machine from the source host to the target host.

66.   More particularly, Defendant infringes at least claim 1 of the '774 Patent.

67.   Defendant makes, uses, sells, and offers to sell Alibaba Cloud – 'Elastic Compute Service', which utilizes a method (e.g., a method for Elastic Compute Service or ECSs).

68.   On information and belief, Alibaba Cloud – 'Elastic Compute Service' utilizes receiving, at a computing device, a request to migrate a virtual machine (e.g., ECS instance) from a source host to a target host. For example, on information and belief, Migrating ECS instance is a process wherein a request is received to migrate a virtual machine (ECS instance) from a source host to a target host.

69.   On information and belief, Alibaba Cloud – 'Elastic Compute Service' utilizes determining, via a hidden process, whether a geographic location of the target host is within a particular perimeter (e.g., a perimeter of Alibaba cloud data center region or zone), wherein the hidden process is executable by the virtual machine. For example, on information and belief, Alibaba Cloud – 'Elastic Compute Service' utilizes evaluating wherein it evaluates whether the source host and target host are in the same region for migration.

70.   On information and belief, Alibaba Cloud – 'Elastic Compute Service' discloses that in response to a determination that the geographic location of the target host is within the particular perimeter (e.g., a perimeter of Alibaba cloud data center region or zone), allowing, via the hidden process, a migration of the virtual machine from the source host to the target host. For example, on information and belief, Alibaba Cloud – 'Elastic Compute Service' utilizes evaluating wherein it evaluates whether the source host and target host are in the same region for successful migration.

71.   On information and belief, Alibaba Cloud – 'Elastic Compute Service' discloses that in response to a determination that the geographic location of the target host is outside of the particular perimeter (e.g., a perimeter of Alibaba cloud data center region or zone), denying, via the hidden process, the migration of the virtual machine from the source host to the target host. For example, on information and belief, Alibaba Cloud – 'Elastic Compute Service' utilizes evaluating wherein it evaluates whether the source host and target host are in the same region for successful migration—and a user could not migrate a virtual machine to a target host in another region because the network might become unstable.

72.   Plaintiff has been damaged by Defendant's infringing activities.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests the Court enter judgment against Defendant:

1.   declaring that Defendant has infringed the '634 Patent;

2.   awarding Plaintiff its damages suffered as a result of Defendant's infringement of the '634 Patent;

3.   declaring that Defendant has infringed the '993 Patent;

4.   awarding Plaintiff its damages suffered as a result of Defendant's infringement of the '993 Patent;

5.   declaring that Defendant has infringed the '472 Patent;

6.   awarding Plaintiff its damages suffered as a result of Defendant's infringement of the '472 Patent;

7.   declaring that Defendant has infringed the '134 Patent;

8.   awarding Plaintiff its damages suffered as a result of Defendant's infringement of the '134 Patent;

9.   declaring that Defendant has infringed the '774 Patent;

10.   awarding Plaintiff its damages suffered as a result of Defendant's infringement of the '774 Patent;

11.   awarding Plaintiff its costs, attorneys' fees, expenses, and interest; and

12.   granting Plaintiff such further relief as the Court finds appropriate.

JURY DEMAND

Plaintiff demands trial by jury, Under Fed. R. Civ. P. 38.

Dated: June 30, 2021

Respectfully submitted,

 /s/ David W. deBruin
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