

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION

OPTIMORPHIX, INC.,

Plaintiff,

v.

BROADCOM INC.,

Defendant.

Civil Action No. 5:23-cv-00134-RWS-JBB

JURY TRIAL DEMANDED

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

OptiMorphix, Inc. (“OptiMorphix” or “Plaintiff”) brings this action and makes the following allegations of patent infringement relating to U.S. Patent Nos.: 7,024,460 (the “460 patent”); 7,031,314 (the “314 patent”); 7,586,871 (the “871 patent”); 8,429,169 (the “169 patent”); and 9,167,021 (the “021 patent”) (collectively, the “patents-in-suit”). Defendant CA, Inc. (“CA” or “Defendant”) infringes the patents-in-suit in violation of the patent laws of the United States of America, 35 U.S.C. § 1 *et seq.*

THE PARTIES

1. Plaintiff OptiMorphix, Inc. (“Plaintiff” or “OptiMorphix”) is a Delaware corporation that holds a portfolio of over 250 patent assets that were developed at Citrix Systems, Inc. (“Citrix”) and Bytemobile, Inc.

2. Bytemobile, Inc. (“Bytemobile”) was a global leader in mobile internet solutions for network operators. The company was founded in 2000. Bytemobile’s mission was to optimize video and web content services for mobile network operators to improve users’ experiences while maximizing the efficiency of network infrastructure.

3. Bytemobile was established during a time when the mobile landscape was evolving rapidly. The advent of 3G technology, coupled with increasingly sophisticated smartphones, led to a surge in demand for data services. However, mobile networks at the time were not optimized to handle this influx, particularly for data-rich services like video streaming. Recognizing this opportunity, Bytemobile sought to create solutions that would enable network operators to deliver high-quality, consistent mobile data services. By 2011, Bytemobile was a “market leader in video and web optimization, with more than 125 cumulative operator deployments in 60 countries.”¹



Andrew Zipern, *Vodafone in Deal with Start-Up Bytemobile*, NYTimes at C4 (January 29, 2002) (“Bytemobile, a wireless data start-up . . . reached a deal with Vodafone, Britain’s largest mobile phone operator”); *NTT DoCoMo Launches Bytemobile Optimization Solution in its Core Network*, WIRELESSWATCH IP (October 5, 2004) (“NTT DoCoMo has deployed Bytemobile’s optimization solution in its core network”); *China Mobile Selects Bytemobile for Nationwide Web Gateway Project*, BUSINESS WIRE (July 8, 2009) (“A Bytemobile customer since 2004, CMCC has deployed its web optimization solutions”); *Bytemobile Juices Up Orange*, ESPICOM TELECOMMUNICATION NEWS (October 10, 2002) (“Orange customers will experience faster application performance and Web page downloads”); *ByteMobile Wins 2013 LTE Award for Best LTE Traffic Management Product*, MARKETSCREENER (July 1, 2013) (“ByteMobile technology has been deployed . . . in networks serving nearly two billion subscribers.”).

¹ *Bytemobile: Importance of Video and Web Optimizations*, TELECOM REVIEW at 58 (2011); see also *Bytemobile Secures Its 36th Video Optimisation Win for MNO Deployment*, TOTAL TELECOM & TOTAL TELECOM MAGAZINE (March 21, 2011).

4. Bytemobile products, such as the Unison platform and the T3100 Adaptive Traffic Manager, were designed to optimize mobile data traffic in real-time, ensuring a high-quality mobile internet experience for end-users. This approach was groundbreaking at the time and set the stage for many of the mobile data optimization techniques used today.

5. Bytemobile’s innovative technologies and customer-centric approach led to rapid growth and success. Bytemobile’s innovative product portfolio included: the T3100 Adaptive Traffic Manager which was designed to handle high volumes of traffic efficiently and provide real-time optimization, compression, and management of mobile data; Bytemobile’s T2000 Series Video Cache, which supported transparent caching of content; and Bytemobile’s T1000 Series Traffic Director, which enabled traffic steering and load balancing for high availability of applications.

T3100 Adaptive Traffic Manager

The ByteMobile T3100 Adaptive Traffic Manager is the cornerstone of the ByteMobile Adaptive Traffic Management Solution. As the central “brain” for Adaptive Traffic Management, the T3100 system leverages ByteMobile applications and integrates deep packet inspection (DPI), video, web and Internet radio optimization, analytics and policy control to dynamically adapt to changing network conditions and ensure mobile subscribers have the best user experience possible.

The T3100 incorporates the ByteMobile Orchestration System, allowing the T3100 to act as a single network element for the above applications. This eliminates the cost and complexity of deploying and managing multiple network elements from different vendors for traffic management. Acting as an intelligent, content-aware control point between the Internet and the mobile network, the T3100 improves the utilization and performance of existing mobile network capacity by 30-50%.

The T3100 is a 12 RU, carrier-grade, NEBS Level 3-compliant, fault-tolerant system with built-in

T2000 Series Video Cache

The T2000 Series Video Cache improves subscriber quality of experience (QoE) and reduces data volume by delivering popular content from within the mobile operator’s network. The T2000 integrates with the T3100 to deliver superior video quality by leveraging both offline and online video optimization and supporting policy enforcement on a per-subscriber basis.

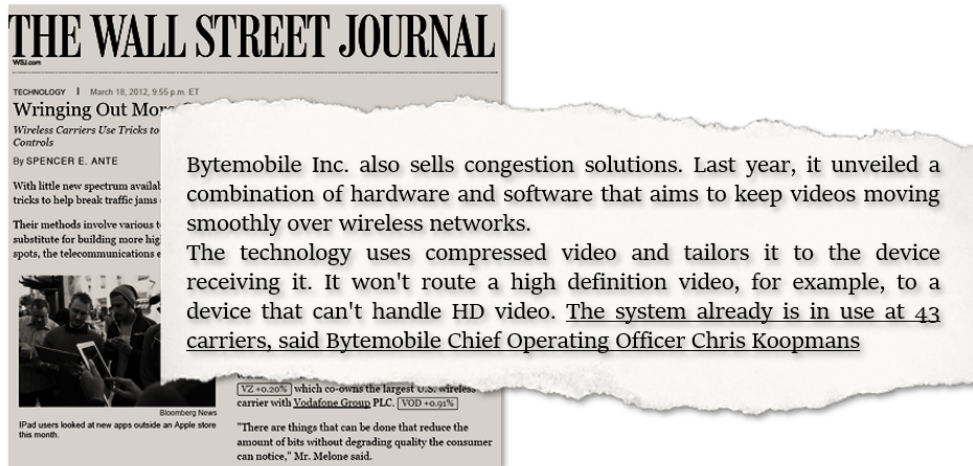
The T2000 supports transparent caching and can process traffic from every major website without requiring any changes in content server configuration. The T2000 caches up to 60% of video data volume on average, reducing the need for videos to be fetched across Internet links. Because the T2000 is tightly integrated with the ByteMobile video optimization application, operators can compress cached videos by up to 40%, providing additional data reduction for heavily constrained networks or fulfilling a mandate for intelligent capacity growth.

T1000 Series Traffic Director

The T1000 Series Traffic Director steers traffic and manages load for the T3100 platform and other operator elements on the data plane, control plane and application plane. The T1000 facilitates network integration and intelligently maintains high availability for applications running on the T3100. The T1000 offers deployment flexibility to rapidly insert Adaptive Traffic Management applications to control subscriber mobile data traffic.

ByteMobile Adaptive Traffic Management Product Family, BYTEMOBILE DATA SHEET at 1-2 (2014).

6. Bytemobile’s groundbreaking technologies also included products for data optimization. Bytemobile’s data optimization solutions were designed to compress and accelerate data transfer. By reducing the size of data packets without compromising quality, these technologies allowed faster data transmission and minimized network congestion. Bytemobile also offered solutions to analyze and manage network traffic, allowing network operators to identify patterns, allocate bandwidth intelligently, and prioritize different types of content.



Spencer E. Ante, *Wringing Out More Capacity*, WALL STREET JOURNAL at B3 (March 19, 2012) (emphasis added).

7. In July 2012, Bytemobile was acquired by Citrix Systems, Inc. (“Citrix”) for \$435 million. Bytemobile “became part of [Citrix’s] Enterprise division and extend[ed] [Citrix’s] industry reach into the mobile and cloud markets.”²

8. OptiMorphix owns a portfolio of patents developed at Bytemobile and later Citrix. Highlighting the importance of the patents-in-suit is the fact that the OptiMorphix’s patent portfolio has been cited by over 4,800 U.S. and international patents and patent applications assigned to a wide variety of the largest companies operating in the networking, content delivery, and cloud computing fields. OptiMorphix’s patents have been cited by companies such as:

² CITRIX SYSTEMS, INC. 2012 ANNUAL REPORT at 33 (2013).

- Amazon.com, Inc. (263 citing patents and applications)³
- Oracle (59 citing patents and applications)⁴
- Alphabet, Inc. (103 citing patents and applications)⁵
- ***Broadcom Ltd. (93 citing patents and applications)***⁶
- Cisco Systems, Inc. (277 citing patents and applications)⁷
- Lumen Technologies, Inc. (77 citing patents and applications)⁸
- Intel Corporation (45 citing patents and applications)⁹
- Microsoft Corporation (150 citing patents and applications)¹⁰
- AT&T, Inc. (93 citing patents and applications)¹¹
- Verizon Communications, Inc. (31 citing patents and applications)¹²
- Juniper Networks, Inc. (29 citing patents and applications)¹³

9. Defendant CA, Inc. (“CA”) is a Delaware corporation. For the purposes of this case only, CA, Inc. has stipulated that venue is proper over CA in this District pursuant to 28 U.S.C. § 1400(b).

10. CA is a wholly-owned subsidiary of Broadcom Inc.

JURISDICTION AND VENUE

11. This action arises under the patent laws of the United States, Title 35 of the United States Code. Accordingly, this Court has exclusive subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338(a).

12. This Court has personal jurisdiction over CA in this action because CA has committed acts within the Eastern District of Texas giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over CA would not offend

³ See e.g., U.S. Patent Nos. 7,817,563; 9,384,204; 9,462,019; 11,343,551; and 11,394,620.

⁴ See e.g., U.S. Patent Nos. 7,475,402; 7,574,710; 8,589,610; 8,635,185; and 11,200,240.

⁵ See e.g., U.S. Patent Nos. 7,743,003; 8,458,327; 9,166,864; 9,665,617; and 10,733,376.

⁶ See e.g., U.S. Patent Nos. 7,636,323; 8,448,214; 9,083,986; 9,357,269; and 10,091,528.

⁷ See e.g., U.S. Patent Nos. 7,656,800; 7,930,734; 8,339,954; 9,350,822; and 10,284,484.

⁸ See e.g., U.S. Patent Nos. 7,519,353; 8,315,179; 8,989,002; 10,511,533; and 11,233,740.

⁹ See e.g., U.S. Patent Nos. 7,394,809; 7,408,932; 9,515,942; 9,923,821; and 10,644,961.

¹⁰ See e.g., U.S. Patent Nos. 8,248,944; 9,071,841; 9,852,118; 10,452,748; and 11,055,47.

¹¹ See e.g., U.S. Patent Nos. 8,065,374; 8,429,302; 9,558,293; 9,800,638; and 10,491,645.

¹² See e.g., U.S. Patent Nos. 8,149,706; 8,930,559; 9,253,231; 10,003,697; and 10,193,942.

¹³ See e.g., U.S. Patent Nos. 8,112,800; 8,509,071; 8,948,174; 9,407,726; and 11,228,631.

traditional notions of fair play and substantial justice. Defendant CA, directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), has committed and continues to commit acts of infringement in this District by, among other things, offering to sell and selling products and/or services that infringe the patents-in-suit. Moreover, CA is registered to do business in the State of Texas, has offices and facilities in the State of Texas, and actively directs its activities to customers located in the State of Texas.

13. Venue is proper in this District under 28 U.S.C. §§ 1391(b)-(d) and 1400(b). Defendant CA is registered to do business in the State of Texas, has offices in the State of Texas, has transacted business in the Eastern District of Texas and has committed acts of direct and indirect infringement in the Eastern District of Texas.

14. This Court has personal jurisdiction over CA. CA has conducted and does conduct business within the State of Texas. CA, directly or through subsidiaries or intermediaries (including distributors, retailers, and others), ships, distributes, makes, uses, offers for sale, sells, imports, and/or advertises (including by providing an interactive web page) its products and/or services in the United States and the Eastern District of Texas and/or contributes to and actively induces its customers to ship, distribute, make, use, offer for sale, sell, import, and/or advertise (including the provision of an interactive web page) infringing products and/or services in the United States and the Eastern District of Texas. CA, directly and through subsidiaries or intermediaries (including distributors, retailers, and others), has purposefully and voluntarily placed one or more of its infringing products and/or services, as described below, into the stream of commerce with the expectation that those products will be purchased and used by customers and/or consumers in the Eastern District of Texas. These infringing products and/or services have been and continue to be made, used, sold, offered for sale, purchased, and/or imported by

customers and/or consumers in the Eastern District of Texas. CA has committed acts of patent infringement within the Eastern District of Texas. CA interacts with customers in Texas, including through visits to customer sites in Texas. Through these interactions and visits, CA directly infringes the patents-in-suit. CA also interacts with customers who sell the Accused Products into Texas, knowing that these customers will sell the Accused Products into Texas, either directly or through intermediaries.

15. CA has minimum contacts with this District such that the maintenance of this action within this District would not offend traditional notions of fair play and substantial justice. Thus, the Court therefore has both general and specific personal jurisdiction over CA.

THE ASSERTED PATENTS

U.S. PATENT NO. 7,024,460

16. U.S. Patent No. 7,024,460 (the “‘460 patent”) entitled, *Service-Based Compression of Content Within a Network Communication System*, was filed on March 11, 2002. The ‘460 patent claims priority to U.S. Provisional Patent Application No. 60/309,218, which was filed on July 31, 2001. The ‘460 patent is subject to a 35 U.S.C. § 154(b) term extension of 691 days. A true and correct copy of the ‘460 patent is attached hereto as Exhibit 1.

17. The ‘460 patent has been in full force and effect since its issuance. OptiMorphix, Inc. owns by assignment the entire right, title, and interest in and to the ‘460 patent.

18. The ‘460 patent generally relates to the optimization of data transmission in network communication systems. Specifically, it focuses on the compression of message data to enhance the efficiency of message services.

19. The invention taught by the ‘460 patent solves discrete, technological problems associated with computer systems and network communications. Specifically, it addresses the challenges of managing high volumes of data, network congestion, and inefficient use of network

resources. These are technical problems that directly impact the performance and reliability of computer networks. By introducing a service-based compression mechanism, the patent provides a technical solution that enhances the efficiency of email services and improves the overall performance of the network communication system.

20. The '460 patent identifies the shortcomings of the prior art. Specifically, the specification describes that traditional network communication systems often struggle with managing high volumes of data. These systems typically lack an efficient mechanism for compressing data, leading to network congestion and slow transmission speeds. Furthermore, the prior art does not provide a solution for dynamically intercepting and redirecting packets to a separate compression application, which limits the ability to optimize data transmission.

21. The '460 patent family has been cited by 1,466 United States and international patents and patent applications as relevant prior art. 417 United States and international patents and patent applications have cited the '460 patent itself as relevant prior art. The following companies and research institutions have cited the '460 patent as relevant prior art:

- Apple Inc.
- Qualcomm, Inc.
- Microsoft Corporation
- Alphabet Inc.
- Nokia Corporation
- AT&T Inc.
- Oracle Corporation
- Deutsche Telekom AG
- Hitachi, Ltd.
- Thales SA
- Juniper Networks, Inc.
- Siemens AG
- Intel Corporation

U.S. PATENT NO. 7,031,314

22. U.S. Patent No. 7,031,314 (the “‘314 patent”) entitled, *Systems and Methods for Providing Differentiated Services Within a Network Communication System*, was filed on April 19, 2002. The ‘314 patent claims priority to U.S. Provisional Patent Application No. 60/291,918, which was filed on May 16, 2001, and U.S. Provisional Patent Application No. 60/309,213 filed on July 31, 2001. The ‘314 patent is subject to a 35 U.S.C. § 154(b) term extension of 625 days. A true and correct copy of the ‘314 patent is attached hereto as Exhibit 2.

23. The ‘314 patent has been in full force and effect since its issuance. OptiMorphix, Inc. owns by assignment the entire right, title, and interest in and to the ‘314 patent.

24. The ‘314 patent is directed to solving the problem of deploying differentiated services within existing network infrastructure. The patent identifies that existing network infrastructure was generally not designed to support a wide variety of application-specific and subscriber-specific services as the corresponding data flowed through a network. “Consequently, the different and potentially incompatible requirements of the increasingly diverse applications, Subscribers and networking environments has placed demands on the existing network infrastructure for which the network infrastructure was not originally designed to handle.” ‘314 patent, col. 1:37-42.

25. The ‘314 patent addresses the issue of identifying the data streams on which to perform the differentiated services, which may involve a significant processing penalty. “The problem with deploying these differentiated services within the existing network infrastructure is that the network infrastructure was not designed to support a wide variety application-specific and subscriber specific services as the corresponding data flows through the network.” ‘314 patent, col. 1:47-52.

26. The inventions disclosed in the '314 patent provide significant benefits and improvements to the function of the hardware in a computer network by enabling differentiated services within the network infrastructure. By incorporating a service module within the network infrastructure that can intercept packets, determine whether the connection corresponds to a service application, and then break and reestablish the connection for application-specific processing, the invention allows for a more efficient and flexible network communication system.

27. The inventions taught by the '314 patent solves discrete, technological problems associated with computer systems, specifically those related to network communication systems. The patent addresses the limitations of existing network infrastructures that were not designed to support a wide variety of application-specific and subscriber-specific services as data flows through the network. It also solves the problem of the significant processing penalty associated with identifying the data streams on which to perform the differentiated services.

28. The '314 patent family has been cited by 1,466 United States and international patents and patent applications as relevant prior art. Specifically, 141 United States and international patents and patent applications have cited the '314 patent itself as relevant prior art. The following companies and research institutions have cited the '314 patent as relevant prior art:

- Cisco Technology, Inc.
- Alphabet Inc.
- Oracle Corporation
- International Business Machines Corp.
- Microsoft Corporation
- Qualcomm, Inc.
- Telefonaktiebolaget Lm Ericsson
- Intel Corporation
- Check Point Software Technologies Ltd.
- Hitachi, Ltd.
- Open Text Corporation
- Fujitsu Limited
- **Broadcom Limited**
- Samsung Electronics Co., Ltd.

U.S. PATENT NO. 7,586,871

29. U.S. Patent No. 7,586,871 (the “‘871 patent”) entitled, *Platform and Method for Providing Data Services in a Communication Network*, was filed on January 11, 2006. The ‘871 patent claims priority to U.S. Application Ser. No. 10/061,953, which was filed on February 2, 2002, which claims the benefit of U.S. Provisional Applications No. 60/292,564, which was filed on May 22, 2001, and No. 60/293,756, which was filed on May 25, 2001. The ‘871 patent also claims the benefit of U.S. Provisional Application No. 60/654,730, which was filed on February 18, 2005. The ‘871 patent is subject to a 35 U.S.C. § 154(b) term extension of 748 days. A true and correct copy of the ‘871 patent is attached hereto as Exhibit 3.

30. The ‘871 patent has been in full force and effect since its issuance. OptiMorphix, Inc. owns by assignment the entire right, title, and interest in and to the ‘871 patent.

31. The ‘871 patent generally relates to a communication node and corresponding method for processing data communications passing through the node between a first data network and a second data network. The method includes detecting an event associated with data communication arriving at the node from the first data network, determining whether the data communication is to be suspended for service at the node based on the detected event, and processing suspended data communication based on information in the data communication. The patent also covers the detection of return data communication arriving at the node from the second data network in response to the processed data communication from the first data network. The detected return data communication is allowed to pass through the node without processing the detected return data communication.

32. The ‘871 patent is directed to solving the problem of efficiently providing data services, such as content filtering, in a communication network. This includes the ability to

determine whether a packet flow should be suspended for filtering a content request based on packet flow characteristics detected at the layers implemented in hardware, without the need for assistance from higher layers in the architecture implemented in software.

33. The '871 patent teaches the use of a communication node that processes data communication between two networks. This node detects an event associated with data communication from the first network, determines whether the data communication should be suspended for service at the node based on the detected event, and processes suspended data communication based on information in the data communication. The '871 patent also teaches the detection of return data communication from the second network in response to the processed data communication from the first network, allowing this return data communication to pass through the node without further processing. This approach allows for more efficient processing of data communication, reducing the need to inspect every packet in a flow and avoiding the need to terminate or establish a communication session associated with the data communication.

34. The inventions disclosed in the '871 patent provide significant benefits and improvements to the function of the hardware in a computer network. Specifically, the inventions taught by the '871 patent can determine whether a packet flow should be suspended for filtering a content request based on packet flow characteristics detected at the layers implemented in hardware. This improves the efficiency and scalability of content filtering and other services, particularly for mobile data networks that carry delay-sensitive traffic such as voice or video streaming traffic.

35. The '871 patent family has been cited by 962 United States and international patents and patent applications as relevant prior art. 166 United States and international patents and patent

applications have cited the '871 patent itself as relevant prior art. The following companies and research institutions have cited the '871 patent as relevant prior art:

- A10 Networks, Inc.
- Thoma Bravo, LLC
- AT&T, Inc.
- NEC Corporation
- Nokia Corporation
- Cisco Systems, Inc.
- Juniper Networks, Inc.
- Fujitsu Limited

U.S. PATENT NO. 8,429,169

36. U.S. Patent No. 8,429,169 (the "'169 patent") entitled, *Systems and Methods For Video Cache Indexing*, was filed on July 29, 2011. The '169 patent claims priority to U.S. Provisional Patent Application No. 61/369,513, which was filed on July 30, 2010. A true and correct copy of the '169 patent is attached hereto as Exhibit 4.

37. The '169 patent has been in full force and effect since its issuance. OptiMorphix, Inc. owns by assignment the entire right, title, and interest in and to the '169 patent.

38. The '169 patent is directed to solving the problem of inefficient caching of content, particularly when dynamic URLs are used to refer to the content. Traditional caching methods that index content based on URLs can lead to multiple cache entries for the same content or entries with expired references, reducing the efficiency and capacity of the cache. The technologies taught in the '169 patent overcomes these inefficiencies by indexing the content cache based on a characterization of the content rather than the URL.

39. The '169 patent identifies the shortcomings of the prior art. Specifically, that conventional content caching methods, especially those employing dynamic URLs, lead to two main inefficiencies: (a) multiple cache entries corresponding to the same video content, thereby

reducing the cache's capacity to serve unique content, and (b) content cache entries with expired references to content, reducing the useful capacity of the content cache. These inefficiencies hinder the performance of middleware services and website performance.

40. The '169 patent teaches the use of a novel approach to cache video content by indexing the content cache based on a characterization of the video content rather than the URL. This method involves identifying characterization data related to the content request and using a hash function to generate an index. This index is then used to identify the corresponding entry in the cache data structure. By avoiding the use of dynamic URLs in the indexing process, the patent's method allows for more efficient caching, eliminating redundancies and invalid entries, and improving the overall efficiency of content delivery.

41. The inventions disclosed in the '169 patent provide significant benefits and improvements to the function of the hardware in a computer network by enabling more efficient caching of video content. By indexing the content cache based on the characterization of the content rather than the URL, the patented method avoids the problems of redundant and invalid cache entries. This leads to better utilization of cache capacity, reduced burden on network infrastructure and web servers, and faster content delivery to users. The invention also allows for distinguishing between similar but non-identical videos, avoiding content aliasing, and ensuring that the correct content is delivered to the user.

42. The '169 patent family has been cited by 92 United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies and research institutions have cited the '169 patent family as relevant prior art:

- Akamai Technologies, Inc.
- AMC Networks Inc.
- AT&T Inc.
- Atlassian Pty Ltd

- Canon Inc.
- Charter Communications, Inc.
- China Mobile Communications Corporation
- EchoStar Corporation
- Huawei Investment & Holding Co., Ltd.
- Interdigital, Inc.
- Juniper Networks, Inc.
- Koninklijke Philips Nv
- Microsoft Corporation
- Open Text Corporation
- SK Telecom Co., Ltd.
- Skyfire Labs, Inc., California
- ZTE Corporation

U.S. PATENT NO. 9,167,021

43. U.S. Patent No. 9,167,021 (the “’021 patent”) entitled, *Measuring Web Browsing Quality of Experience in Real-Time at An Intermediate Network Node*, was filed on March 30, 2012. The ‘021 patent is subject to a 35 U.S.C. § 154(b) term extension of 265 days. A true and correct copy of the ‘021 patent is attached hereto as Exhibit 5.

44. The ‘021 patent has been in full force and effect since its issuance. OptiMorphix, Inc. owns by assignment the entire right, title, and interest in and to the ‘021 patent.

45. The ‘021 patent is directed to solving the problem of accurately measuring the time needed to download a web page at an intermediate network node. Traditional methods of measuring download time at the client or server level are straightforward, but complications arise when content for a single web page is distributed across several physical servers or when measuring at an intermediate network node. The patent addresses these challenges by introducing a method to evaluate and compute the page unit time.

46. The ‘021 patent identifies the shortcomings of the prior art. Specifically, measuring the web page download time at an intermediate network node is practically not feasible due to the complexity of web page transactions. The prior art lacks an effective method to measure the time

taken to download a complete web page at an intermediate network node, especially when content is distributed across several servers or when dynamic URLs are generated by client-side scripts.

47. The '021 patent teaches the use of a method that includes acquiring current HTTP transactions, determining their relation to web browsing for a specific client, and evaluating whether they belong with the previous transactions set. By grouping transactions into page units and computing a page unit time, the method provides a way to measure the Quality of Experience (QoE) of web browsing in real-time at an intermediate network node.

48. The inventions disclosed in the '021 patent provide significant benefits and improvements to the function of the hardware in a computer network by enabling real-time measurement of web browsing QoE at an intermediate network node. This allows service providers to optimize network performance and take actions to enhance the browsing experience.

49. The inventions taught by the '021 patent solve discrete, technological problems associated with computer systems and network performance. Specifically, it addresses the technical challenges of measuring web browsing Quality of Experience (QoE) at an intermediate network node, considering the complexities of web page transactions, distributed content across servers, and dynamic URL generation. The solution provided by the '021 patent is rooted in technological innovation and contributes to the optimization of network performance and user experience.

50. The '021 patent family has been cited by 17 United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies and research institutions have cited the '021 patent family as relevant prior art:

- BT Group plc
- Meta Platforms, Inc.
- Cisco Systems, Inc.
- Telefonaktiebolaget Lm Ericsson

- Tencent Holdings Ltd
- Apple Inc.
- Nippon Telegraph & Telephone Corp.
- EchoStar Corporation
- Intel Corporation

COUNT I
INFRINGEMENT OF U.S. PATENT NO. 7,024,460

51. Plaintiff references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

52. CA designs, makes, uses, sells, and/or offers for sale in the United States products that compress an email message communicated from a server to a client.

53. CA designs, makes, sells, offers to sell, imports, and/or uses the following products: Symantec Enterprise Cloud including Email Security functionality (formerly known as Messaging Security) (including: Symantec Email Security.cloud, Symantec Messaging Gateway, Symantec Email Fraud Protection, Symantec Email Threat Detection and Response, Symantec Email Threat Isolation, and Symantec Policy Based Encryption Advanced) (collectively, the “CA ‘460 Product(s)”).

54. One or more CA subsidiaries and/or affiliates use the CA ‘460 Products in regular business operations.

55. The CA ‘460 Products comprise a processor.

56. The CA ‘460 Products comprise a system for compressing a message communicated from a server to a client.

57. The CA ‘460 Products contain functionality for executing instructions that are stored on a memory unit.

58. The CA '460 Products comprise a memory module, linked to the processor, that stores data and commands. When these instructions are executed by the processor, they cause the processor to function in a manner that allows it to categorize a link between the server and the client, so as to determine if this connection is related to an email service.

59. The CA '460 Products comprise a memory module, connected to the processor that is designed to hold data and instructions. These instructions lead the CA '460 Products to perform tasks including: (1) analyzing the relationship between the server and the client to discern whether it is associated with an email service, and (2) upon confirming that the link does correspond to an email service, severing the connection between the server and the client, thereby creating a primary connection between the client and a compression module, and a secondary connection between the compression module and the server.

60. The CA '460 Products comprise a memory module, interfaced with the processor that serves to cache data and sets of command. The CA '460 Products perform specific operations such as: (1) the categorization of the linkage between the server and client, to evaluate whether this connection relates to an email service; (2) upon affirmation that the link is related to an email service, the original connection is disrupted, and a split of connections is established -- one leading from the client to a compression module, and the other between the compression module and the server; and (3) compression of at least a fragment of the email message from the server is conducted by the CA '460 Products.

61. Further, the CA '460 Products contain functionality wherein a segment or the entirety of the email message received from the server is compressed by a compression module. This compression reduces the data size, allowing for faster transmission and reduced bandwidth

usage. In addition, the CA '460 Products contain functionality wherein the compressed email message is transmitted to the client by the CA '460 Products.

62. The transmission of the compressed message by the CA '460 Products is achieved through a network protocol, such as Transmission Control Protocol/Internet Protocol (TCP/IP). The compressed data is broken down into smaller packets, which are individually routed and then reassembled at the client's end.

63. CA has directly infringed and continues to directly infringe the '460 patent by, among other things, making, using, offering for sale, and/or selling technology that comprise a system for compressing an email message communicated from a server to a client, including but not limited to the CA '460 Products.

64. The CA '460 Products are available to businesses and individuals throughout the United States.

65. The CA '460 Products are provided to businesses and individuals located in this District.

66. By making, using, testing, offering for sale, and/or selling products and services comprising a system for compressing an email message communicated from a server to a client, including but not limited to the CA '460 Products, CA has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the '460 patent, including at least claim 22 pursuant to 35 U.S.C. § 271(a).

67. CA also indirectly infringes the '460 patent by actively inducing infringement under 35 U.S.C. § 271(b).

68. CA has had knowledge of the '460 patent since at least November 20, 2023, when the Original Complaint in this case was filed against CA's parent company, Broadcom Inc. CA

knew of the '460 patent and knew of its infringement, including by way of the filing of the Original Complaint against CA's parent company Broadcom Inc., which identified the '460 patent and explained how each of the accused products infringe the '460 patent.

69. Alternatively, CA has had knowledge of the '460 patent since at least service of this First Amended Complaint or shortly thereafter, and CA knew of the '460 patent and knew of its infringement, including by way of this lawsuit.

70. CA intended to induce patent infringement by third-party customers and users of the CA '460 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. CA specifically intended and was aware that the normal and customary use of the accused products would infringe the '460 patent. CA performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '460 patent and with the knowledge that the induced acts would constitute infringement. For example, CA provides the CA '460 Products that have the capability of operating in a manner that infringe one or more of the claims of the '460 patent, including at least claim 22, and CA further provides documentation and training materials that cause customers and end users of the CA '460 Products to utilize the products in a manner that directly infringe one or more claims of the '460 patent.¹⁴ By providing instruction and training to

¹⁴ See e.g., *Symantec Messaging Gateway 10.8.0, Administration Guide*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2022); *Symantec Messaging Gateway 10.7.4 Administration Guide*, SYMANTEC-BROADCOM-CA DOCUMENTATION (March 19, 2021); *Data Feeds API Guide: Email Security.cloud*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2020); *White Paper – Driving the Future of Security Innovation*, SYMANTEC-BROADCOM-CA DOCUMENTATION (December 14, 2022); *Email Security.cloud Technical Update: Subscription Management Tool*, SYMANTEC YOUTUBE CHANNEL (November 15, 2022), available at: <https://www.youtube.com/watch?v=9UNqNrK0q9>; *Symantec Enterprise Cloud and SASE*, SYMANTEC ENTERPRISE BLOG (September 19, 2022), available at: <https://symantec-enterprise-blogs.security.com/blogs/expert-perspectives/symantec-enterprise-cloud-and-sase>; *Email Security for the Enterprise – Product Brief*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2020); *Symantec Messaging Gateway for Service Providers 10.6 Implementation Guide*, SYMANTEC BROADCOM DOCUMENTATION (2016); *Symantec Messaging Gateway - November 2022 Office*

customers and end-users on how to use the CA '460 Products in a manner that directly infringes one or more claims of the '460 patent, including at least claim 22, CA specifically intended to induce infringement of the '460 patent. CA engaged in such inducement to promote the sales of the CA '460 Products, e.g., through CA user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '460 patent. Accordingly, CA has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '460 patent, knowing that such use constitutes infringement of the '460 patent.

71. The '460 patent is well-known within the industry as demonstrated by multiple citations to the '460 patent in published patents and patent applications assigned to technology companies and academic institutions. CA is utilizing the technology claimed in the '460 patent without paying a reasonable royalty. CA is infringing the '460 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

72. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '460 patent.

73. As a result of CA's infringement of the '460 patent, Plaintiff has suffered monetary damages, and seeks recovery in an amount adequate to compensate for CA's infringement, but in no event less than a reasonable royalty for the use made of the invention by CA together with interest and costs as fixed by the Court.

Hours, SYMANTEC YOUTUBE CHANNEL (March 3, 2023), available at: <https://www.youtube.com/watch?v=Wmbw4P6F9zo>; and *Symantec Enterprise Cloud – Solution Brief*, SYMANTEC-BROADCOM-CA DOCUMENTATION (JUNE 7, 2022).

COUNT II
INFRINGEMENT OF U.S. PATENT NO. 7,031,314

74. Plaintiff references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

75. CA designs, makes, uses, sells, and/or offers for sale in the United States products for providing differentiated services within a network communication system.

76. CA designs, makes, sells, offers to sell, imports, and/or uses the following products: Advanced Secure Gateway Version 6.7, Advanced Secure Gateway Version 7.3 and later, Edge Secure Web Gateway (Edge SWG) Version 7.4 and later, ProxySG Version 6.7, ProxySG Version 7.3, PacketShaper Version 11.6, PacketShaper Version 11.9, and PacketShaper Version 11.10 and later (collectively, the “CA ‘314 Product(s)”).

77. One or more CA subsidiaries and/or affiliates use the CA ‘314 Products in regular business operations.

78. The CA ‘314 Products comprise a processing unit.

79. The CA ‘314 Products comprise a storage component, functionally connected to the processor, responsible for retaining data and instructions that, upon execution by the processor, direct the processor’s operations.

80. The memory unit in the CA ‘314 Products stores data related to connections, service applications, and other system elements. In addition, the CA ‘314 Products store in memory instructions that guide the processor in classifying connections, forming connections, and redirecting data.

81. The CA ‘314 Products contain functionality for requesting a connection between the client and server to ascertain if it aligns with predefined service criteria, where the predetermined service criteria are linked to at least one of the multiple service applications.

82. The CA '314 Products perform differentiated services within a network communication system. Specifically, The CA '314 Products contain functionality for classifying a connection that has been requested between the client and the server to determine whether the connection matches predetermined service criteria. When a connection is requested, various attributes of the request are analyzed by the CA '314 Products. These attributes could include the source, destination, requested service type, priority, or other data associated with the connection.

83. The CA '314 Products compare attributes associated with a connection against predetermined service criteria. Specifically, the predetermined service criteria can include a set of rules or conditions associated with various service applications.

84. The CA '314 Products contain functionality for establishing an initial connection between the client and the service module, and a subsequent connection between the service module and the server when the connection aligns with the predefined service requirements.

85. The CA '314 Products include functionality that enables forming two connections: a first connection between the client and the service module, and a second connection between the service module and a server. The forming of a first and second connection is done by the CA '314 Products in response to a connection matching the predetermined service criteria.

86. The CA '314 Products orchestrate the formation of a connection between the client and the service module, following the protocols and parameters that relate to the classified service criteria.

87. The CA '314 Products establish a connection between the service module and a server.

88. The CA '314 Products comprise functionality that utilizes the initial and secondary connections to redirect a portion or more of the data communication between the client and a server towards the service application related to the pre-established service parameters.

89. The CA '314 Products comprise a service module that manages the flow of data between the client and the server, directing a portion or all of the data to specific service applications based on the matched criteria.

90. CA has directly infringed and continues to directly infringe the '314 patent by, among other things, making, using, offering for sale, and/or selling technology comprising a system for performing differentiated services within a network communication system, including but not limited to the CA '314 Products.

91. The CA '314 Products are available to businesses and individuals throughout the United States.

92. The CA '314 Products are provided to businesses and individuals located in this District.

93. By making, using, testing, offering for sale, and/or selling products and services comprising a system for performing differentiated services within a network communication system, including but not limited to the CA '314 Products, CA has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the '314 patent, including at least claim 27 pursuant to 35 U.S.C. § 271(a).

94. CA also indirectly infringes the '314 patent by actively inducing infringement under 35 U.S.C. § 271(b).

95. CA has had knowledge of the '314 patent since at least November 20, 2023, when the Original Complaint in this case was filed against CA's parent company, Broadcom Inc. CA

knew of the '314 patent and knew of its infringement, including by way of the filing of the Original Complaint against CA's parent company Broadcom Inc., which identified the '314 patent and explained how each of the accused products infringe the '314 patent.

96. CA has had knowledge of the '314 patent since at least service of this First Amended Complaint or shortly thereafter, and CA knew of the '314 patent and knew of its infringement, including by way of this lawsuit.

97. Alternatively, CA has had knowledge of the '314 patent since at least August 19, 2010, when U.S. Patent Application No. 10/756,152, which is owned by CA's parent company Broadcom, which cites the '314 patent as relevant prior art, was published. In addition, CA's parent company Broadcom has cited the '314 patent family as relevant prior art in at least 43 patents that are assigned to and owned by Broadcom:

- U.S. Patent No. 7,423,977 (granted on September 9, 2008)
- U.S. Patent No. 7,454,500 (granted on November 18, 2008)
- U.S. Patent No. 7,496,651 (granted on February 24, 2009)
- U.S. Patent No. 7,574,508 (granted on August 11, 2009)
- U.S. Patent No. 7,580,356 (granted on August 25, 2009)
- U.S. Patent No. 7,581,009 (granted on August 25, 2009)
- U.S. Patent No. 7,584,301 (granted on September 1, 2009)
- U.S. Patent No. 7,657,629 (granted on February 2, 2010)
- U.S. Patent No. 8,280,998 (granted on October 2, 2012)
- U.S. Patent No. 9,774,707 (granted on September 26, 2017)
- U.S. Patent No. 7,676,576 (granted on March 9, 2010)
- U.S. Patent No. 7,756,965 (granted on July 13, 2010)
- U.S. Patent No. 7,840,678 (granted on November 23, 2010)
- U.S. Patent No. 7,856,020 (granted on December 21, 2010)
- U.S. Patent No. 7,885,188 (granted on February 8, 2011)
- U.S. Patent No. 7,899,899 (granted on March 1, 2011)
- U.S. Patent No. 7,912,911 (granted on March 22, 2011)
- U.S. Patent No. 7,949,757 (granted on May 24, 2011)
- U.S. Patent No. 8,024,441 (granted on September 20, 2011)

- U.S. Patent No. 8,248,928 (granted on August 21, 2012)
- U.S. Patent No. 8,427,958 (granted on April 23, 2013)
- U.S. Patent No. 8,504,721 (granted on August 6, 2013)
- U.S. Patent No. 8,510,428 (granted on August 13, 2013)
- U.S. Patent No. 8,549,148 (granted on October 1, 2013)
- U.S. Patent No. 8,755,279 (granted on June 17, 2014)
- U.S. Patent No. 8,862,740 (granted on October 14, 2014)
- U.S. Patent No. 8,949,850 (granted on February 3, 2015)
- U.S. Patent No. 9,015,323 (granted on April 21, 2015)
- U.S. Patent No. 9,130,954 (granted on September 8, 2015)
- U.S. Patent No. 9,154,394 (granted on October 6, 2015)
- U.S. Patent No. 9,225,775 (granted on December 29, 2015)
- U.S. Patent No. 9,270,566 (granted on February 23, 2016)
- U.S. Patent No. 9,338,182 (granted on May 10, 2016)
- U.S. Patent No. 9,479,574 (granted on October 25, 2016)
- U.S. Patent No. 9,584,360 (granted on February 28, 2017)
- U.S. Patent No. 9,866,484 (granted on January 9, 2018)
- U.S. Patent No. 10,097,462 (granted on October 9, 2018)
- U.S. Patent No. 10,110,712 (granted on October 23, 2018)
- U.S. Patent No. 10,193,852 (granted on January 29, 2019)
- U.S. Patent No. 10,686,916 (granted on June 16, 2020)
- U.S. Patent No. 10,938,966 (granted on March 2, 2021)
- U.S. Patent No. 11,095,603 (granted on August 17, 2021)
- U.S. Patent No. 11,595,503 (granted on February 28, 2023)

98. CA intended to induce patent infringement by third-party customers and users of the CA '314 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. CA specifically intended and was aware that the normal and customary use of the accused products would infringe the '314 patent. CA performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '314 patent and with the knowledge that the induced acts would constitute infringement. For example, CA provides the CA '314 Products that have the capability of operating in a manner that infringe one or more of the claims of the '314 patent,

including at least claim 27, and CA further provides documentation and training materials that cause customers and end users of the CA '314 Products to utilize the products in a manner that directly infringe one or more claims of the '314 patent.¹⁵ By providing instruction and training to customers and end-users on how to use the CA '314 Products in a manner that directly infringes one or more claims of the '314 patent, including at least claim 27, CA specifically intended to induce infringement of the '314 patent. CA engaged in such inducement to promote the sales of the CA '314 Products, e.g., through CA user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '314 patent. Accordingly, CA has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '314 patent, knowing that such use constitutes infringement of the '314 patent.

¹⁵ See e.g., *Blue Coat ProxySG First Steps Solution for HTTP and FTP Object Caching SGOS 6.7*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2018); *ProxySG Packet Capture Utility*, SYMANTEC SUPPORT YOUTUBE CHANNEL (April 6, 2018), available at: <https://www.youtube.com/watch?v=3gEyuyj977c>; *ProxySG Web Visual Policy Manager Reference Version 7.3.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (October 7, 2021); *SGOS Administration Guide Version 6.7.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2022); *SGOS Administration Guide Version 7.3.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2022); *SGOS Administration Guide Version 6.7.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2022); *About Reverse Proxy*, BROADCOM TECH DOCS Website (November 16, 2023), available at: <https://techdocs.broadcom.com/us/en/symantec-security-software/web-and-network-security/edge-swg/7-3/about-reverse-proxy.html>; *PacketShaper PacketGuide 11.10*, SYMANTEC-BROADCOM-CA DOCUMENTATION (November 22, 2022); *PacketShaper PacketGuide 11.9*, SYMANTEC-BROADCOM-CA DOCUMENTATION (May 12, 2020); *PacketShaper PacketGuide 11.6*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2016); *Web Application Classification - PacketShaper 11.10*, SYMANTEC-BROADCOM-CA DOCUMENTATION (June 14, 2019); *Web Application Classification - PacketShaper 11.9*, SYMANTEC-BROADCOM-CA DOCUMENTATION (June 9, 2017); *Web Application Classification - PacketShaper 11.6*, SYMANTEC-BROADCOM-CA DOCUMENTATION (August 24, 2016); *Adaptive Response - PacketShaper 11.10*, SYMANTEC-BROADCOM-CA DOCUMENTATION (June 14, 2019); *Adaptive Response - PacketShaper 11.9*, SYMANTEC-BROADCOM-CA DOCUMENTATION (February 19, 2019); *Adaptive Response - PacketShaper 11.6*, SYMANTEC-BROADCOM-CA DOCUMENTATION (February 19, 2019); *Quick Start Guide PacketShaper PS-S200, PS200-S400, PS-S500*, SYMANTEC BROADCOM DOCUMENTATION (2017); *Advanced Secure Gateway Content Analysis Version 7.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (November 13, 2020); and *Advanced Secure Gateway Content Analysis Administration Guide Version 6.7.5*, SYMANTEC-BROADCOM-CA DOCUMENTATION (November 13, 2020).

99. The '314 patent is well-known within the industry as demonstrated by multiple citations to the '314 patent in published patents and patent applications assigned to technology companies and academic institutions. CA is utilizing the technology claimed in the '314 patent without paying a reasonable royalty. CA is infringing the '314 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

100. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '314 patent.

101. As a result of CA's infringement of the '314 patent, Plaintiff has suffered monetary damages, and seeks recovery in an amount adequate to compensate for CA's infringement, but in no event less than a reasonable royalty for the use made of the invention by CA together with interest and costs as fixed by the Court.

COUNT III
INFRINGEMENT OF U.S. PATENT NO. 7,586,871

102. Plaintiff references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

103. CA designs, makes, uses, sells, and/or offers for sale in the United States products that process data communications passing through a node between a first data network and a second data network.

104. CA designs, makes, sells, offers to sell, imports, and/or uses the following products: Advanced Secure Gateway Version 6.7, Advanced Secure Gateway Version 7.3 and later, Edge Secure Web Gateway (Edge SWG) Version 7.4 and later, ProxySG Version 6.7, ProxySG Version 7.3, PacketShaper Version 11.6, PacketShaper Version 11.9, PacketShaper Version 11.10 and later, (collectively, the "CA '871 Product(s)").

105. One or more CA subsidiaries and/or affiliates use the CA '871 Products in regular business operations.

106. The CA '871 Products detect an event associated with a data communication arriving at the node from a first data network.

107. The CA '871 Products monitor incoming data packets at the node from a first data network.

108. The CA '871 Products determine whether the data communication is to be suspended for service at the node based on the detected event. Specifically, once an event associated with the data communication is detected by the CA '871 Products, the system evaluates the nature and severity of the event. The decision to suspend or allow the communication is based on rules and policies configured by the CA '871 Products.

109. The CA '871 Products determine (based on a detected event) whether the data communication should be suspended at the node.

110. The CA '871 Products process one or more suspended data communications using information in the suspended data communication. Specifically, the CA '871 Products isolate the suspended data communication for (at least in part) the purpose of processing the suspended data communication. Based on the analysis and processing, the CA '871 Products determine how to handle the suspended data communication.

111. The CA '871 Products detect a return data communication arriving at the node from the second data network in response to the processed data communication from the first data network. Further, the CA '871 Products allow the detected return data communication to pass through the node without processing.

112. The CA '871 Products monitor the incoming data communication from the second data network. If the detected return data communication is associated with prior processed data communication from the first network the CA '871 Products determine that the return data communication does not need further processing at the node.

113. The CA '871 Products process a suspended data communication based on information in the data communication.

114. CA has directly infringed and continues to directly infringe the '871 patent by, among other things, making, using, offering for sale, and/or selling technology that process data communications passing through a node between a first data network and a second data network, including but not limited to the CA '871 Products.

115. The CA '871 Products are available to businesses and individuals throughout the United States.

116. The CA '871 Products are provided to businesses and individuals located in this District.

117. By making, using, testing, offering for sale, and/or selling products and services that process data communications passing through a node between a first data network and a second data network, including but not limited to the CA '871 Products, CA has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the '871 patent, including at least claim 1 pursuant to 35 U.S.C. § 271(a).

118. CA also indirectly infringes the '871 patent by actively inducing infringement under 35 U.S.C. § 271(b).

119. CA has had knowledge of the '871 patent since at least November 20, 2023, when the Original Complaint in this case was filed against CA's parent company, Broadcom Inc. CA

knew of the ‘871 patent and knew of its infringement, including by way of the filing of the Original Complaint against CA’s parent company Broadcom Inc., which identified the ‘871 patent and explained how each of the accused products infringe the ‘871 patent.

120. CA has had knowledge of the ‘871 patent since at least service of this First Amended Complaint or shortly thereafter, and CA knew of the ‘871 patent and knew of its infringement, including by way of this lawsuit.

121. CA intended to induce patent infringement by third-party customers and users of the CA ‘871 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. CA specifically intended and was aware that the normal and customary use of the accused products would infringe the ‘871 patent. CA performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the ‘871 patent and with the knowledge that the induced acts would constitute infringement. For example, CA provides the CA ‘871 Products that have the capability of operating in a manner that infringe one or more of the claims of the ‘871 patent, including at least claim 1, and CA further provides documentation and training materials that cause customers and end users of the CA ‘871 Products to utilize the products in a manner that directly infringe one or more claims of the ‘871 patent.¹⁶ By providing instruction and training to

¹⁶ See e.g., *Blue Coat ProxySG First Steps Solution for HTTP and FTP Object Caching SGOS 6.7*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2018); *ProxySG Packet Capture Utility*, SYMANTEC SUPPORT YOUTUBE CHANNEL (April 6, 2018), available at: <https://www.youtube.com/watch?v=3gEyuyj977c>; *ProxySG Web Visual Policy Manager Reference Version 7.3.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (October 7, 2021); *SGOS Administration Guide Version 6.7.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2022); *SGOS Administration Guide Version 7.3.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2022); *SGOS Administration Guide Version 6.7.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2022); *About Reverse Proxy*, BROADCOM TECH DOCS Website (November 16, 2023), available at: <https://techdocs.broadcom.com/us/en/symantec-security-software/web-and-network-security/edge-swg/7-3/about-reverse-proxy.html>; *PacketShaper PacketGuide 11.10*, SYMANTEC-BROADCOM-CA DOCUMENTATION (November 22, 2022); *PacketShaper PacketGuide 11.9*, SYMANTEC-BROADCOM-CA DOCUMENTATION (May 12, 2020); *PacketShaper PacketGuide 11.6*,

customers and end-users on how to use the CA '871 Products in a manner that directly infringes one or more claims of the '871 patent, including at least claim 1, CA specifically intended to induce infringement of the '871 patent. CA engaged in such inducement to promote the sales of the CA '871 Products, e.g., through CA user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '871 patent. Accordingly, CA has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '871 patent, knowing that such use constitutes infringement of the '871 patent.

122. The '871 patent is well-known within the industry as demonstrated by multiple citations to the '871 patent in published patents and patent applications assigned to technology companies and academic institutions. CA is utilizing the technology claimed in the '871 patent without paying a reasonable royalty. CA is infringing the '871 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

123. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '871 patent.

SYMANTEC-BROADCOM-CA DOCUMENTATION (2016); *Web Application Classification - PacketShaper 11.10*, SYMANTEC-BROADCOM-CA DOCUMENTATION (June 14, 2019); *Web Application Classification - PacketShaper 11.9*, SYMANTEC-BROADCOM-CA DOCUMENTATION (June 9, 2017); *Web Application Classification - PacketShaper 11.6*, SYMANTEC-BROADCOM-CA DOCUMENTATION (August 24, 2016); *Adaptive Response - PacketShaper 11.10*, SYMANTEC-BROADCOM-CA DOCUMENTATION (June 14, 2019); *Adaptive Response - PacketShaper 11.9*, SYMANTEC-BROADCOM-CA DOCUMENTATION (February 19, 2019); *Adaptive Response - PacketShaper 11.6*, SYMANTEC-BROADCOM-CA DOCUMENTATION (February 19, 2019); *Quick Start Guide PacketShaper PS-S200, PS200-S400, PS-S500*, SYMANTEC BROADCOM DOCUMENTATION (2017); *Advanced Secure Gateway Content Analysis Version 7.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (November 13, 2020); and *Advanced Secure Gateway Content Analysis Administration Guide Version 6.7.5*, SYMANTEC-BROADCOM-CA DOCUMENTATION (November 13, 2020).

124. As a result of CA's infringement of the '871 patent, Plaintiff has suffered monetary damages, and seeks recovery in an amount adequate to compensate for CA's infringement, but in no event less than a reasonable royalty for the use made of the invention by CA together with interest and costs as fixed by the Court.

COUNT IV
INFRINGEMENT OF U.S. PATENT NO. 8,429,169

125. Plaintiff references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

126. CA designs, makes, uses, sells, and/or offers for sale in the United States products comprising technology for video cache indexing.

127. CA designs, makes, sells, offers to sell, imports, and/or uses the following products: Advanced Secure Gateway Version 6.7, Advanced Secure Gateway Version 7.3 and later, Edge Secure Web Gateway (Edge SWG) Version 7.4 and later, ProxySG Version 6.7, and ProxySG Version 7.3 (collectively, the "CA '169 Product(s)").

128. One or more CA subsidiaries and/or affiliates use the CA '169 Products in regular business operations.

129. The CA '169 Products receive a request for content from a device connected to the Internet. Specifically, when a user makes a request to the CA '169 Products, an HTTP request is sent over the Internet. This HTTP request is received by the CA '169 Products, which are listening for incoming connections on the specific IP address and port number assigned (usually port 80 for HTTP and 443 for HTTPS). The request includes details such as the requested URL, HTTP method (e.g., GET, POST), headers, and any additional data.

130. The CA '169 Products query a web server for a specific segment of content related to the user's content request. Once the CA '169 Products have received and parsed the request,

the CA '169 Products determine how to handle the request based on its configuration rules. If the requested content is not available in the CA '169 Products' caches, the CA '169 Products may act as a reverse proxy and forward the request to the appropriate origin server. The web server processes this request and returns the requested content back to the CA '169 Products.

131. The CA '169 Products identify one or more descriptors for the content corresponding to the user's request, where these descriptors include the particular content segment associated with the initial request.

132. The CA '169 Products compute an index related to the requested content by applying the identified descriptors to a hashing function, wherein this computed index aids in locating a corresponding entry in a cache data structure by matching against indices tied to existing entries.

133. The CA '169 Products, acting as a reverse proxy, receive a request and processes it according to the rules defined in the CA '169 Products' configuration files. The CA '169 Products use the HTTP protocol to communicate with client devices and web servers. When a request is received, the CA '169 Products extract the request line, headers, and body from the request packet. The request line contains the request method (such as GET, POST, PUT, or DELETE), the request URL, and any query string or fragment identifier. The headers contain metadata about the request, such as the client's IP address, browser type, and any authentication credentials. The body contains the data sent with the request, such as form data or file uploads.

134. The CA '169 Products then use the request line and headers to determine how to process the request. For example, if the request method is GET, the CA '169 Products will retrieve the requested content from a web server and return it to the client. If the request method is POST, the CA '169 Products will pass the request body to a web server for processing and return the

server's response to the client. Characterization data includes data such as URL, Content-Type, ETag, Last-Modified date, etc. When the CA '169 Products receive content from the origin server, it also receives headers that contain this metadata. This metadata can be used to characterize the content for caching purposes.

135. When storing a response in the cache, the CA '169 Products generate a key using a hash function. The key can be modified using the `proxy_cache_key` directive. This key is used to store and retrieve the cached content efficiently.

136. Once the CA '169 Products have determined that it needs to retrieve content from a web server, the CA '169 Products send a request to the server using the HTTP protocol. The request includes the request line, headers, and any data from the client's request that needs to be passed to the server. The CA '169 Products can be configured to use different algorithms to choose the web server that will receive the request. For example, the CA '169 Products can use a round-robin algorithm to distribute requests across multiple servers, or the CA '169 Products can use a least-connections algorithm to send requests to the server with the fewest active connections.

137. Once the request is sent to the web server, the CA '169 Products wait for the server's response. The response includes a status line, headers, and a body containing the requested content. The CA '169 Products then extract the content from the response body and store it in a cache.

138. The CA '169 Products process the content to identify characterization data that can be used to cache the content. The characterization data is a compact representation of the content that allows the CA '169 Products to quickly determine whether it has a cached copy of the content that is identical to the requested content. The CA '169 Products can use various algorithms to generate characterization data, such as a checksum, a hash function, or a compression algorithm.

For example, a checksum can be used for small pieces of data, while a hash function can be used for larger pieces of data. The characterization data is then stored in the CA '169 Products cache, along with the content, so that it can be quickly retrieved when a subsequent request for the same content is received.

139. The CA '169 Products generate an index corresponding to content associated with the received content request by inputting the at least one identified characterization data into a hash function, wherein the generated index is used for identifying, in the cache data structure, an entry associated with the content by comparing the generated index to one or more index fields associated with one or more entries within the cache data structure.

140. The CA '169 Products use a hash function to generate an index that corresponds to the content. The hash function takes the characterization data as input and generates a unique output that can be used to identify the content in the CA '169 Products' cache. The hash function used by the CA '169 Products can be a simple hash function, such as the Jenkins hash function, or a more complex hash function, such as the SHA-256 hash function.

141. CA has directly infringed and continues to directly infringe the '169 patent by, among other things, making, using, offering for sale, and/or selling technology comprising video cache indexing, including but not limited to the CA '169 Products.

142. The CA '169 Products are available to businesses and individuals throughout the United States.

143. The CA '169 Products are provided to businesses and individuals located in this District.

144. By making, using, testing, offering for sale, and/or selling products and services comprising technology for video cache indexing, including but not limited to the CA '169

Products, CA has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the '169 patent, including at least claim 1 pursuant to 35 U.S.C. § 271(a).

145. CA also indirectly infringes the '169 patent by actively inducing infringement under 35 U.S.C. § 271(b).

146. CA has had knowledge of the '169 patent since at least November 20, 2023, when the Original Complaint in this case was filed against CA's parent company, Broadcom Inc. CA knew of the '169 patent and knew of its infringement, including by way of the filing of the Original Complaint against CA's parent company Broadcom Inc., which identified the '169 patent and explained how each of the accused products infringe the '169 patent.

147. CA has had knowledge of the '169 patent since at least service of this First Amended Complaint or shortly thereafter, and CA knew of the '169 patent and knew of its infringement, including by way of this lawsuit.

148. CA intended to induce patent infringement by third-party customers and users of the CA '169 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. CA specifically intended and was aware that the normal and customary use of the accused products would infringe the '169 patent. CA performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '169 patent and with the knowledge that the induced acts would constitute infringement. For example, CA provides the CA '169 Products that have the capability of operating in a manner that infringe one or more of the claims of the '169 patent, including at least claim 1, and CA further provides documentation and training materials that cause customers and end users of the CA '169 Products to utilize the products in a manner that directly

infringe one or more claims of the ‘169 patent.¹⁷ By providing instruction and training to customers and end-users on how to use the CA ‘169 Products in a manner that directly infringes one or more claims of the ‘169 patent, including at least claim 1, CA specifically intended to induce infringement of the ‘169 patent. CA engaged in such inducement to promote the sales of the CA ‘169 Products, e.g., through CA user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the ‘169 patent. Accordingly, CA has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the ‘169 patent, knowing that such use constitutes infringement of the ‘169 patent.

149. The ‘169 patent is well-known within the industry as demonstrated by multiple citations to the ‘169 patent in published patents and patent applications assigned to technology companies and academic institutions. CA is utilizing the technology claimed in the ‘169 patent without paying a reasonable royalty. CA is infringing the ‘169 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

¹⁷ See e.g., *Advanced Secure Gateway Content Analysis Version 7.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (November 13, 2020); *Advanced Secure Gateway Content Analysis Administration Guide Version 6.7.5*, SYMANTEC-BROADCOM-CA DOCUMENTATION (November 13, 2020); *Blue Coat ProxySG First Steps Solution for HTTP and FTP Object Caching SGOS 6.7*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2018); *ProxySG Packet Capture Utility*, SYMANTEC SUPPORT YOUTUBE CHANNEL (April 6, 2018), available at: <https://www.youtube.com/watch?v=3gEyuyj977c>; *ProxySG Web Visual Policy Manager Reference Version 7.3.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (October 7, 2021); *SGOS Administration Guide Version 6.7.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2022); *SGOS Administration Guide Version 7.3.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2022); *SGOS Administration Guide Version 6.7.x*, SYMANTEC-BROADCOM-CA DOCUMENTATION (2022); and *About Reverse Proxy*, BROADCOM TECH DOCS Website (November 16, 2023), available at: <https://techdocs.broadcom.com/us/en/symantec-security-software/web-and-network-security/edge-swg/7-3/about-reverse-proxy.html>.

150. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the ‘169 patent.

151. As a result of CA’s infringement of the ‘169 patent, Plaintiff has suffered monetary damages, and seek recovery in an amount adequate to compensate for CA’s infringement, but in no event less than a reasonable royalty for the use made of the invention by CA together with interest and costs as fixed by the Court.

COUNT V
INFRINGEMENT OF U.S. PATENT NO. 9,167,021

152. Plaintiff references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

153. CA designs, makes, uses, sells, and/or offers for sale in the United States products comprising technology for HTTP transaction analysis for web browsing session segmentation.

154. CA designs, makes, sells, offers to sell, imports, and/or uses the following products: DX App Synthetic Monitor SaaS and DX Application Performance Management Versions 22.1, 23.1, 23.2, 23.3 and later (collectively, the “CA ‘021 Product(s)”).

155. One or more CA subsidiaries and/or affiliates use the CA ‘021 Products in regular business operations.

156. The CA ‘021 Products capture an ongoing Hypertext Transfer Protocol (HTTP) interaction.

157. The CA ‘021 Products ascertain if the active HTTP interaction is associated with web browsing.

158. The CA ‘021 Products analyze the “User-Agent” string within HTTP headers to distinguish between various types of HTTP traffic. This includes differentiating between actual web browsers and, for example, API requests or bots.

159. The CA '021 Products retrieve a historical set of transactions for a designated client.

160. The CA '021 Products employ browser cookies, LocalStorage, and server-side session IDs to store and fetch a historical set of transactions specific to a client.

161. The CA '021 Products assess if the active HTTP interaction is related to the archived set of transactions for that client.

162. The CA '021 Products employ sequence pattern recognition to understand whether a current HTTP transaction logically fits within a set of prior transactions.

163. The CA '021 Products, upon confirming the active HTTP interaction's relation to the historical set, incorporate the current interaction into that set.

164. Upon determining that a transaction is related to the prior set, the CA '021 Products update their data structures to include the new transaction as a part of the existing set. This involves manipulating data objects that contain HTTP transactions as properties or list elements.

165. When the active HTTP interaction is deemed unrelated to the historical transaction set, the CA '021 Products delineate a page unit comprising the archived HTTP interactions for the purpose of calculating page unit time.

166. In cases where a transaction is evaluated as not belonging to the current set, a 'page boundary' is created by the CA '021 Products. This boundary serves as a cutoff for metrics calculations like average time spent on a page or session.

167. CA has directly infringed and continues to directly infringe the '021 patent by, among other things, making, using, offering for sale, and/or selling technology comprising HTTP transaction analysis for web browsing session segmentation, including but not limited to the CA '021 Products.

168. The CA '021 Products are available to businesses and individuals throughout the United States.

169. The CA '021 Products are provided to businesses and individuals located in this District.

170. By making, using, testing, offering for sale, and/or selling products and services comprising technology for HTTP transaction analysis for web browsing session segmentation, including but not limited to the CA '021 Products, CA has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the '021 patent, including at least claim 1 pursuant to 35 U.S.C. § 271(a).

171. CA also indirectly infringes the '021 patent by actively inducing infringement under 35 U.S.C. § 271(b).

172. CA has had knowledge of the '021 patent since at least November 20, 2023, when the Original Complaint in this case was filed against CA's parent company, Broadcom Inc. CA knew of the '021 patent and knew of its infringement, including by way of the filing of the Original Complaint against CA's parent company Broadcom Inc., which identified the '021 patent and explained how each of the accused products infringe the '021 patent.

173. CA has had knowledge of the '021 patent since at least service of this First Amended Complaint or shortly thereafter, and CA knew of the '021 patent and knew of its infringement, including by way of this lawsuit.

174. CA intended to induce patent infringement by third-party customers and users of the CA '021 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. CA specifically intended and was aware that the normal and customary use of the accused products would infringe

the '021 patent. CA performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '021 patent and with the knowledge that the induced acts would constitute infringement. For example, CA provides the CA '021 Products that have the capability of operating in a manner that infringe one or more of the claims of the '021 patent, including at least claim 1, and CA further provides documentation and training materials that cause customers and end users of the CA '021 Products to utilize the products in a manner that directly infringe one or more claims of the '021 patent.¹⁸ By providing instruction and training to customers and end-users on how to use the CA '021 Products in a manner that directly infringes one or more claims of the '021 patent, including at least claim 1, CA specifically intended to induce infringement of the '021 patent. CA engaged in such inducement to promote the sales of the CA '021 Products, e.g., through CA user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '021 patent. Accordingly, CA has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '021 patent, knowing that such use constitutes infringement of the '021 patent.

¹⁸ See e.g., *White Paper: Monitoring Redefined: Digital Experience Insights Deliver a flawless digital experience with analytics-driven insights*, CA-BROADCOM DOCUMENTATION (MAY 2017); *DX App Synthetic Monitor SaaS Getting Started Guide*, CA-BROADCOM DOCUMENTATION (2023); *DX App Synthetic Monitoring: Learn to Setup a Webdriver in 5 Minutes*, BROADCOM EDUCATE YOUTUBE CHANNEL (October 6, 2021), available at: <https://www.youtube.com/watch?v=cZjVxcORSR0>; *DX App Synthetic Monitor SaaS – On Premise Monitoring Stations (OPMS)*, CA-BROADCOM DOCUMENTATION (2023); (2023); *How to Get Started with Real Browser Monitoring in DX App Synthetic Monitor*, BROADCOM EDUCATE YOUTUBE CHANNEL (May 21, 2020), available at: <https://www.youtube.com/watch?v=nJiM1WhkBQE>; *DX App Synthetic Monitor SaaS – Usage Data (Telemetry)*, CA-BROADCOM DOCUMENTATION (2023); *DX Application Performance Management - 22.1*, BROADCOM DOCUMENTATION (2022); and *DX Application Performance Management - 23.2*, BROADCOM DOCUMENTATION (2023).

175. The '021 patent is well-known within the industry as demonstrated by multiple citations to the '021 patent in published patents and patent applications assigned to technology companies and academic institutions. CA is utilizing the technology claimed in the '021 patent without paying a reasonable royalty. CA is infringing the '021 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

176. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '021 patent.

177. As a result of CA's infringement of the '021 patent, Plaintiff has suffered monetary damages, and seek recovery in an amount adequate to compensate for CA's infringement, but in no event less than a reasonable royalty for the use made of the invention by CA together with interest and costs as fixed by the Court.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff OptiMorphix, Inc. respectfully requests that this Court enter:

- A. A judgment in favor of Plaintiff that CA has infringed, either literally and/or under the doctrine of equivalents, the '460, '314, '871, '169, and '021 patents;
- B. An award of damages resulting from CA's acts of infringement in accordance with 35 U.S.C. § 284;
- C. A judgment and order finding that CA's infringement was willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate within the meaning of 35 U.S.C. § 284 and awarding to Plaintiff enhanced damages.

- D. A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to Plaintiff reasonable attorneys' fees against CA.
- E. Any and all other relief to which Plaintiff may show themselves to be entitled.

JURY TRIAL DEMANDED

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

Dated: February 23, 2024

Respectfully submitted,

/s/ Daniel P. Hipskind

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CERTIFICATE OF SERVICE

The undersigned counsel hereby certifies that on February 23, 2024, a copy of the foregoing document was served on all counsel who have appeared in this case via email.

/s/ Daniel P. Hipskind
Daniel P. Hipskind