UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
MIDLAND/ODESSA DIVISION

VIRTAMOVE, CORP., Plaintiff, v. AMAZON.COM, INC.; AMAZON.COM SERVICES LLC; AND AMAZON WEB SERVICES, INC., Defendants.	Case No. 7:24-cv-00030-DC-DTG **JURY TRIAL DEMANDED**

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT AGAINST AMAZON.COM, INC.; AMAZON.COM SERVICES LLC; AND AMAZON WEB SERVICES, INC.

This is an action for patent infringement arising under the Patent Laws of the United States of America, 35 U.S.C. § 1 *et seq.*, in which Plaintiff VirtaMove Corp. (collectively, "Plaintiff" or "VirtaMove") makes the following allegations against Defendants Amazon.com, Inc.; Amazon.com Services LLC; and Amazon Web Services, Inc. (collectively, "Defendant" or "Amazon"):

INTRODUCTION AND PARTIES

1. This complaint arises from Defendant's unlawful infringement of the following United States patents owned by VirtaMove, each of which generally relate to novel containerization systems and methods: United States Patent Nos. 7,519,814 and 7,784,058 (collectively, the "Asserted Patents"). VirtaMove owns all right, title, and interest in each of the Asserted Patents to file this case.

2. VirtaMove, Corp. is a is a corporation organized and existing under the laws of

Canada, having its place of business at 110 Didsbury Road, M083, Ottawa, Ontario K2T 0C2. VirtaMove is formerly known as Appzero Software Corp. ("Appzero"), which was established in 2010.

3. VirtaMove is an innovator and pioneer in containerization. At a high level, a container is a portable computing environment. It can hold everything an application needs to run to move it from development to testing to production smoothly. Containerization lowers software and operational costs, using far fewer resources. It provides greater scalability (for example, compared to virtual machines). It provides a lightweight and fast infrastructure to run updates and make changes. It also encapsulates the entire code with its dependencies, libraries, and configuration files, effectively removing errors that can result from traditional configurations.

4. For years, VirtaMove has helped customers repackage, migrate and refactor thousands of important, custom, and packaged Windows Server, Unix Sun Solaris, & Linux applications to modern, secure operating systems, without recoding. VirtaMove's mission is to move and modernize the world's server applications to make organizations more successful and secure. VirtaMove has helped companies from many industries achieve modernization success.

5. The use of containerization has been growing rapidly. For instance, one source predicted the application containers market to reach $2.1 billion in 2019 and $4.3 billion in 2022—a compound annual growth rate ("CAGR") of 30%. *See, e.g.*, https://digiworld.news/news/56020/application-containers-market-to-reach-43-billion-by-2022. Another source reported the application containers market had a market size of $5.45 billion in 2024 and estimated it to reach $19.41 billion in 2029—a CAGR of 28.89%. *See, e.g.*, https://www.mordorintelligence.com/industry-reports/application-container-market.

6. Defendant Amazon.com, Inc. is a Delaware corporation with a listed registered

agent of Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808. Amazon has a principal place of business at 410 Terry Ave. North, Seattle, Washington 98109-5210. Amazon may also be served with process via its registered agent Corporation Service Company 300 Deschutes Way SW Ste 208 MC-CSC1, Tumwater, WA, 98501.

7. Defendant Amazon.com Services LLC (formerly "Amazon.com Services Inc." and referred to herein as "Amazon Services") is a limited liability company organized under the laws of the state of Delaware, with its principal place of business at 410 Terry Avenue North, Seattle, Washington 98109. Amazon Services is a wholly owned subsidiary of Amazon. Amazon Services is registered to do business in the State of Texas and may be served with process via its registered agent in Texas, Corporation Service Company dba CSC-Lawyers Incorporating Service Company at 211 7th Street, Suite 620, Austin, TX 78701-3218. Amazon Services may also be served via its Delaware registered agent Corporation Service Company, 251 Little Falls Dr., Wilmington, Delaware 19808.

8. Amazon Web Services, Inc. is a Delaware corporation with its principal place of business at 410 Terry Ave. North, Seattle, Washington 98109. Amazon Web Services, Inc. may be served through its registered agent Corporation Service Company, 211 E. 7th Street, Suite 620, Austin, Texas 78701. On information and belief, Amazon Web Services, Inc. is registered to do business in the State of Texas and has been since at least May 3, 2006. On information and belief, Amazon Web Services, LLC is a wholly-owned subsidiary of Amazon.com, Inc.

JURISDICTION AND VENUE

9. This action arises under the patent laws of the United States, Title 35 of the United States Code. This Court has original subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

10. This Court has personal jurisdiction over Defendant in this action because Defendant has committed acts within this District giving rise to this action, and has established minimum contacts with this forum such that the exercise of jurisdiction over Defendant would not offend traditional notions of fair play and substantial justice. Defendant, directly and through subsidiaries or intermediaries, has committed and continue to commit acts of infringement in this District by, among other things, importing, offering to sell, and selling products that infringe the asserted patents.

11. Venue is proper in this District. For example, Amazon has a regular and established place of business, including, e.g., at Amazon Tech Hub located at 11501 Alterra Parkway, Austin, Texas.

12. Greg O'Connor and other representatives of VirtaMove repeatedly met with Amazon Web Services, Inc. representatives regarding Appzero. Meetings occurred in at least late 2009, 2012-2015, and 2018-2021. During these meetings, VirtaMove demonstrated its Appzero and its technology for legacy app migration and containerization to Amazon Web Services, Inc. Amazon Web Services, Inc. discussed potential partnership with, engagement with, and/or investment in VirtaMove. Amazon Web Services, Inc. would have learned of the Asserted Patents during this time frame, either through disclosure during the meetings, its own due diligence when considering investment, and/or notice through Virtamove's website. *See, e.g.* https://web.archive.org/web/20230924012816/https:/virtamove.com/about-us/product-patents (listing both Asserted Patents before September 24, 2023); https://virtamove.com/about-us/product-patents (listing both Asserted Patents); https://virtamove.com/blog/virtamove-awarded-a-new-os-upleveling-patent (announcing '058 Patent); https://virtamove.com/migration-software/v-migrate ("VirtaMove's patented software"); https://virtamove.com/blog/containers-

are-not-a-windows-server-migration-panacea; https://virtamove.com/blog/virtamove-announces-beta-version-v-migrate-for-linux-container-migrations ("VirtaMove's patented software . . . moves them with ease"). Defendants did not end up engaging with, partnering with, or investing in VirtaMove. Instead, Defendants misappropriated Virtamove's technology and willfully commit the infringement and inducement alleged herein.

COUNT I

INFRINGEMENT OF U.S. PATENT NO. 7,519,814

13. VirtaMove realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein. In Count I only, "Defendant" refers to Amazon Web Services, Inc.

14. VirtaMove owns all rights, title, and interest in U.S. Patent No. 7,519,814 ('814 patent), titled "System for Containerization of Application Sets," issued on April 14, 2009. A true and correct copy of the '814 Patent is attached as Exhibit **1.**

15. On information and belief, Defendant makes, uses, offers for sale, sells, and/or imports certain products ("Accused Products"), such as, e.g., Amazon's AWS End-of-Support Migration Program ("EMP"), that directly infringe, literally and/or under the doctrine of equivalents, claims of the '814 patent, for example:

> AWS EMP for Windows Server enables application migration from legacy Windows Server systems to supported Windows operating systems. The EMP process includes an assessment of your application and testing requirements, packaging of the application and its dependencies on the legacy operating system based on your requirements, and migration to an AWS environment running a supported Windows Server version. When migrated to the new server environment, the application will run on the new OS as it would on the legacy operating system. The new package redirects application requests and does not include installation of any part of the legacy operating system.
>
> 2. The application accesses data stored in a fixed location that is not available on the new OS version: the EMP engine redirects these requests to the appropriate location on the new version of the operating system.
>
> The resulting package includes everything that the application needs to run on a modern operating system, including application files, runtimes, components, and deployment tools. The package does not include the legacy operating system, which means you never run any part of the legacy Windows Server version on the new Windows Server to which the application is upgraded.

The configuration of a package is defined in a series of XML files, which includes:

- Configurations for Registry keys and values (AppRegistry.xml)
- File, Registry, and Network redirections (Redirections.xml)
- File Type Associations (FileAssociations.xml)
- Shortcuts (Shortcuts.xml)
- Executable programs (Programs.xml)
- Environment Variables (EnvironmentVariables.xml)

The package additionally includes a redirection engine that intercepts the API calls that the application makes to the underlying Windows Server OS, and redirects them to the files and registry within the created package. Therefore, the application always requests resources from within the package rather than from the new Windows Server OS, so that the application runs successfully on the new OS.

4.1.1 Application and Runtime Isolation

Applications with conflicting requirements or outdated run times can safely run by being isolated from other applications on the server. Isolation enables EMP compatibility packages to include runtimes that conflict with other runtimes on the server, so that they are used only by the packaged application. Examples of conflicting requirements might include use of Java 1.3, .Net 2.0, and msxml.dll.

4.3.1 Application to Operating System Compatibility

EMP software runs legacy applications within a compatibility package on modern, up-to-date operating systems. The EMP compatibility package does not contain any parts of the legacy operating system. Instead, it intercepts the operating system requests and redirects and resolves them against the up-to-date host operating environment.

The EMP compatibility package permits the legacy application to run alongside other applications and/or other versions of the same application. For example, multiple versions of Microsoft Office can run simultaneously on the target operating system, or two incompatible 32-bit applications can run together, isolated from each other by the EMP compatibility package.

4.3.3 Services and Drivers

EMP Compatibility packages support Windows Services out of the box. Drivers aren't captured in an EMP package but can be extracted and deployed locally using the EMP deployment script feature, as long as they are compatible with the target operating system.

https://d1.awsstatic.com/windows/AWS_EMP_WindowsServer_Whitepaper_V2.1.pdf.

16. The infringement of the Asserted Patents is also attributable to Defendant. Defendant and/or users of the Accused Products directs and controls use of the Accused Products

to perform acts that result in infringement the Asserted Patents, conditioning benefits on participation in the infringement and establishing the timing and manner of the infringement.

17. Defendant's infringement has been and is willful for the reasons alleged above. Additionally, Defendant knew of VirtaMove, its products, and at least one of the patents long before this suit was filed and at least as early as 2013. For example, on or about October 2013, in connection with the prosecution of U.S. Patent No. 8,806,655 (assigned to Amazon's patent holding entity despite *de facto* invention by Defendant's employees), the examiner cited the '814 Patent against Amazon. On or about June 2020, in connection with the prosecution of U.S. Patent No. 11,061,812 (assigned to Amazon), the examiner cited U.S. Pub. No. 2005/0060722 (which issued as the '814 Patent) against Amazon. Defendant knew, or should have known, that its conduct amounted to infringement of the '814 patent. Accordingly, Defendant is liable for willful infringement.

18. Defendant also knowingly and intentionally induces infringement of claims of the '814 patent in violation of 35 U.S.C. § 271(b). Defendant has had knowledge of the '814 patent and the infringing nature of the Accused Products at least as early as when this Complaint was filed and/or earlier, as set forth above. Despite this knowledge of the '814 patent, Defendant continues to actively encourage and instruct its customers and end users (for example, through user manuals and online instruction materials on its website) to use the Accused Products in ways that directly infringe the '814 patent. Defendant does so knowing and intending that its customers and end users will commit these infringing acts. Defendant also continues to make, use, offer for sale, sell, and/or import the Accused Products, despite its knowledge of the '814 patent, thereby specifically intending for and inducing its customers to infringe the '814 patent through the customers' normal and customary use of the Accused Products.

19. Defendant has also infringed, and continue to infringe, claims of the ’814 patent by offering to commercially distribute, commercially distributing, making, and/or importing the Accused Products, which are used in practicing the process, or using the systems, of the patent, and constitute a material part of the invention. Defendant knows the components in the Accused Products to be especially made or especially adapted for use in infringement of the patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. Accordingly, Defendant has been, and currently are, contributorily infringing the ’814 patent, in violation of 35 U.S.C. § 271(c).

20. The Accused Products satisfy all claim limitations of claims of the ’814 patent. A claim chart comparing an independent claim of the ’814 patent to a representative Accused Product, is attached as Exhibit **2**, which is hereby incorporated by reference in its entirety.

21. By making, using, offering for sale, selling and/or importing into the United States the Accused Products, Defendant has injured VirtaMove and is liable for infringement of the ’814 patent pursuant to 35 U.S.C. § 271.

22. As a result of Defendant’s infringement of the ’814 patent, VirtaMove is entitled to monetary damages in an amount adequate to compensate for Defendant’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court. Plaintiff has complied with 35 U.S.C. § 287 through the assertion of method claims, pre-suit marking, and/or actual knowledge by Defendant.

COUNT II

INFRINGEMENT OF U.S. PATENT NO. 7,784,058

23. VirtaMove realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

24. VirtaMove owns all rights, title, and interest in U.S. Patent No. 7,784,058 ('058 patent), titled "Computing System Having User Mode Critical System Elements as Shared Libraries," issued on August 24, 2010. A true and correct copy of the '058 patent is attached as Exhibit **3**.

25. On information and belief, Amazon Web Services, Inc. makes, uses, offers for sale, sells, and/or imports certain products ("Accused Products"), such as, e.g., Amazon's AWS Elastic Container Service ("ECS"), that directly infringe, literally and/or under the doctrine of equivalents, claims of the '058 patent, for example:

Amazon ECS supports using 64-bit ARM applications. You can run your applications on the platform that's powered by AWS Graviton2 processors,. It's suitable for a wide variety of workloads. This includes workloads such as application servers, micro-services, high-performance computing, CPU-based machine learning inference, video encoding, electronic design automation, gaming, open-source databases, and in-memory caches.

An Amazon ECS container instance is an Amazon EC2 instance that is running the Amazon ECS container agent and has been registered into an Amazon ECS cluster. When you run tasks with Amazon ECS using the EC2 launch type or an Auto Scaling group capacity provider, your tasks are placed on your active container instances.

Note

Tasks using the Fargate launch type are deployed onto infrastructure managed by AWS, so this topic does not apply.

You can use EC2 instances with the following Linux operating systems to run your applications:

- Amazon Linux: This is a general purpose operating system.
- Bottlerocket: Bottlerocket is a Linux based open-source operating system that is purpose built by AWS for running containers on virtual machines or bare metal hosts. The Amazon ECS-optimized Bottlerocket AMI is secure and only includes the minimum number of packages that's required to run containers. This improves resource usage, reduces security attack surface, and helps lower management overhead. For information about the security features and guidance, see Security Features and Security Guidance on the GitHub website.

An Amazon ECS container instance specification consists of the following components:

Required

- A Linux distribution running at least version 3.10 of the Linux kernel.

- The Amazon ECS container agent (preferably the latest version). For more information, see Updating the Amazon ECS container agent.

You must architect your applications so that they can run on *containers*. A container is a standardized unit of software development that holds everything that your software application requires to run. This includes relevant code, runtime, system tools, and system libraries. Containers are created from a read-only template that's called an *image*. Images are typically built from a Dockerfile. A Dockerfile is a plaintext file that specifies all of the components that are included in the container. After they're built, these images are stored in a *registry* such as Amazon ECR where they can be downloaded from.

Amazon ECS uses Docker images in task definitions to launch containers. Docker is a technology that provides the tools for you to build, run, test, and deploy distributed applications in containers. Docker provides a walkthrough on deploying containers on Amazon ECS. For more information, see Docker Compose CLI - Amazon ECS.

https://d1.awsstatic.com/windows/AWS_EMP_WindowsServer_Whitepaper_V2.1.pdf.

26. The infringement of the Asserted Patents is also attributable to Defendant. Amazon.com Services LLC is believed to be responsible for Amazon Prime Video. Amazon.com, Inc. is believed to have an "Amazon Devices & Services" division that is responsible for the Amazon Fire Stick. Amazon Prime Video and the Fire Stick are reported to use ECS sold or offered by Amazon Web Services, Inc.

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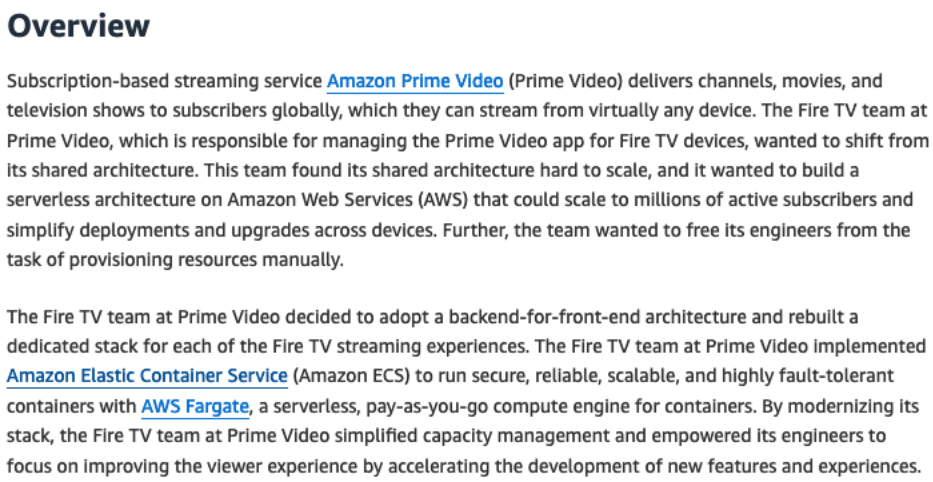
2023

prime video

Fire TV at Amazon Prime Video Modernizes Its Stack Using Amazon ECS with AWS Fargate

Learn how the Fire TV team at Amazon Prime Video improves engineering productivity and drives innovation by using Amazon ECS with AWS Fargate.

Overview | Opportunity | Solution | Outcome | AWS Services Used | Architecture Diagram



Overview

Subscription-based streaming service Amazon Prime Video (Prime Video) delivers channels, movies, and television shows to subscribers globally, which they can stream from virtually any device. The Fire TV team at Prime Video, which is responsible for managing the Prime Video app for Fire TV devices, wanted to shift from its shared architecture. This team found its shared architecture hard to scale, and it wanted to build a serverless architecture on Amazon Web Services (AWS) that could scale to millions of active subscribers and simplify deployments and upgrades across devices. Further, the team wanted to free its engineers from the task of provisioning resources manually.

The Fire TV team at Prime Video decided to adopt a backend-for-front-end architecture and rebuilt a dedicated stack for each of the Fire TV streaming experiences. The Fire TV team at Prime Video implemented Amazon Elastic Container Service (Amazon ECS) to run secure, reliable, scalable, and highly fault-tolerant containers with AWS Fargate, a serverless, pay-as-you-go compute engine for containers. By modernizing its stack, the Fire TV team at Prime Video simplified capacity management and empowered its engineers to focus on improving the viewer experience by accelerating the development of new features and experiences.

https://aws.amazon.com/solutions/case-studies/amazon-prime-video-ecs-case-study.

27. Amazon.com, Inc. directs and controls Amazon.com Services LLC and Amazon Web Services, Inc., and they collectively form a joint enterprise marketed as "Amazon" to consumers. On information and belief, Amazon.com, Inc. exercises its direction and control as a parent company to cause Amazon.com Services LLC to offer Prime Video on the Fire Stick, and to use the ECS offerings of Amazon Web Services, Inc., such that Amazon.com, Inc. receives revenue from its subsidiaries and so that Amazon Web Services., Inc. and Amazon.com Services LLC receive corporate support, the use of the "Amazon" trademark, "Amazon" marketing, and other benefits. Defendant and/or users of the Accused Products directs and controls use of the Accused Products to perform acts that result in infringement the Asserted Patents, conditioning benefits on participation in the infringement and establishing the timing and manner of the infringement.

28. Defendant also knowingly and intentionally induces infringement of claims of the '058 patent in violation of 35 U.S.C. § 271(b) for the reasons alleged above. Additionally, Defendant has had knowledge of the '058 patent and the infringing nature of the Accused Products at least as early as when this Complaint was filed. Despite this knowledge of the '058 patent,

Defendant continues to actively encourage and instruct its customers and end users (for example, through user manuals and online instruction materials on its website) to use the Accused Products in ways that directly infringe the '058 patent. Defendant does so knowing and intending that its customers and end users will commit these infringing acts. Defendant also continues to make, use, offer for sale, sell, and/or import the Accused Products, despite its knowledge of the '058 patent, thereby specifically intending for and inducing its customers to infringe the '058 patent through the customers' normal and customary use of the Accused Products.

29. Defendant has also infringed, and continue to infringe, claims of the '058 patent by offering to commercially distribute, commercially distributing, making, and/or importing the Accused Products, which are used in practicing the process, or using the systems, of the patent, and constitute a material part of the invention. Defendant knows the components in the Accused Products to be especially made or especially adapted for use in infringement of the patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. Accordingly, Defendant has been, and currently are, contributorily infringing the '058 patent, in violation of 35 U.S.C. § 271(c).

30. The Accused Products satisfy all claim limitations of claims of the '058 patent. A claim chart comparing an independent claim of the '058 patent to a representative Accused Product, is attached as Exhibit **4**, which is hereby incorporated by reference in its entirety.

31. By making, using, offering for sale, selling and/or importing into the United States the Accused Products, Defendant has injured VirtaMove and are liable for infringement of the '058 patent pursuant to 35 U.S.C. § 271.

32. As a result of Defendant's infringement of the '058 patent, VirtaMove is entitled to monetary damages in an amount adequate to compensate for Defendant's infringement, but in no

event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court. Plaintiff has complied with 35 U.S.C. § 287 through pre-suit marking and/or actual knowledge by Defendants.

PRAYER FOR RELIEF

WHEREFORE, VirtaMove respectfully requests that this Court enter:

a. A judgment in favor of VirtaMove that Defendant has infringed, either literally and/or under the doctrine of equivalents, each of the Asserted Patents;

b. A judgment in favor of Plaintiff that Defendant has willfully infringed the ’814 patent;

c. A permanent injunction prohibiting Defendant from further acts of infringement of each of the ’814 and ’058 patents;

d. A judgment and order requiring Defendant to pay VirtaMove its damages, costs, expenses, and pre-judgment and post-judgment interest for Defendant’s infringement of each of the Asserted Patents;

e. A judgment and order requiring Defendant to provide an accounting and to pay supplemental damages to VirtaMove, including without limitation, pre-judgment and post-judgment interest;

f. A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to VirtaMove its reasonable attorneys’ fees against Defendant; and

g. Any and all other relief as the Court may deem appropriate and just under the circumstances.

DEMAND FOR JURY TRIAL

VirtaMove, under Rule 38 of the Federal Rules of Civil Procedure, requests a trial by jury of any issues so triable by right.

Dated: May 3, 2024

Respectfully submitted,

/s/ Reza Mirzaie

Reza Mirzaie (CA SBN 246953)
rmirzaie@raklaw.com
Marc A. Fenster (CA SBN 181067)
mfenster@raklaw.com
Neil A. Rubin (CA SBN 250761)
nrubin@raklaw.com
Amy E. Hayden (CA SBN 287026)
ahayden@raklaw.com
Christian W. Conkle (CA SBN 306374)
cconkle@raklaw.com
Jonathan Ma (CA SBN 312773)
jma@raklaw.com

RUSS AUGUST & KABAT
12424 Wilshire Boulevard, 12th Floor
Los Angeles, CA 90025
Telephone: (310) 826-7474

Qi (Peter) Tong (TX SBN 24119042)
ptong@raklaw.com

RUSS AUGUST & KABAT
4925 Greenville Ave, Suite 200
Dallas, TX 75206

Attorneys for Plaintiff VirtaMove, Corp.

CERTIFICATE OF SERVICE

I certify that on May 3, 2024, a true and correct copy of the foregoing document was electronically filed with the Court and served on all parties of record via the Court's CM/ECF system.

/s/ Reza Mirzaie
Reza Mirzaie