IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

ANCORA TECHNOLOGIES, INC. Plaintiff, v. NINTENDO CO., LTD., and RETRO STUDIOS, INC. Defendants.	Civil Action No. 6:21-cv-738 Jury Trial Requested

COMPLAINT FOR PATENT INFRINGEMENT

This is an action for patent infringement in which Ancora Technologies, Inc. makes the following allegations against Nintendo Co., Ltd., and Retro Studios, Inc. (collectively "Nintendo"):

RELATED CASE

1. This case is related to the actions *Ancora Technologies, Inc. v. Roku, Inc.* (W.D. Tex. Jul. 16, 2021); *Ancora Technologies Inc. v. Google, LLC* (W.D. Tex. Jul. 16, 2021); and *Ancora Technologies Inc. v. Vizio, Inc.* (W.D. Tex. Jul. 16, 2021)—each of which was filed on July 16, 2021, in the United States District Court for the Western District of Texas, Waco Division, asserting infringement of United States Patent No. 6,411,941.

PARTIES

2. Plaintiff Ancora Technologies, Inc. is a corporation organized and existing under the laws of the State of Delaware with a place of business at 23977 S.E. 10th Street, Sammamish, Washington 98075.

3. Defendant Nintendo Co., Ltd. ("NCL") is a corporation organized and existing under the laws of Japan with a principal place of business at 11-1 Hokotate-cho, Kamitoba, Minami-ku, Kyoto 601-8501, Japan.

4. Defendant Retro Studios, Inc. ("Retro Studios") is a corporation organized and existing under the laws of the State of Texas with a principal place of business at 12345 N Lamar Blvd #300, Austin, TX 78753. Retro Studios is wholly owned by NCL, and is a game development studio that designs games for Nintendo hardware systems, such as Donkey Kong Country: Tropical Freeze. Retro Studios and has designed or worked on games for at least the Wii, Nintendo 3DS, and Switch systems. *See* https://www.retrostudios.com/games/; *Motion Games, LLC v. Nintendo Co. Ltd.* ("*Motion Games*"), No. 6:12-cv-00878, ECF No. 33-1 (Declaration of Michael Kelbaugh, President and CEO of Retro Studios, Inc. ("Kelbaugh Decl.")) ¶¶1-2 (E.D. Tex. Mar. 4, 2013).

5. NCL approves games that Retro Studio develops and submits to NCL for approval. *See* Kelbaugh Decl. ¶¶2-3. Retro Studios does not participate in or assist with any decision making about whether to manufacture a particular game. *See id.* On information and belief, Retro worked closely with NCL in ensuring the successful integration of Retro Studios' software into the final products sold to customers in the United States, including in the Western District of Texas.

JURISDICTION AND VENUE

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

7. This Court also has personal jurisdiction over NCL and Retro Games. For example, Retro Games maintain a regular and established place of business in the Western District of Texas, including at 12345 N Lamar Blvd #300, Austin, TX 78753.

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8. Further, on information and belief, NCL directs and control the actions of Retro Games such that NCL also maintain places of business in Texas, including at 12345 N Lamar Blvd #300, Austin, TX 78753.

9. For example, NCL has exerted its authority to speak for Retro Studios, as when NCL and its wholly owned subsidiary, Nintendo of America, Inc., determined that they would provide a "Nintendo[] witness . . . to testify on Retro's behalf" for purposes of a third-party subpoena for testimony under Federal Rule of Civil Procedure 46. *See SyncPoint Imaging, LLC v. Nintendo of America, Inc.*, No. 1:15-mc-00768-SS, ECF No. 1 (Non-Party Retro Studios, Inc.'s Opposed Motion to Quash) at 4 (W.D. Tex., Aug. 31, 2015); *see id.* at 2 ("Nintendo will be providing testimony regarding its relationship with Retro and Retro's lack of connection to the Eastern District of Texas.").

10. In addition, directly or through intermediaries, NCL and Retro Games have committed acts within the Western District of Texas giving rise to this action and/or have established minimum contacts with the Western District of Texas such that the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice.

11. For example, NCL has placed or contributed to placing infringing products like the Nintendo Switch, Wii console, and Nintendo 3DS into the stream of commerce via an established distribution channel knowing or understanding that such products would be sold and used in the United States, including in the Western District of Texas.

12. As another example, Nintendo admitted that NCL has "'designed, manufacture[d], and import[ed]' the accused products," including at least the Wii console and Nintendo 3DS, into the United States. *Motion Games, LLC v. Nintendo Co. Ltd.* ("*Motion Games*"), No. 6:12-cv-00878,

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ECF No. 33 (Retro Studios, Inc., Mot. to Dismiss for Improper Venue ("*Motion Games* Mot. to Dismiss") at 12 (E.D. Tex. Mar. 4, 2013).

13. As another example, NCL has testified that NCL is responsible for the "design and development" of the Accused Products, including the Wii console and the Nintendo 3DS, the "software" for such Accused Products, the "manufacture" of such Accused Products, and the "business activities" for such Accused Products "related to finance; the design, development and testing of Nintendo Products . . . ; contracts and agreements; human resources; marketing; advertising; and the results of surveys, studies and evaluations":

> 4. NCL's Integrated Research & Development Division was mainly responsible for the design and development of the Wii console and the Nintendo 3DS system. The Integrated Research & Development Division employs approximately two hundred fifty six (256) people. NCL's employees are also responsible for the design and testing of the Wii console and Nintendo 3DS system, as well as for the development of all Nintendo hardware systems and all Nintendo software for the Wii console and the Nintendo 3DS system. Those activities were primarily performed at Nintendo's headquarters in Kyoto, Japan. NCL also coordinates the

> manufacture of the Wii console, Wii games, and Wii accessories, as well as the Nintendo 3DS system, Nintendo 3DS games, and Nintendo 3DS accessories.

> 5. Documents related to the business activities of NCL are located in Kyoto, Japan. These include documents related to finance; the design, development and testing of Nintendo products, including such documents for the Wii console and Nintendo 3DS system, Nintendo controllers and games, and Nintendo accessories; contracts and agreements; human resources; marketing; advertising; and the results of surveys, studies and evaluations.

Motion Games, No. 6:12-cv-00878, ECF No. 34-30 (Declaration of Toshiro Hibino) at 1-2 (E.D. Tex. Mar. 4, 2013).

14. As another example, Nintendo directs and controls the development of software for the Accused Products, *id.*, and—on information and belief—the distribution of system software updates for the Accused Products, including the Nintendo Switch, Wii console, and Nintendo 3DS.

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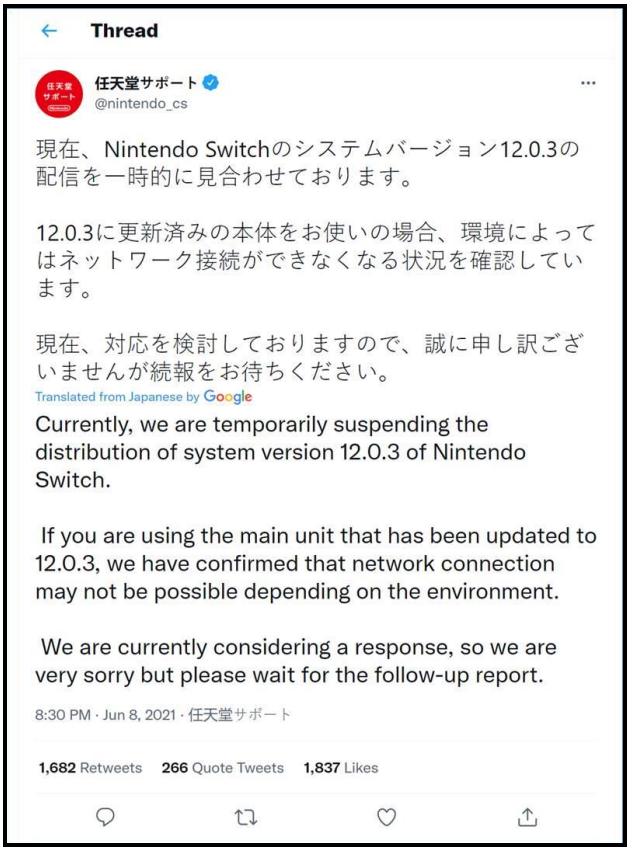
NCL sends or causes to be sent such system software updates knowing that they will be distributed to Accused Products in the Western District of Texas:



https://twitter.com/nintendo_cs/status/1402468144430518276;

https://twitter.com/nintendo_cs/status/1379227688087392257.

任天堂サポート
@nintendo_cs

現在、Nintendo Switchなどのネットワークサービス全般で障害が発生しています。申し訳ございませんが、復旧までしばらくお待ちください。

Translated from Japanese by Google

Currently, there are failures in all network services such as Nintendo Switch. We apologize for the inconvenience, but please wait for a while until the restoration.

ネットワーク メンテナンス情報・稼働状況 | 任天堂
任天堂の各ネットワークサービスの現在の障害状況とメンテナンス情報をお知らせします。
nintendo.co.jp

4:46 PM · May 9, 2020 · 任天堂サポート

5,865 Retweets **545** Quote Tweets **3,813** Likes

https://twitter.com/nintendo_cs/status/1259268601225179137.

Major changes due to the update to 11.14.0-46J

[New Nintendo 3DS / New 3DS LL / New 2DS LL / 3DS / 3DS LL / 2DS]

- Improved system stability and convenience

Some functions are added / corrected only by updating by network download.
The game card update does not include some changes.

For updates of main unit functions before this, Nintendo 3DS system version change historyPlease refer to the.

please note

Update the main unit when the main unit is in a normal state.

- If you modify the main unit or use peripheral devices or software that Nintendo does not support , updating the main unit may cause the main unit to stop working.
- If there is save data created by a method other than normal usage, or data that Nintendo does not support, it may cause a malfunction and you may not be able to use it with confidence. , Such data etc. may be removed automatically.

Operation is not guaranteed if it is used in the above abnormal conditions. In addition, it is not covered by repair or warranty.

In addition, the main unit purchased overseas may have been modified to the local specifications even if it is described as Japanese domestic specifications. Please note that if you update the specifications in Japan, problems may occur or the system may not start.

https://www.nintendo.co.jp/support/3ds/system_update/index.html.

15. Further, on information and belief, Nintendo also has derived substantial revenues from infringing acts in the Western District of Texas, including from the sale and use of infringing products like the Nintendo Switch.

16. Further, on information and belief, Nintendo maintained a system of 28,000 WiFi hotspots or relay points throughout North America, which are referred to as "Nintendo Zones," including Nintendo Zone hotspots in the Western District of Texas, such as the Austin–Bergstrom International Airport. Nintendo provided or directed and controlled the provision of WiFi terminals to provide its users with no-cost access to the internet in order to make use of Nintendo game consoles and games. On information and belief, prior to the expiration of the '941 Patent, Nintendo used Nintendo Zones to send or cause to be sent software updates to Nintendo consoles.

17. In addition, venue is proper under 28 U.S.C. § 1391(b)-(c) and 28 U.S.C. § 1400 as Nintendo maintains a regular and established place of business in the Western District of Texas, including at least at 12345 N Lamar Blvd #300, Austin, TX 78753. *In re HTC Corp.*, 889 F.3d 1349, 1354 (Fed. Cir. 2018); *In re Cray Inc.*, 871 F.3d 1355, 1362-63 (Fed. Cir. 2017).

THE ASSERTED PATENT

18. This lawsuit asserts causes of action for infringement of United States Patent No. 6,411,941 ("the '941 Patent"), which is entitled "Method of Restricting Software Operation Within a License Limitation."

19. The U.S. Patent and Trademark Office duly and legally issued the '941 Patent on June 25, 2002.

20. Subsequent to issue, and at least by December 21, 2004, all right, title, and interest in the '941 Patent, including the sole right to sue for any infringement, were assigned to Ancora Technologies, Inc., which has held, and continues to hold, all right, title, and interest in the '941 Patent.

21. The president of Ancora Technologies, Inc.—Mr. Miki Mullor—is one of the inventors of the '941 Patent.

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22. A reexamination certificate to the ’941 Patent subsequently was issued on June 1, 2010.

23. Since being assigned to Ancora Technologies, Inc., the ’941 Patent has been asserted in patent infringement actions filed against Microsoft Corporation, Dell Incorporated, Hewlett Packard Incorporated, Toshiba America Information Systems, Apple Inc., HTC America, Inc., HTC Corporation, Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., LG Electronics, Inc., LG Electronics U.S.A., Inc., Sony Mobile Communications AB, Sony Mobile Communications, Inc., Sony Mobile Communications (USA) Inc., Lenovo Group Ltd., Lenovo (United States) Inc., Motorola Mobility, LLC, TCT Mobile (US) Inc., and Huizhou TCL Mobile Communication Co., Ltd.

24. In the course of these litigations, a number of the ’941 Patent’s claim terms have been construed, and the validity of the ’941 Patent has been affirmed repeatedly.

25. For example, in December 2012, the United States District Court for the Northern District of California issued a claim construction order construing the terms (1) “volatile memory”; (2) “non-volatile memory”; (3) “BIOS”; (4) “program”; (5) “license record”; and (6) “verifying the program using at least the verification structure.” *Ancora Techs., Inc. v. Apple Inc.*, No. 11–CV–06357 YGR, 2012 WL 6738761, at *1 (N.D. Cal. Dec. 31, 2012).

26. Further, the court rejected Apple’s indefiniteness arguments and further held that, at least with respect to Claims 1-3 and 5-17, “[t]he steps of the Claim do not need to be performed in the order recited.” *Ancora Techs., Inc. v. Apple Inc.*, No. 11–CV–06357 YGR, 2012 WL 6738761, at *5, *13 (N.D. Cal. Dec. 31, 2012).

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27. Subsequently, the United States Court of Appeals for the Federal Circuit affirmed the district court's rejection of Apple's indefiniteness argument. *Ancora Techs., Inc. v. Apple, Inc.*, 744 F.3d 732, 739 (Fed. Cir. 2014).

28. The Federal Circuit also agreed with Ancora Technologies, Inc. that "the district court erred in construing 'program' to mean 'a set of instructions for software applications that can be executed by a computer'"—holding that, as Ancora had argued, the term should be accorded its normal meaning of "'a set of instructions' for a computer." *Ancora Techs., Inc. v. Apple, Inc.*, 744 F.3d 732, 734-35, 737 (Fed. Cir. 2014).

29. Subsequently, in a more recent decision, the Federal Circuit held that the '941 Patent satisfied § 101 as a matter of law—stating: "[W]e conclude that claim 1 of the '941 patent is not directed to an abstract idea." *Ancora Techs., Inc. v. HTC Am., Inc.*, 908 F.3d 1343 (Fed. Cir. 2018), *as amended* (Nov. 20, 2018).

30. In addition, the Patent Trial and Appeal Board rejected HTC's request to institute covered business method review proceedings on the '941 Patent—explaining that "the '941 [P]atent's solution to the addressed problem is rooted in technology, and thus, is a 'technical solution'" and also rejecting HTC's argument that "the '941 [P]atent recites a technological solution that is not novel and nonobvious."

31. This Court likewise issued a claim construction order construing or adopting the plain and ordinary meaning of various claims of the '941 Patent, including (1) "non-volatile memory"; (2) "license"; (3) "license record"; (4) "volatile memory"; (5) "BIOS"; (6) "memory of the BIOS"; (7) "program"; (8) "selecting a program residing in the volatile memory"; (9) "using an agent to set up a verification structure in the erasable, non-volatile memory of the BIOS"; (10) "set up a verification structure"; (11) "verifying the program using at least the verification structure"; (12) "acting on the

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program according to the verification"; (13) "first non-volatile memory area of the computer"; (14) the Claim 1 preamble; and (15) the order of Claim 1 steps. *Ancora Technologies, Inc. v. LG Electronics, Inc.*, 1:20-cv-00034-ADA, at Dkt. 69 (W.D Tex. June 2, 2020).

32. Finally, and most recently, the United States District Court for the Central District of California issued a claim construction order construing the terms (1) "volatile memory"; (2) "selecting a program residing in the volatile memory"; (3) "set up a verification structure"; (4) "license record"; (5) "memory of the BIOS"; and (6) the whole of Claim 8. *Ancora Techs., Inc v. TCT Mobile (US), Inc., et al.*, No. 8:19-cv-02192-GW-AS, ECF No. 66 & 69 (C.D. Cal. Nov. 18-19, 2020).

COUNT 1 – INFRINGEMENT

33. Plaintiff repeats and incorporates by reference each preceding paragraph as if fully set forth herein and further state:

34. Nintendo has infringed the '941 Patent in violation of 35 U.S.C. § 271(a) by, prior to the expiration of the '941 Patent, selling, and/or offering for sale in the United States, and/or importing into the United States, without authorization, products and/or operating system and game software for products that are capable of performing at least Claim 1 of the '941 Patent literally or under the doctrine of equivalents and, without authorization, then causing such products to perform each step of at least Claim 1 of the '941 Patent.

35. At a minimum, such Accused Products include those servers/software utilized by Nintendo to transmit an over-the-air ("OTA") software update, as well as those gaming consoles, game controllers, and other devices and technology that included Nintendo's operating system software and game software and to which Nintendo sent or had sent an OTA update that caused such device to perform the method recited in Claim 1 prior to the expiration of the '941 Patent.

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36. Such Accused Products include products like the Nintendo Switch, which—as detailed below—Nintendo configured such that it would be capable of performing each step of Claim 1 of the ’941 Patent and subsequently provided one or more OTA updates that caused the device to perform each step of Claim 1.[1]

37. Such Accused Products also include products like the Nintendo 3DS, Nintendo 3DS XL, Nintendo 2DS, New Nintendo 3DS XL, New Nintendo 2DS XL, Wii U, Wii Remote, Wii U Pro Controller, Balance Board, Nintendo Switch Joy Con, Nintendo Switch Joy Con Wheel, Nintendo Labo Toy-Con 04, GameCube Controller, and Nintendo Pro Controller, as well as any predecessor models to such devices, to which Nintendo sent, or had sent, an OTA update prior to the expiration of the ’941 Patent.

38. For example, Claim 1 of the ’941 Patent claims “a method of restricting software operation within a license for use with a computer including an erasable, non-volatile memory area of a BIOS of the computer, and a volatile memory area; the method comprising the steps of: [1] selecting a program residing in the volatile memory, [2] using an agent to set up a verification structure in the erasable, non-volatile memory of the BIOS, the verification structure accommodating data that includes at least one license record, [3] verifying the program using at least the verification structure from the erasable non-volatile memory of the BIOS, and [4] acting on the program according to the verification.”

39. When Nintendo transmitted an OTA update like its Nintendo Switch Version 2 updates, Nintendo performed and/or caused devices like the Nintendo Switch to perform each element of Claim 1 as part of its Nintendo-specified, pre-configured software update process:

[1] This description of infringement is illustrative and not intended to be an exhaustive or limiting explanation of every manner in which each Accused Product infringes the ’941 patent. Further, on information and belief, the identified functionality of the Nintendo Switch is representative of components and functionality present in all Accused Products.

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Nintendo Switch System Updates and Change History

Applies to: Nintendo Switch Family, Nintendo Switch, Nintendo Switch Lite

Nintendo constantly aims to improve the functionality of its systems and services in order to provide the easiest, most user-friendly experience possible. As a part of these efforts, we are making Nintendo Switch system updates available for download via the Internet.

https://en-americas-support.nintendo.com/app/answers/detail/a_id/22525/~/nintendo-switch-system-updates-and-change-history.

40. In particular, each Nintendo Switch contains both erasable, non-volatile memory in the form of flash memory and volatile memory in the form of RAM memory.

53. The console's data as well as the game data—whether stored on the Nintendo Switch's built-in flash memory or on a removable flash memory card inserted into the console—is also encrypted with a key unique to each Nintendo Switch console.

See Nintendo of Am. Inc. v. Does 1-20, No. 2:20-cv-00738-TSZ, ECF No. 1 (Complaint) ¶53 (W.D. Wa. Mar. 15, 2020).

41. Such non-volatile memory includes memory that is associated with Nintendo BIOS firmware and used by the Nintendo BIOS as part of its normal operations, which—on information and belief—is an example of BIOS memory:

41. NOA owns numerous registered copyrights related to Nintendo video games, characters, BIOS firmware for Nintendo video game systems, Nintendo musical compositions and audio recordings. These include without limitation the

See Nintendo of Am. Inc. v. Storman, No. 2:19-CV-07818, ECF No. 1 (Complaint) ¶41 (C.D. Cal. Sept. 10, 2019).

42. Various third parties have also reported such functionality:

BootROM

The bootrom initializes two keyslots in the hardware engine:

- the SBK (Secure Boot Key) in keyslot 14
- the SSK (Secure Storage Key) in keyslot 15.

Reads from both of these keyslots are disabled by the bootROM. The SBK is stored in FUSE_PRIVATE_KEY, which are locked to read out only FFs after the bootrom finishes.

SBK is **unique** per console, and not shared among consoles as originally believed.

The SSK is derived on boot via the SBK, the 32-bit console-unique "Device Key", and hardware information stored in fuses.

https://switchbrew.org/wiki/Cryptosystem.

Key table

[1.0.0-3.0.2] During package1ldr:

Keyslot	Name	Set by	Per-console	Per-firmware
11	Package1Key	Package1ldr	No	Yes
14	SecureBootKey	Bootrom	Yes	No
15	SecureStorageKey	Bootrom	Yes	No

[1.0.0-3.0.2] After package1ldr:

Keyslot	Name	Set by	Per-console	Per-firmware
12	MasterKey	Package1ldr	No	Yes, on security updates
13	PerConsoleKey	Package1ldr	Yes	No

[4.0.0+] After package1ldr (Secure Monitor boot):

Keyslot	Name	Set by	Per-console	Per-firmware
12	MasterKey	Package1ldr	No	Yes, on security updates
13	PerConsoleKeyForFirmwareSpecificPerConsoleKeyGen	Package1ldr	Yes	No
14	StaticKeyForFirmwareSpecificPerConsoleKeyGen	Package1ldr	No	Yes, on security updates
15	PerConsoleKey	Package1ldr	Yes	No

[4.0.0+] After package1ldr (Secure Monitor runtime):

Keyslot	Name	Set by	Per-console	Per-firmware
12	MasterKey	Package1ldr	No	Yes, on security updates
13	FirmwareSpecificPerConsoleKey	Secure Monitor init	Yes	Yes, on security updates
15	PerConsoleKey	Package1ldr	Yes	No

[6.2.0+] After package1ldr/TSEC Payload (Secure Monitor boot):

Keyslot	Name	Set by	Per-console	Per-firmware
12	TsecKey	Package1ldr TSEC Firmware	Yes	No
13	TsecRootKey	Package1ldr TSEC Firmware	No	Unknown
14	SecureBootKey	Bootrom	Yes	No
15	SecureStorageKey	Bootrom	Yes	No

https://switchbrew.org/wiki/Cryptosystem.

After package1ldr does its initialization, it then jumps to the bootloader within PK11, called NX-Bootloader, which in turn loads and launches the Horizon OS main kernel and modules. When the boot server process has initialized, it triggers a command in the process manager (pm), causing it to load and launch the boot2 server, which is the first non-built-in system server. For the sake of simplicity, it is shown in the figure below that boot launches boot2 directly. boot2 then takes care of launching all the system servers; one of which, Nintendo Shell (ns), launches the main front-facing user menu, qlaunch.

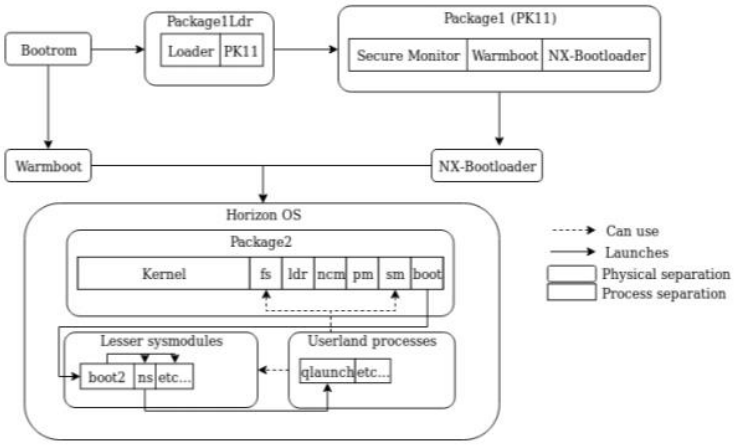

Fig. 4. Nintendo Switch boot flow

https://arxiv.org/pdf/1905.07643.pdf.

43. Further, as detailed above, each Nintendo Switch was configured by Nintendo to repeatedly check to see if a new software update was available, including through the following method:

Nintendo Switch Family

How to Update Software

Applies to: Nintendo Switch Family, Nintendo Switch, Nintendo Switch Lite

In this article, you'll learn how to automatically or manually update software on Nintendo Switch.

Note

- When the Nintendo Switch console is connected online, if a software update is available you will be prompted to download it upon starting the game or application.
- Software updates can be either automatically or manually downloaded and installed.

https://en-americas-support.nintendo.com/app/answers/detail/a_id/22767/~/how-to-update-software.

Performing the system update

In most situations, the Nintendo Switch will automatically download the most recent system update while it is connected online. You can verify your current menu version and manually start the update from the System Settings menu if necessary.

https://en-americas-support.nintendo.com/app/answers/detail/a_id/22525/~/nintendo-switch-system-updates-and-change-history.

44. During this process, one or more OTA servers owned or controlled by Nintendo set up a verification structure in the erasable, non-volatile memory of the BIOS of the Nintendo Switch by transmitting to the device an OTA update, which the Nintendo Switch is configured by Nintendo to save to the erasable, non-volatile memory of its BIOS.

54. In addition, when the Nintendo Switch attempts to connect with Nintendo's servers (which happens when a user attempts to play online, to purchase games, or to download updates), those servers will check the console certificate. Users are only able to access Nintendo's online services if this check is successful. Nintendo also has the capability of banning specific user accounts or specific consoles from Nintendo's networks, should its authentication measures detect unauthorized use.

See Nintendo of Am. Inc. v. Does 1-20, No. 2:20-cv-00738-TSZ, ECF No. 1 (Complaint) ¶54 (W.D. Wa. Mar. 15, 2020).

45. This OTA update contains a verification structure that includes data accommodating at least one license record.

46. Examples of such a license record includes what is known as an "encrypted identifier" or "signature" as well as a "key unique to each Nintendo Switch console." For example, as Nintendo has admitted in other litigation:

> 52. For example, each Nintendo Switch contains an encrypted identifier, or "signature," that is checked when the console boots. The operating system itself also contains Technological Measures designed to ensure the operating system is authorized. Only if the operating system Technological Measures, including the encrypted signatures, are confirmed as authentic—thus proving the console and operating system are authorized by Nintendo—will the Nintendo Switch start up normally.
>
> 53. The console's data as well as the game data—whether stored on the Nintendo Switch's built-in flash memory or on a removable flash memory card inserted into the console—is also encrypted with a key unique to each Nintendo Switch console.
>
> 54. In addition, when the Nintendo Switch attempts to connect with Nintendo's servers (which happens when a user attempts to play online, to purchase games, or to download updates), those servers will check the console certificate. Users are only able to access Nintendo's online services if this check is successful. Nintendo also has the capability of banning specific user accounts or specific consoles from Nintendo's networks, should its authentication measures detect unauthorized use.

See Nintendo of Am. Inc. v. Does 1-20, No. 2:20-cv-00738-TSZ, ECF No. 1 (Complaint) ¶¶52-54 (W.D. Wa. Mar. 15, 2020).

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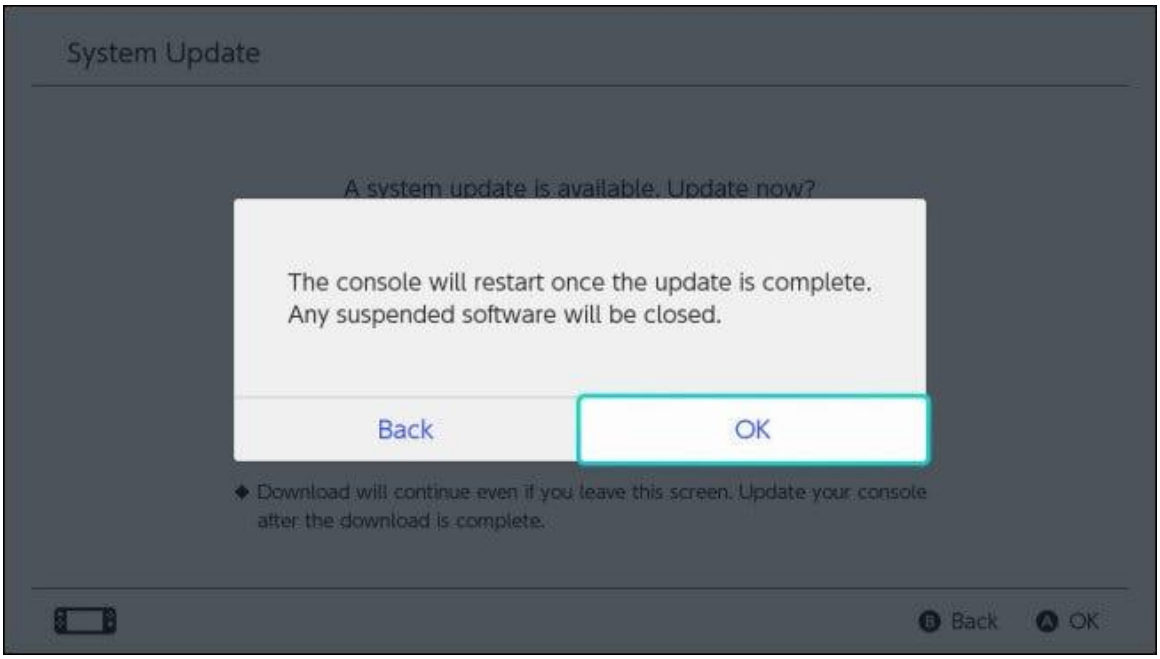
47. Once the verification structure has been set up in the BIOS, the Nintendo Switch is configured by Nintendo to reboot, load the OTA update into its volatile memory (e.g., RAM), and then use the at least one license record from the BIOS to verify the OTA update as part of its secure boot process:



https://www.howtogeek.com/671251/how-to-update-your-nintendo-switch/.

48. For example, as Nintendo has admitted in other litigation:

> 52. For example, each Nintendo Switch contains an encrypted identifier, or "signature," that is checked when the console boots. The operating system itself also contains Technological Measures designed to ensure the operating system is authorized. Only if the operating system Technological Measures, including the encrypted signatures, are confirmed as authentic—thus proving the console and operating system are authorized by Nintendo—will the Nintendo Switch start up normally.

Nintendo of Am. Inc. v. Does 1-20, No. 2:20-cv-00738-TSZ, ECF No. 1 (Complaint) ¶52 (W.D. Wa. Mar. 15, 2020).

49. Various third parties also have reported such functionality:

> ## Package1
>
> Present in the firmware package titles (0100000000000819, 010000000000081A, 010000000000081B and 010000000000081C) and installed into eMMC storage's boot partitions 0 and 1, "package1" contains the first Switch bootloader ("Package1ldr") to run under the NVIDIA boot processor (an ARM7TDMI called "BPMP", "BPMP-Lite", "AVP" or "COP"), as well as the actual encrypted package1 ("PK11") blob containing the second Switch Bootloader and TrustZone code.
>
> The boot ROM validates, copies to IRAM and executes this package by parsing it's information block from the BCT.

https://switchbrew.org/wiki/Package1.

> The CCPLEX is a somewhat recent ARM processor, which means it is capable of a feature that ARM calls TrustZone. For those unfamiliar with the concept, TrustZone is a hardware-enforced virtualized system-separated enclave on the processor, used to isolate security-critical parts of the operating system as much as possible (in the case of the Nintendo Switch, its internal cryptographic engine). This introduces a notion of "Secure World" and "Normal World", both running their own OS and having their own separate resources. For example, the Secure World has its own secure RAM space, "TZRAM".

https://arxiv.org/pdf/1905.07643.pdf.

> *C. Ignition, Switch*
>
> Beginning the boot flow, the BPMP of the SoC powers up, launching its bootrom. This bootrom, depending on the state of PMC registers, either performs a warmboot and loads from existing state in DRAM, or loads and verifies package1, and jumps to package1ldr. In that case, package1ldr takes care of decrypting and verifying PK11. Package1, containing package1ldr and PK11 are stored in the first eMMC boot partition, and PK11 contains the warmboot binary, NX-Bootloader, and the secure monitor firmware. The warmboot binary is what is saved to DRAM by the secure monitor when entering the deep-sleep state.

https://arxiv.org/pdf/1905.07643.pdf.

50. If the OTA update is verified, the Nintendo Switch is further configured to load and execute the update.

51. Further, during the infringing time period, Nintendo performed or caused to be performed each of the Claim 1 steps identified above by providing an OTA update to each Accused Product: https://en-americas-support.nintendo.com/app/answers/detail/a_id/43314; https://en-americas-support.nintendo.com/app/answers/detail/a_id/1436/~/system-menu-update-history; https://en-americas-support.nintendo.com/app/answers/detail/a_id/231/~/system-menu-update-history.

52. In addition, during the infringing time period, Nintendo performed or caused to be performed each of the Claim 1 steps identified above by providing a software update to games running on each accused product, such as Donkey Kong Country: Tropical Freeze, developed by Retro Studios: https://en-americas-support.nintendo.com/app/answers/detail/a_id/29365/~/how-to-update-donkey-kong%3A-tropical-freeze-%28nintendo-switch%29; https://en-americas-support.nintendo.com/app/answers/detail/a_id/645/~/how-to-install-the-mario-kart-7-update; http://www.benoitren.be/switch-gamepatches.html; https://www.perfectly-nintendo.com/nintendo-updates/ .

53. For example, Nintendo employs encryption and signature checks similar to that of the Nintendo Switch's operating system described above for purposes of receiving OTA updates for Nintendo games like Donkey Kong Country: Tropical Freeze.

54. Further, as detailed above, each Nintendo Switch installed with Donkey Kong Country: Tropical Freeze was configured by Nintendo to repeatedly check to see if a new software update for Donkey Kong Country: Tropical Freeze was available, including through the following method:

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> How to Update Donkey Kong: Tropical Freeze (Nintendo Switch)
>
> **Applies to:** Nintendo Switch Family, Nintendo Switch, Nintendo Switch Lite
>
> In this article, you'll learn how to update Donkey Kong: Tropical Freeze on Nintendo Switch.
>
> On August 7, 2018 a new software update for Donkey Kong: Tropical Freeze (Nintendo Switch) became available for download. Please take a moment to download and install this update while your Nintendo Switch console is connected to the Internet.
>
> - This update must be applied in order to use the game's Internet features.
> - Save data will still be available for use after downloading the update.
> - If the system is connected to the Internet, the update will download and install automatically.

https://en-americas-support.nintendo.com/app/answers/detail/a_id/29365/kw/donkey/p/989/c/120.

55. For example, Nintendo employs encryption and signature checks similar to that of the Nintendo Switch's operating system described above for purposes of receiving OTA updates for Nintendo games like Donkey Kong Country: Tropical Freeze. For example, as Nintendo has admitted in other litigation:

> 55. In addition to the Technological Measures related to the console and the operating system, the Nintendo Switch also contains additional Technological Measures that verify each *game* played on the Nintendo Switch (the "Game TPMs"). The Game TPMs employ encryption and signature checks similar to that of the Nintendo Switch's operating system described above.

Nintendo of Am. Inc. v. Does 1-20, No. 2:20-cv-00738-TSZ, ECF No. 1 (Complaint) ¶52 (W.D. Wa. Mar. 15, 2020).

56. Further, Nintendo expressly conditions participation in the OTA update process and the receipt of the benefit of a software update on the performance of each of the above steps.

57. Primarily, as described above, Nintendo pre-configures/programs each Accused Product to perform the above described steps upon receiving an OTA update from Nintendo.

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58. Further, Nintendo not only set the time and conditions under which a user could receive and install an OTA update, but Nintendo required all users to accept and install such updates.

59. For example, Nintendo stated the following in its End User License Agreement for the Nintendo Switch:

> 2. **Updates.**
> The Console is constantly evolving, and we may update or change the Console, in whole or in part. Such updates or changes to all or a portion of the Console (an "Update" or "Updates") may be required for you to play games, enjoy features, software, data or content, or continue to access services available through the Console. Some of these Updates may be provided automatically without notice to you. You consent to Nintendo providing you with, and installing, automatic Updates to the Console in the background with or without notice to you. You agree that any Update is governed by this Agreement.
>
> After the Console is updated or changed (including without limitation in connection with an Update), any existing or future unauthorized modification of the Console or Software, or the use of an unauthorized device in connection with the Console, may render the Console and/or Software permanently unusable.

https://en-americas-support.nintendo.com/app/answers/detail/a_id/48058/kw/EULA.

60. Further, Nintendo emphasizes the benefits associated with updating the software of its Accused Products, including to allow users to "play games, enjoy features, software, data or content, or continue to access services available through the [Nintendo] Console," to "enhance the user's experience," and to add new functionality.

61. Nintendo also identified the specific benefits associated with each OTA update it provided: https://en-americas-support.nintendo.com/app/answers/detail/a_id/43314#v200.

62. Further, Nintendo controlled the manner in which each OTA update could be performed, including by pre-configuring each Accused Product such that, upon receiving an OTA update from Nintendo, the device would automatically perform each remaining step of the claimed method.

63. Nintendo also controlled the timing of the performance of such method by determining when to utilize its OTA servers/software to set up a verification structure in each Accused Product.

64. Nintendo also had the right and ability to stop or limit infringement simply by not performing the initial step of using its OTA servers/software to set up a verification structure in each Accused Product. Absent this action by Nintendo, the infringement at issue in this lawsuit would not have occurred.

65. Nintendo's infringement has caused damage to Ancora, and Ancora is entitled to recover from Nintendo those damages that Ancora has sustained as a result of Nintendo's infringement.

DEMAND FOR JURY TRIAL

66. Ancora hereby demands a jury trial for all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for judgment as follows:

A. Declaring that Nintendo has infringed United States Patent No. 6,411,941 in violation of 35 U.S.C. § 271;

B. Awarding damages to Ancora arising out of this infringement, including enhanced damages pursuant to 35 U.S.C. § 284 and prejudgment and post-judgment interest, in an amount according to proof;

C. Awarding such other costs and relief the Court deems just and proper, including any relief that the Court may deem appropriate under 35 U.S.C. § 285.

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Date: July 16, 2021

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