UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

LIONRA TECHNOLOGIES LIMITED, *Plaintiff,* v. HEWLETT PACKARD ENTERPRISE COMPANY; ARUBA NETWORKS, LLC, *Defendants*.	Case No. 2:22-cv-319 **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Lionra Technologies Limited ("Lionra") files this complaint against Defendants Hewlett Packard Enterprise Company ("HPE") and Aruba Networks, LLC ("Aruba") (collectively, "Defendants") alleging infringement of U.S. Patent Nos. 7,916,630 and 7,921,323 ("Patents-in-Suit"). The Accused Products are networking switches made, used, offered for sale, sold, imported by Defendants in the United States and supplied by Defendants to their customers and/or integrated into electronic devices sold in the United States.

Plaintiff Lionra and the Patents-in-Suit

1. Plaintiff Lionra is a technology licensing company organized under the laws of Ireland, with its headquarters at The Hyde Building, Suite 23, The Park, Carrickmines, Dublin 18, Ireland.

2. Lionra is the owner of U.S. Patent No. 7,916,630 entitled "Monitoring Condition of Network with Distributed Components," which issued March 29, 2011 (the "'630 patent"). A copy of the '630 patent is attached to this complaint as Exhibit 1.

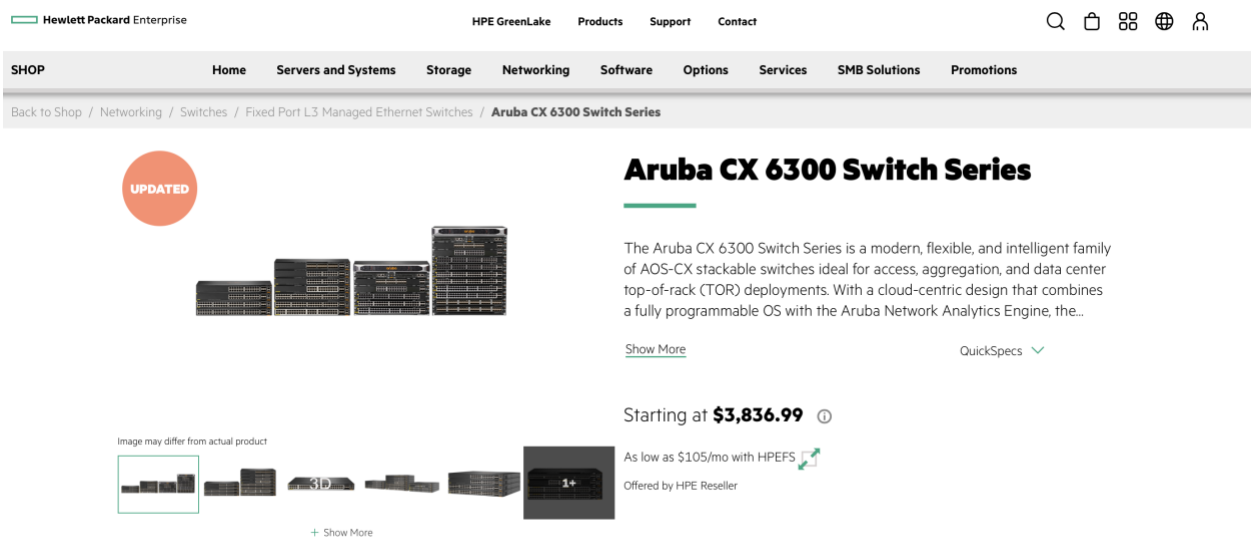
3. Lionra is the owner of U.S. Patent No. 7,921,323, entitled "Reconfigurable Communications Infrastructure for ASIC Networks," which issued April 5, 2011 (the "'323 patent"). A copy of the '323 patent is attached to this complaint as Exhibit 2.

4. On information and belief, Hewlett Packard Enterprise Company is a Delaware corporation with its principal place of business at 1701 E Mossy Oaks Road, Spring, Texas 77389. Hewlett Packard Enterprise Company may be served through its registered agent CT Corporation System, 1999 Bryan St., Ste. 900, Dallas, Texas 75201. Hewlett Packard Enterprise Company is registered to do business in the State of Texas and has been since at least March 13, 2015.

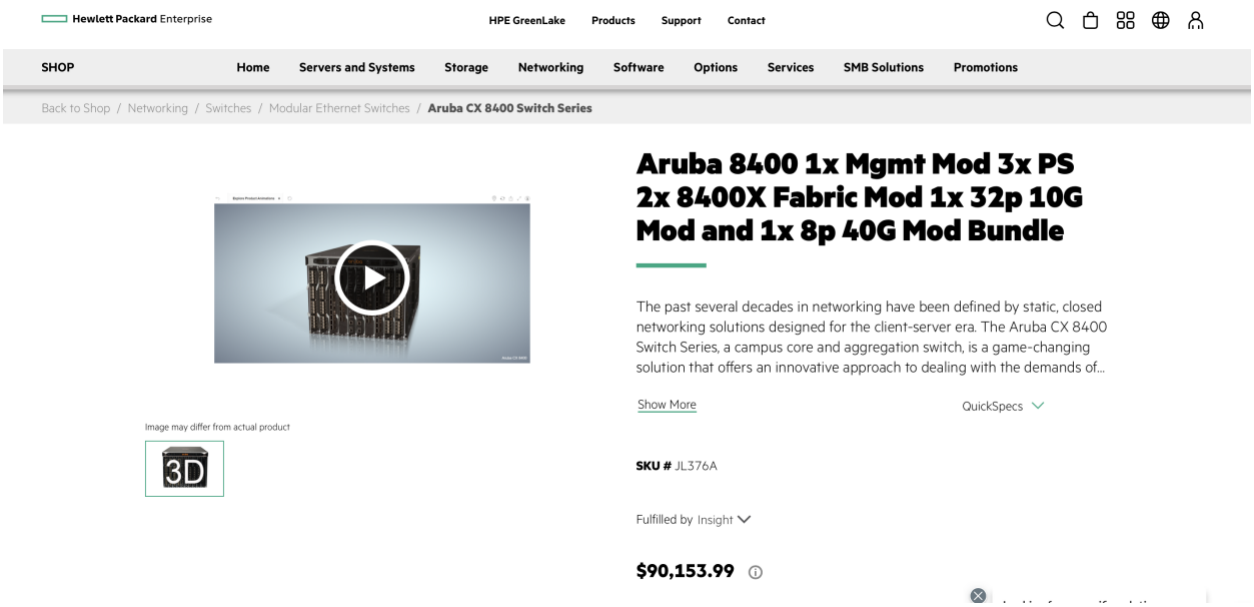
5. Aruba Networks, LLC is a Delaware corporation with its principal place of business at 6280 America Center Dr., San Jose, CA 95002. Aruba Networks, LLC may be served through its registered agent CT Corporation System, 1999 Bryan St., Ste. 900, Dallas, Texas 75201. Aruba Networks, LLC is registered to do business in the State of Texas and has been since at least April 4, 2007.

6. Aruba Networks, LLC is a wholly owned subsidiary of Defendant Hewlett Packard Enterprise Company. Defendants conduct business operations within the Eastern District of Texas where they sell, develop, and/or market their products, including facilities at 6080 Tennyson Parkway, Suite 400, Plano, Texas 75024. *See* https://www.hpe.com/us/en/contact-hpe.html.

7. The Accused Products include at least the Aruba CX 6300 and CX 8400 switch series. These products are marketed and sold by HPE through its website, HPE.com, among other places. *See* https://www.hpe.com/psnow/doc/a50002592enw?jumpid=in_hpesitesearch. *See also* https://buy.hpe.com/us/en/networking/switches/fixed-port-l3-managed-ethernet-switches/6000-switch-products/aruba-cx-6300-switch-series/p/1012138130:



See also **https://buy.hpe.com/us/en/networking/switches/modular-ethernet-switches/aruba-8400-switch-products/aruba-cx-8400-switch-series/p/1010129959:**



Jurisdiction and Venue

8. 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).

9. This Court has personal jurisdiction over Defendants in this action because, among other reasons, Defendants have committed acts within the Eastern District of Texas giving rise to this action and have established minimum contacts with the forum state of Texas. Defendants maintain a place of business within the State, including at 6080 Tennyson Parkway, Suite 400, Plano, Texas 75024. Defendants directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), have committed and continue to commit acts of infringement in this District by, among other things, making, using, importing, offering for sale, and/or selling products and/or services that infringe the patents-in-suit. Thus, Defendants purposefully availed themselves of the benefits of doing business in the State of Texas and the exercise of jurisdiction over Defendants would not offend traditional notions of fair play and substantial justice. Defendants are registered to do business in the State of Texas, and have appointed as their registered agent, CT Corporation System, at 1999 Bryan St., Ste. 900, Dallas, Texas 75201, for service of process.

10. Venue is proper in this district under 28 U.S.C. §1400(b) and 28 U.S.C. §§ 1391(c). Defendants have regular and established places of business in this district as set forth above.

Count 1 – Claim for infringement of the '630 patent.

11. Lionra incorporates by reference each of the allegations in paragraphs 1–10 above and further alleges as follows:

12. Lionra is the owner of U.S. Patent No. 7,916,630 entitled "Monitoring Condition of Network with Distributed Components," which issued March 29, 2011 (the "'630 patent"). A copy of the '630 patent is attached to this complaint as Exhibit 1.

13. On March 29, 2011, the United States Patent and Trademark Office issued U.S. Patent No. 7,916,630 entitled "Monitoring Condition of Network with Distributed Components." Ex. 1.

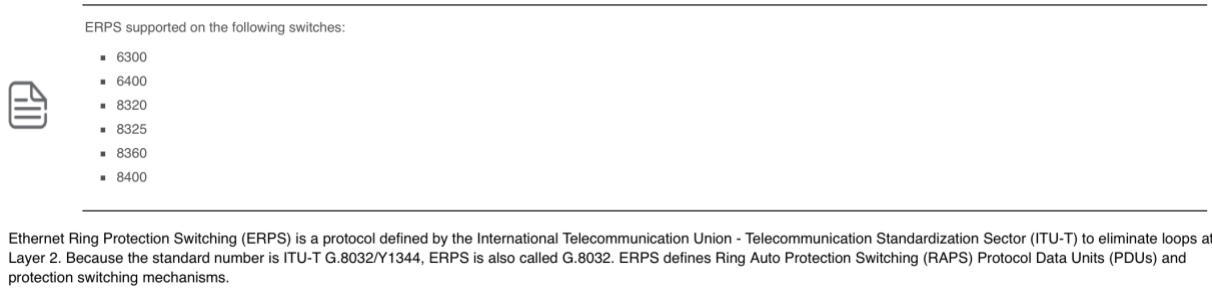
14. Lionra is the owner of the ’630 patent with full rights to pursue recovery of royalties for damages for infringement, including full rights to recover past and future damages.

15. Each claim of the ’630 patent is valid, enforceable, and patent-eligible.

16. Lionra and its predecessors in interest have satisfied the requirements of 35 U.S.C. § 287(a) with respect to the ’630 patent, and Lionra is entitled to damages for Defendants’ past infringement.

17. Defendants have directly infringed (literally and equivalently) and induced others to infringe the ’630 patent by making, using, selling, offering for sale, or importing products that infringe the claims of the ’630 patent and by inducing others to infringe the claims of the ’630 patent without a license or permission from Lionra. These products include without limitation, Defendants’ products, including at least the Aruba CX 6300 switch series, which infringes at least claim 1 of the ’630 patent.

18. On information and belief, whether or not the preamble is deemed limiting, the 6300 switch monitors the system condition of a ring network.



ERPS supported on the following switches:

- 6300
- 6400
- 8320
- 8325
- 8360
- 8400

Ethernet Ring Protection Switching (ERPS) is a protocol defined by the International Telecommunication Union - Telecommunication Standardization Sector (ITU-T) to eliminate loops at Layer 2. Because the standard number is ITU-T G.8032/Y1344, ERPS is also called G.8032. ERPS defines Ring Auto Protection Switching (RAPS) Protocol Data Units (PDUs) and protection switching mechanisms.

See https://www.arubanetworks.com/techdocs/AOS-CX/10.08/HTML/high_availability/Content/Chp_ERPS/erp-tit-onl.htm

Generally, redundant links are used on an Ethernet switching network such as a ring network to provide link backup and enhance network reliability. The use of redundant links, however, may result in creating network loops, causing broadcast storms, and rendering the MAC address table unstable. As a result, communication quality deteriorates, and communication services may even be interrupted.

Ethernet networks demand faster protection switching. STP does not meet the requirement for fast convergence.

ERPS, a standard ITU-T protocol, prevent loops on ring networks. It optimizes detection and performs fast convergence. ERPS allows all ERPS-capable devices on a ring network to communicate.

See https://www.arubanetworks.com/techdocs/AOS-CX/10.08/HTML/high_availability/Content/Chp_ERPS/erp-tit-onl.htm

19. On information and belief, each 6300 switch router organized in a ring structure monitors only a single respective neighboring component among said distributed components that is a predecessor or successor of said each component in the logical ring structure to determine a current condition of the respective neighboring component.

20. For example, in 6300, each ring port monitors the condition on only a predecessor or successor ring port connected via a ring link.

> As an example, the ring links of each Ethernet ring node may be monitored by individually exchanging continuity check messages (CCMs) defined in [ITU-T G.8013] on the maintenance entity group end points (MEPs) illustrated in Figure 9-3.

See Rec. ITU-T G.8032/Y.1344 (03/2020) at p. 9.

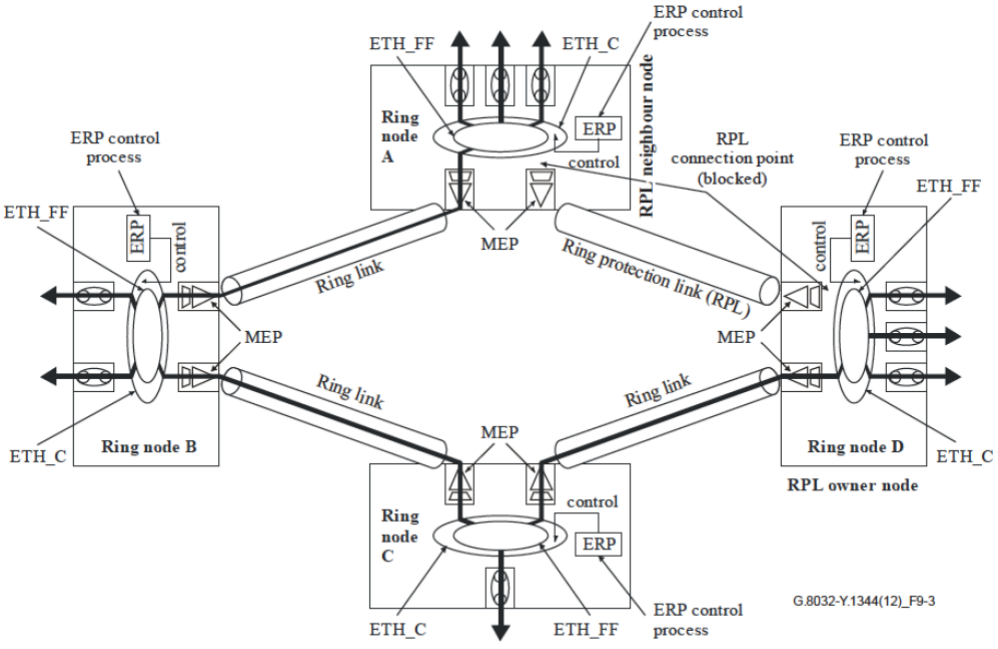


Figure 9-3 – MEPs in Ethernet ring protection switching architecture

See Rec. ITU-T G.8032/Y.1344 (03/2020) at p. 10.

21. On information and belief, Each HP 6300 switch router organized in a ring structure informs all other components of the system about the current condition of the respective

neighboring component when the current condition corresponds to at least one predefined condition.

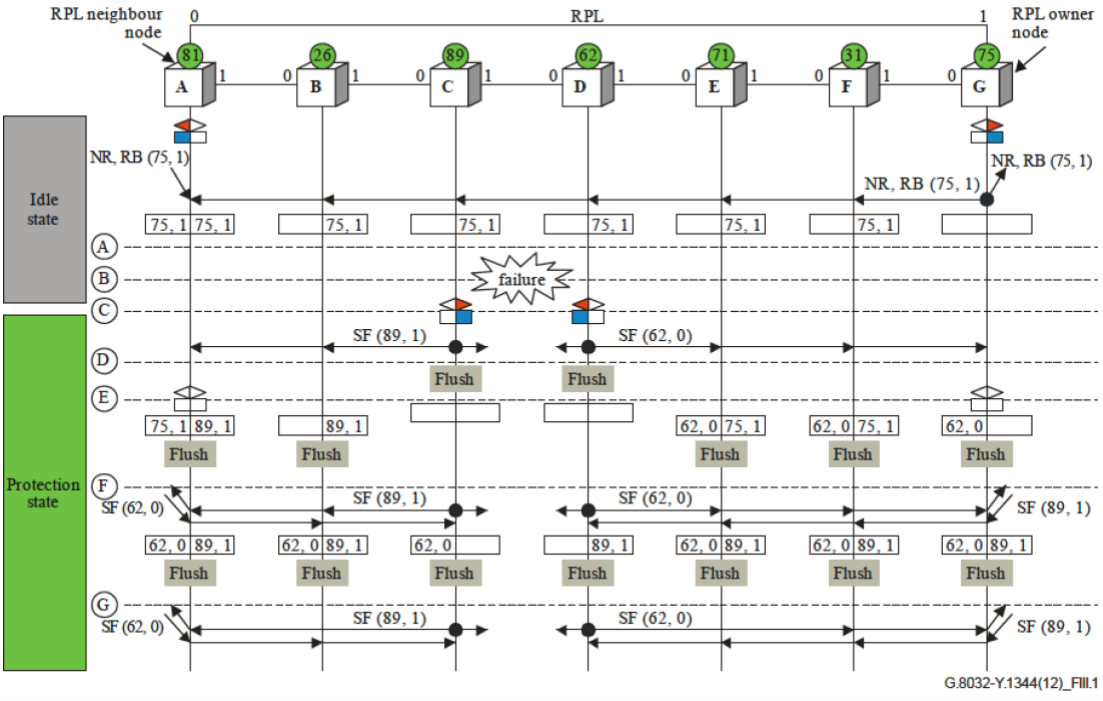
Ring protection switching occurs based on the detection of defects on the transport entity of each ring link. The defects are defined within the equipment Recommendation [ITU-T G.8021]. For the purpose of the protection switching process, a transport entity, within the protected domain, has a condition of either failed [i.e., signal fail (SF)] or non-failed (OK).

See Rec. ITU-T G.8032/Y.1344 (03/2020) at p. 6.

failure is recovered. A node failure situation is handled as the failure of both ring links of the Ethernet ring node. The two Ethernet ring nodes adjacent to the failed Ethernet ring node initiate protection switching by detecting the SF condition on ring links connected to the failed Ethernet ring node.

See Rec. ITU-T G.8032/Y.1344 (03/2020) at p. 38.

Figure III.1 represents protection switching in the case of a single link failure.



See Rec. ITU-T G.8032/Y.1344 (03/2020) at p. 50.

A. Normal condition.

B. Failure occurs.

C. Ethernet ring nodes C and D detect a local SF condition and after respecting the hold-off time, block the failed ring port and perform the FDB flush.

D. Ethernet ring nodes C and D start sending R-APS (SF) messages periodically with the (node ID, BPR) pair on both ring ports, while the SF condition persists.

E. All Ethernet ring nodes receiving an R-APS (SF) message perform an FDB flush. When the RPL owner node G and RPL neighbour node A receive an R-APS (SF) message, they each unblock their end of the RPL and perform the FDB flush.

See Rec. ITU-T G.8032/Y.1344 (03/2020) at p. 51.

Count 2 – Claim for infringement of the '323 patent.

22. Lionra incorporates by reference each of the allegations in paragraphs 1–21 above and further alleges as follows:

23. On October 2, 2013, the United States Patent and Trademark Office issued U.S. Patent No. 7,921,323, entitled "Reconfigurable Communications Infrastructure for ASIC Networks." Ex. 2.

24. Lionra is the owner of the '323 patent with full rights to pursue recovery of royalties for damages for infringement, including full rights to recover past and future damages.

25. Each claim of the '323 patent is valid, enforceable, and patent-eligible.

26. Lionra and its predecessors in interest have satisfied the requirements of 35 U.S.C. § 287(a) with respect to the '323 patent, and Lionra is entitled to damages for Defendants' past infringement.

27. Defendants have directly infringed (literally and equivalently) and induced others to infringe the '323 patent by making, using, selling, offering for sale, or importing products that infringe the claims of the '323 patent and by inducing others to infringe the claims of the '323 patent without a license or permission from Lionra. These products include without limitation Defendants' Aruba CX 8400 switch series, which infringes at least claim 27 of the '323 patent.

28. On information and belief, whether or not the preamble is limiting, the Aruba CX 8400 switch series relates to a communications infrastructure:

The Aruba ESP data center network design may contain one or more of the following elements:

- Aruba Central
- Aruba Fabric Composer
- Aruba NetEdit
- Pensando Policy and Services Manager
- Aruba CX 10000 Ethernet switches with Pensando
- Aruba CX 8xxx Ethernet switches
- Aruba CX 6xxx Ethernet switches for out-of-band (OOB) network management
- Aruba integration into HPE solutions

See https://www.arubanetworks.com/techdocs/VSG/docs/040-dc-design/Media/PDF/Aruba_VSG_Data-Center-Design.pdf at p. 6.

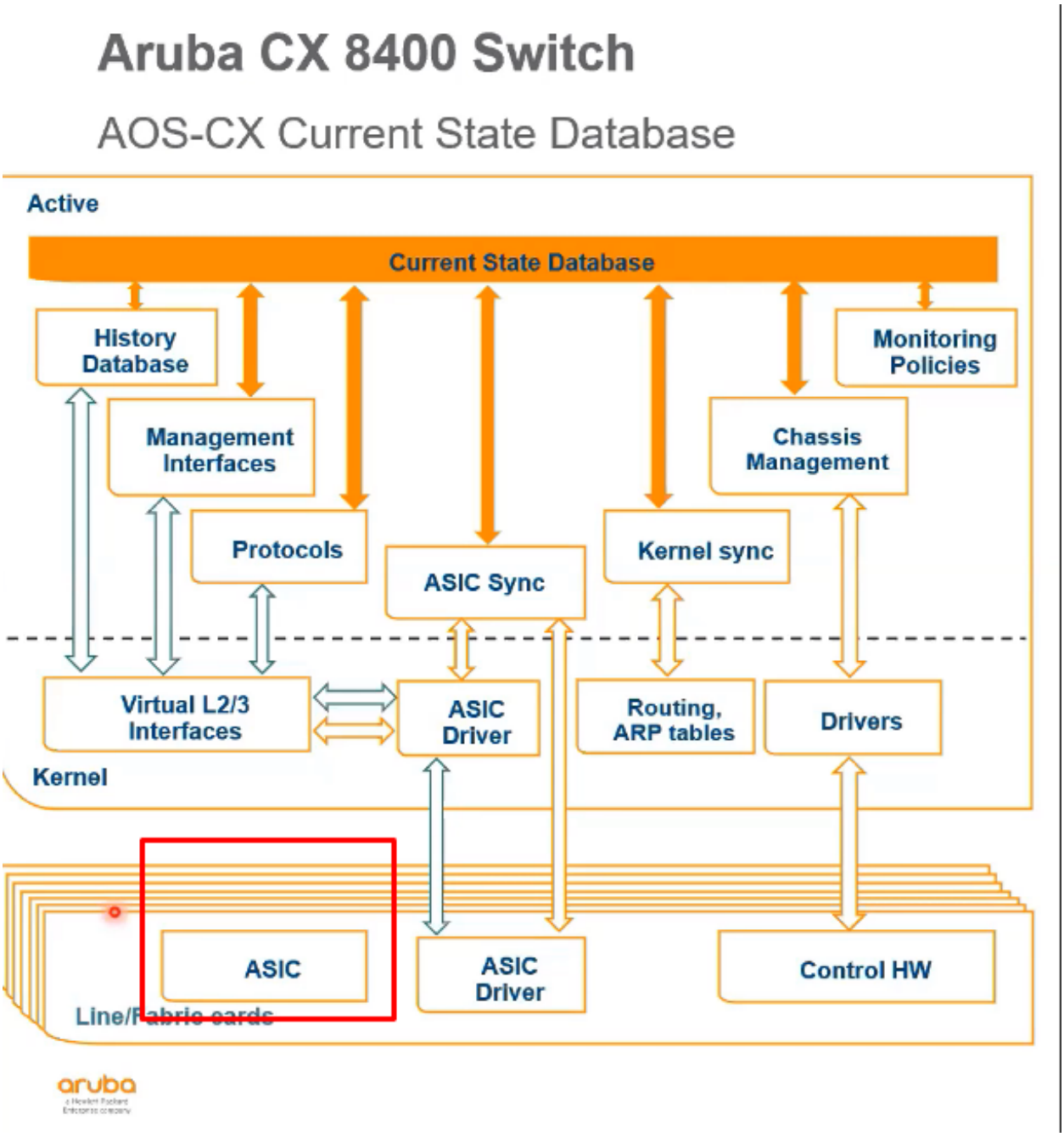
29. On information and belief, the Aruba CX 8400 switch series comprises two or more separate signal processing circuits:

The Aruba ESP data center network design may contain one or more of the following elements:

- Aruba Central
- Aruba Fabric Composer
- Aruba NetEdit
- Pensando Policy and Services Manager
- Aruba CX 10000 Ethernet switches with Pensando
- Aruba CX 8xxx Ethernet switches
- Aruba CX 6xxx Ethernet switches for out-of-band (OOB) network management
- Aruba integration into HPE solutions

See https://www.arubanetworks.com/techdocs/VSG/docs/040-dc-design/Media/PDF/Aruba_VSG_Data-Center-Design.pdf at p. 6.

30. On information and belief, each one of the said two or more signal processing circuits in the Aruba CX 8400 switch series include multiple ASIC devices that each itself includes a packet router.



See https://www.youtube.com/watch?v=UF5b2o5o6RE at 3:27. Up to 8 ASIC devices are supported.

Performance

- **High-speed fully distributed architecture**
  Provides up to 19.2 Tbps switching capacity with up to 7.142 billion packets per second (BPPS) for throughput; all switching and routing is performed in the line modules; meets the demands of bandwidth-intensive applications today and in the future
- **Scalable system design**
  Provides investment protection to support future technologies and higher-speed connectivity

See https://www.arubanetworks.com/assets/ds/DS_8400Series.pdf. The router is in the line card.

31. Additionally, Defendants' U.S. Patent No. 8,059,650 further shows that one of the said two or more signal processing circuits in the Aruba CX 8400 switch series include multiple ASIC devices that each itself includes a packet router.

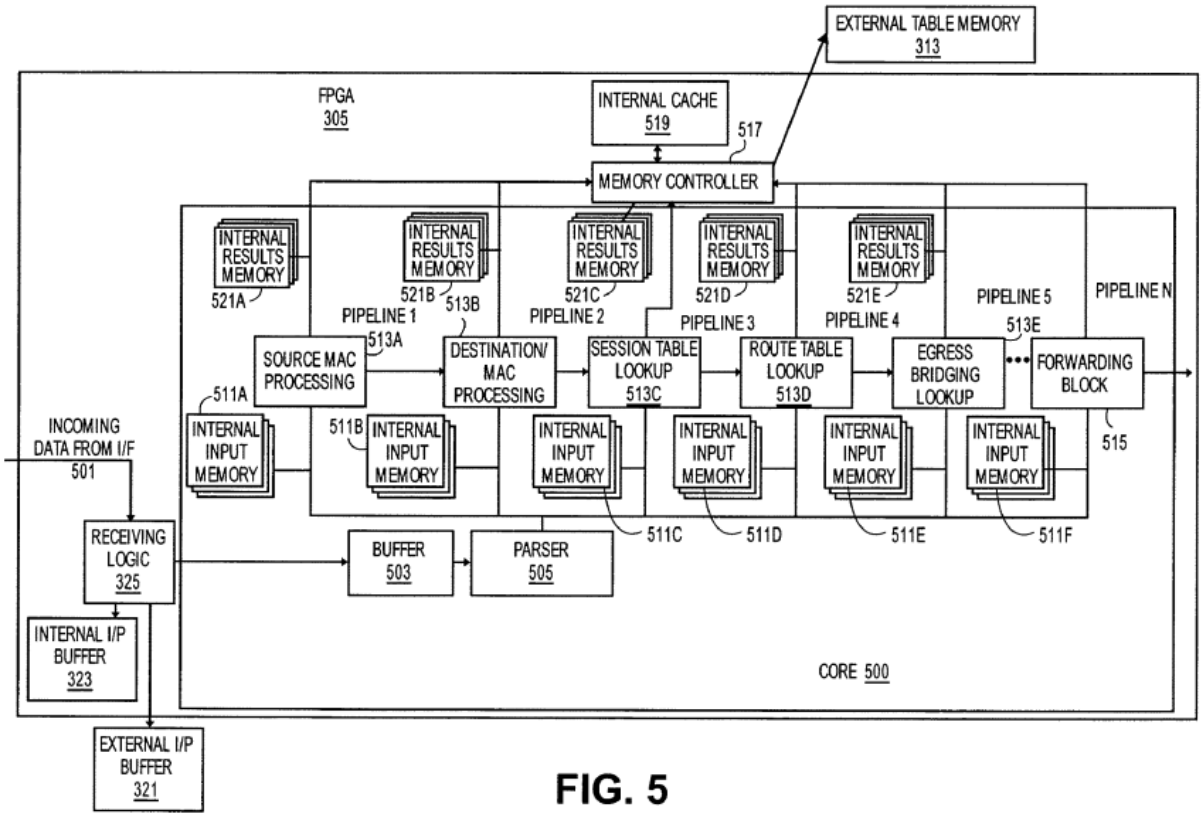


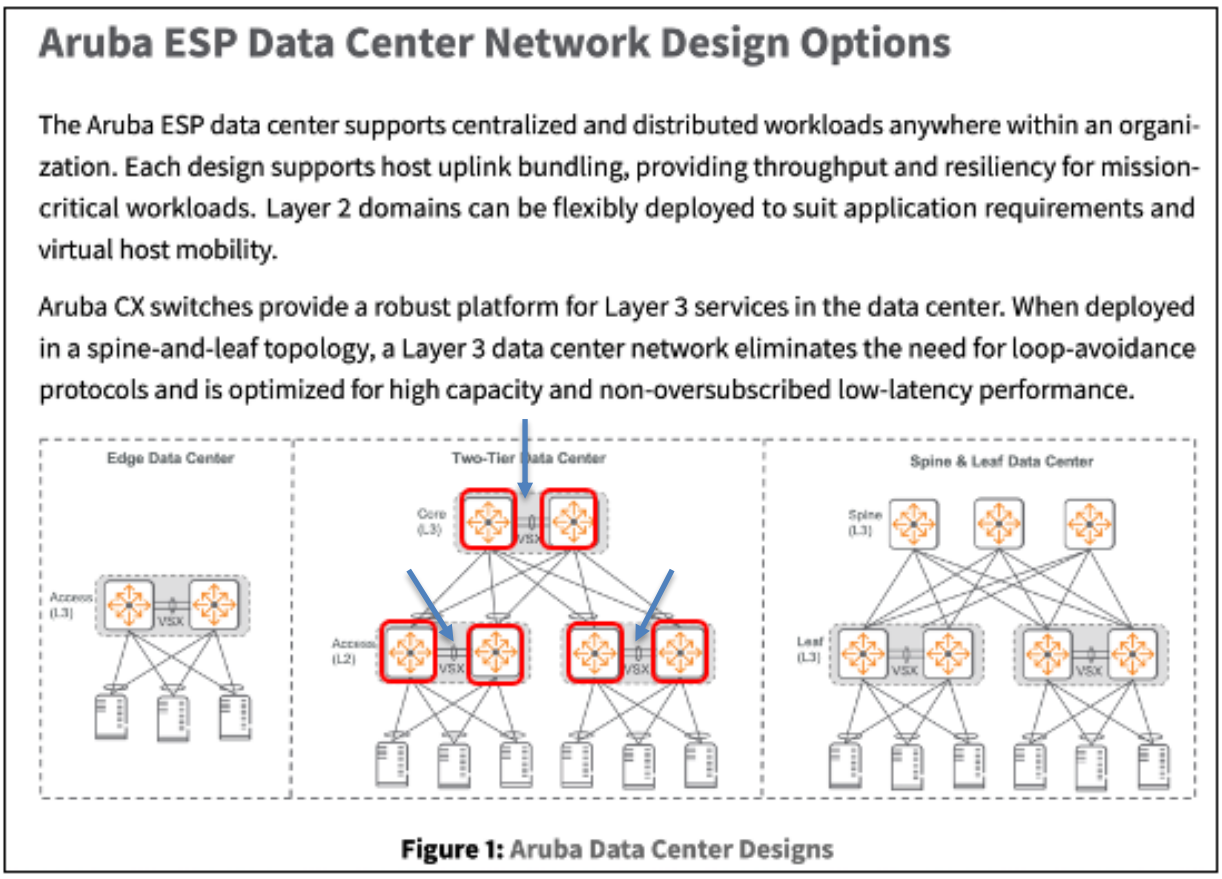
FIG. 5

32. For instance, U.S. Patent No. 8,059,650 states, "The network device 300 includes an FPGA 305 or similar device that processes the incoming and outgoing data packets to offload work from the central processing unit 309. In another embodiment, the FPGA 305 is an application specific integrated circuit (ASIC), a group of ASICS or FPGAs or similar configuration of devices." It further states:

> When a core 500 becomes available, the incoming data packet 501 is retrieved from the internal or external input buffer 323, 321 and stored in the parsing buffer 503.
>
> A parser 505 processes the data packets in the parsing buffer 503. In one embodiment, the parsing buffer 503 operates as a first-in-first-out (FIFO) queue. The parser 505 analyzes each data packet to identify each of the headers and the data contained in the packet. The parser 505 determines the type of each of the headers present in the data packet and operations that need to be performed on each header, portion of a header or segment of a data packet. The parser 505 then forwards each of the detected headers, data in the headers or data packet segments of the incoming data packet 501 to the respective specialized processing unit 511A-E.

33. On information and belief, the Aruba CX 8400 switch series includes the following "said packet router of each one of said ASIC devices of each given one of said respective two or more signal processing circuits being coupled through respective first and second common interfaces and an intervening high speed serial optical link to a respective packet router of each of the ASIC devices of each other of said two or more signal processing circuits with no other processing device intervening between the high speed optical link and said ASIC devices of each of said two or more

signal processing circuits."



See https://www.arubanetworks.com/techdocs/VSG/docs/040-dc-design/Media/PDF/Aruba_VSG_Data-Center-Design.pdf (signal processing circuits/switches are in red; optical fiber network indicated by blue arrow). Additionally, multiple Aruba CX 8400 switches are connected to the network through a QSFP or QSFP+ module/interface which supports both Ethernet and fiber optics network connection:

QSFP

Another expansion on the original SFP concept, QSFP uses double fiber pairs. The Q stands for "quad," and the additional pair allows for substantially more powerful data transmission. QSFP connectors are still small and hot-pluggable, and they still support Ethernet and fiber optics. Added to the supported list is InfiniBand.

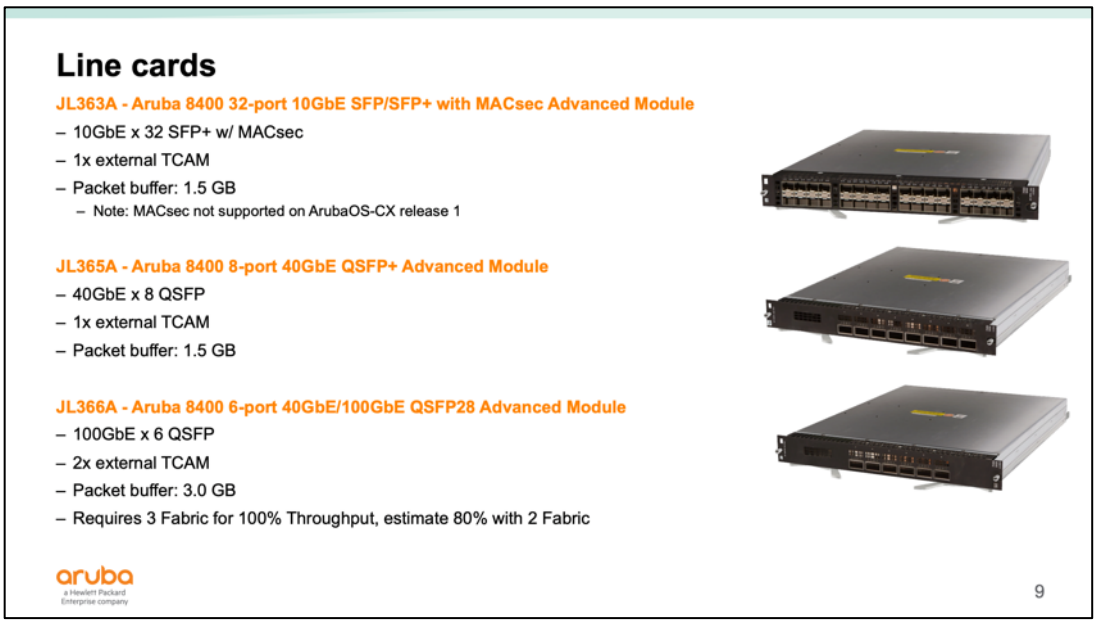
QSFP data rates get up to 1 Gbps per channel, allowing for 4X1 G cables and stackable networking designs that achieve better throughput.

QSFP+

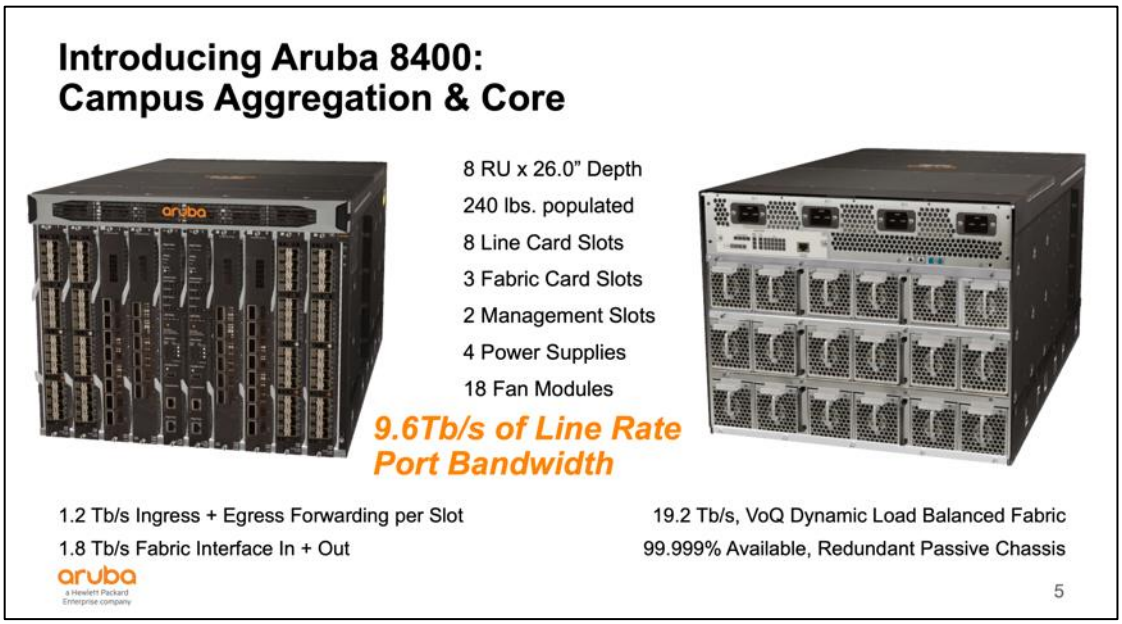
QSFP+ is the modern incarnation of QSFP. In most data centers, it has completely replaced its predecessor. QSFP+ can reach speeds of 10 Gbps per line. This makes it a 40G connection type that still maintains the small form factor that is essential to so many network designs.

The latest advance on QSFP connections is QSFP28. It expands on the transmission rate per line, and it easily gets throughput beyond 100G.

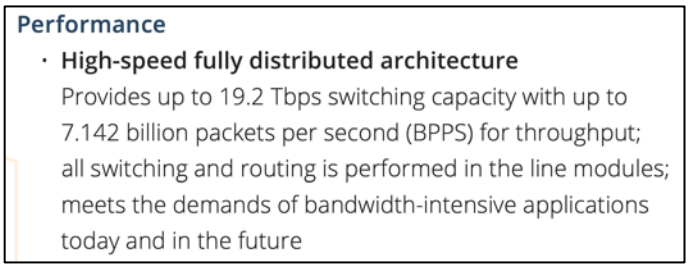
See https://www.arubanetworks.com/techdocs/VSG/docs/040-dc-design/Media/PDF/Aruba_VSG_Data-Center-Design.pdf.



See https://community.arubanetworks.com/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=d63ab2c0-9c5a-4d48-9c95-c24a6cc2f909 (demonstrating for instance that "each of the ASIC devices" is like JL365A – Aruba 8400 8-port 400bE QSFP+ Advanced Module)



See https://community.arubanetworks.com/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=d63ab2c0-9c5a-4d48-9c95-c24a6cc2f909 (demonstrating 1.2 Tb/s Ingree + Egree Forwarding per slot and that the Aruba CX 8400X Switch includes multiple ASIC devices (in each of up to 8 line cards) connected to a common front panel interface which further connects the Switch to an optical fiber network).



See https://www.arubanetworks.com/assets/ds/DS_8400Series.pdf (indicating that routing is performed in the line modules).

34. Furthermore, on information and belief, all ASIC devices connect directly to the QSFP optical interfaces. Thereby, each ASIC device is directly connected to the other ASIC device in another switch directly via the optical link.

Jury Trial Demanded

35. Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Lionra requests a trial by jury of any issues so triable by right.

Prayer for Relief

Plaintiff Lionra respectfully requests the following relief from this Court:

A. A judgment in favor of Lionra that Defendants have infringed the ’630 and ’323 patents, and that the ’630 and ’323 patents are valid, enforceable, and patent-eligible;

B. A judgment and order requiring Defendants to pay Lionra compensatory damages, costs, expenses, and pre- and post-judgment interest for its infringement of the asserted patents, as provided under 35 U.S.C. § 284;

C. Any and all injunctive and/or equitable relief to which Lionra may be entitled including, but not limited to, ongoing royalties with respect to Defendants’ infringement of the ’630 and ’323 patents;

D. A judgment and order requiring Defendants to provide an accounting and to pay supplemental damages to Lionra, including, without limitation, pre-judgment and post-judgment interest;

E. A finding that this case is exceptional under 35 U.S.C. § 285, and an award of Lionra’s reasonable attorney’s fees and costs; and

F. Any and all other relief to which Lionra may be entitled.

Dated: August 19, 2022

/s/ Reza Mirzaie

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