

## TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

ETAS ID: TM541852

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT		
<b>NATURE OF CONVEYANCE:</b>	RELEASE OF SECURITY INTEREST		
<b>CONVEYING PARTY DATA</b>			
<b>Name</b>	<b>Formerly</b>	<b>Execution Date</b>	<b>Entity Type</b>
SILICON VALLEY BANK		09/19/2019	Corporation: CALIFORNIA
<b>RECEIVING PARTY DATA</b>			
<b>Name:</b>	BAREFOOT NETWORKS, INC.		
<b>Street Address:</b>	4750 Patrick Henry Dr.		
<b>City:</b>	Santa Clara		
<b>State/Country:</b>	CALIFORNIA		
<b>Postal Code:</b>	95054		
<b>Entity Type:</b>	Corporation: DELAWARE		
<b>PROPERTY NUMBERS Total: 3</b>			
<b>Property Type</b>	<b>Number</b>	<b>Word Mark</b>	
<b>Registration Number:</b>	5746571	BAREFOOT	
<b>Registration Number:</b>	5745897	BAREFOOT NETWORKS	
<b>Registration Number:</b>	5745898		
<b>CORRESPONDENCE DATA</b>			
<b>Fax Number:</b>			
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>			
<b>Email:</b>	aprilwhite@paulhastings.com		
<b>Correspondent Name:</b>	April White		
<b>Address Line 1:</b>	4747 Executive Dr.		
<b>Address Line 4:</b>	San Diego, CALIFORNIA 92121		
<b>NAME OF SUBMITTER:</b>	April K White		
<b>SIGNATURE:</b>	/April K White/		
<b>DATE SIGNED:</b>	09/20/2019		
<b>Total Attachments: 19</b>			
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**TERMINATION AND RELEASE OF  
INTELLECTUAL PROPERTY SECURITY AGREEMENT**

This **TERMINATION AND RELEASE OF INTELLECTUAL PROPERTY SECURITY AGREEMENT** (this "*Termination and Release*") is granted as of September 19, 2019 by **SILICON VALLEY BANK** (the "*Bank*") in favor of **BAREFOOT NETWORKS, INC.**, a Delaware corporation (the "*Grantor*");

**WHEREAS**, the Grantor executed and delivered an Intellectual Property Security Agreement ("*Agreement*"), dated as of June 24, 2019 (as amended, restated, supplemented or otherwise modified prior to the date hereof, the "*Trademark Collateral*"), granting the Bank a lien on and security interest in and to all of its right, title and interest in, to and under the Trademark and Trademark Applications ("*Trademarks*"), notice of which was recorded with the United States Patent and Trademark Office ("*USPTO*") on June 26, 2019 at Reel 6679, Frame 0153;

**WHEREAS**, the Grantor executed and delivered an Intellectual Property Security Agreement dated as of June 24, 2019 (as amended, restated, supplemented or otherwise modified prior to the date hereof, the "*Patent Collateral*"), granting the Bank a lien on and security interest in and to all of its right, title and interest in, to and under the Patent and Patent Applications ("*Patents*") notice of which was recorded with the United States Patent and Trademark Office ("*USPTO*") on June 25, 2019 at Reel 049588, Frame 0112;

**WHEREAS**, Grantor has requested that Bank hereby terminate, release and discharge fully its security interests in and liens on all right, title and interest of Grantor in, to and under all of the Trademarks and Patents (as defined in the Agreement) as herein provided; and

**WHEREAS**, Grantor has requested that the Bank provide a document suitable for recording in the USPTO to evidence the release of the Bank's security interests in and liens on the Trademarks and Patents as herein provided.

**NOW, THEREFORE**, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Bank hereby:

1. terminates the Grant and releases, terminates and discharges all liens and security interests in Grantor's right, title and interest in, to and under the Trademarks, and all goodwill associated therewith, including those Trademarks identified in **Schedule A** hereto; and
2. terminates the Grant and releases, terminates and discharges all liens and security interests in Grantor's right, title and interest in, to and under the Patents, and all goodwill associated therewith, including those Patents identified in **Schedule B** hereto; and
3. authorizes and requests that this Termination and Release be recorded at the USPTO.

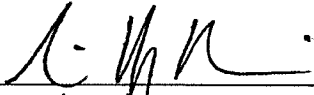
THIS TERMINATION AND RELEASE AND ANY CLAIM, CONTROVERSY, DISPUTE OR CAUSE OF ACTION (WHETHER IN CONTRACT OR TORT OR OTHERWISE) BASED

UPON, ARISING OUT OF OR RELATING TO THIS TERMINATION AND RELEASE AND THE TRANSACTIONS CONTEMPLATED HEREBY SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAW OF THE STATE OF CALIFORNIA.

[Signature page follows]

IN WITNESS WHEREOF, the undersigned has executed this Termination and Release by its duly authorized officer as of the date first above written.

**SILICON VALLEY BANK**

By:   
Name: Mei Chui  
Title: Managing Director

SCHEDULE A  
TRADEMARKS AND TRADEMARK APPLICATIONS

(see attached)

Barefoot Networks – Active Trademark Status Report - April 2019

Mark	Country	Status	Class Goods/Services	Application No.	Application Date	Registration No.	Registration Date	Status/Next Due Date
BAREFOOT	United States	Allowed	Class 09: Integrated circuits; computer networking systems, namely, computer hardware and operating system software for operating computer networks	87/683090	Nov-13-2017			Statement of Use Filed. Awaiting review.
BAREFOOT	United States	Allowed	Class 41: Education services, namely, organizing and providing live, broadcast, and on-line classes, seminars, webinars, conferences, workshops, training and curriculum development in the field of networking technology	87/683099	Nov-13-2017			Statement of Use or EOT3 Due Oct-03-2019
BAREFOOT	United States	Allowed	Class 42: Providing design, development, maintenance and support for the development, deployment, installation, implementation, analysis, modification, integration and management of computer software, computer hardware, and computer networks; technical consulting and research services in the fields of computer software, computer hardware, and computer networks; customization and configuration of computer software, computer hardware, and computer networks; technical support services, namely, trouble-shooting in the nature of diagnosing computer software, computer hardware, and computer network problems	87/683114	Nov-13-2017			Statement of Use or EOT3 Due Oct-03-2019

TRADEMARK

REEL: 006751 FRAME: 0007

Mark	Country	Status	Class Goods/Services	Application No.	Application Date	Registration No.	Registration Date	Status/Next Due Date
<b>BAREFOOT</b> BAREFOOT & Design	European Union	Registered	<p><b>Class 09:</b> Integrated circuits; computer networking systems; namely, computer hardware and operating system software for operating computer networks; computer hardware; computer software; downloadable computer software; downloadable instruction manuals in electronic form; electronic circuits; printed circuits; control circuits; electrical circuits; printed electronic circuits; microchips; semiconductors; integrated electronic circuits; hybrid integrated circuits; large scale integrated circuits; electronic memory circuits; printed circuit boards incorporating integrated circuits; parts and fittings for the aforesaid goods.</p> <p><b>Class 41:</b> Education services; namely, organizing, sponsoring, and providing live, broadcast, and on-line classes, seminars, webinars, conferences, workshops, training and curriculum development in the field of networking technology; education; providing of training; arranging and conducting of conferences, congresses and seminars.</p> <p><b>Class 42:</b> Providing design, development, maintenance and support for the development, deployment, installation, implementation, analysis, modification, integration and management of computer software; computer hardware, and computer networks; technical consulting and research services in the fields of computer software, computer hardware, and computer networks; customization and configuration of computer software, computer hardware, and computer networks; technical support services; namely, troubleshooting in the nature of diagnosing computer software, computer hardware, and computer network problems; updating of computer software; maintenance of computer software; computer software design; computer programming; computer system design; duplication of computer programs.</p>	017395294	Oct-27-2017	017395294	Feb-22-2018	Renewal Deadline Oct-27-2027

TRADEMARK

REEL: 006751 FRAME: 0008



Mark	Country	Status	Class/Services	Application No.	Application Date	Registration No.	Registration Date	Status/Next Due Date
<b>BAREFOOT</b> BAREFOOT & Design	India	Allowed	<p><b>Class 09:</b> Integrated circuits; computer networking systems; namely, computer hardware and operating system software for operating computer networks</p> <p><b>Class 41:</b> Education services, namely organizing, sponsoring, and providing live, broadcast, and on-line classes, seminars, webinars, conferences, workshops, training and curriculum development in the field of network technology.</p> <p><b>Class 42:</b> Providing design, development, maintenance and support for the development, deployment, installation, implementation, analysis, modification, integration and management of computer software; computer hardware, and computer networks; technical consulting and research services in the fields of computer software; computer hardware; and computer networks; customization and configuration of computer software; computer hardware, and computer networks; technical support services, namely, trouble-shooting in the nature of diagnosing computer software, computer hardware, and computer network problems.</p>	36821787	Nov-20-2017			Application accepted and will publish shortly.

**TRADEMARK**

**REEL: 006751 FRAME: 0009**

Mark	Country	Status	Class Goods/Services	Application No.	Application Date	Registration No.	Registration Date	Status/Next Due Date
<b>BAREFOOT</b> BAREFOOT & Design	Japan	Registered	<p><b>Class 09:</b> Integrated circuits; computer networking systems; namely, computer hardware and operating system software for operating computer networks; electronic machines, apparatus and their parts.</p> <p><b>Class 41:</b> Education services; namely, organizing, sponsoring, and providing live, broadcast, and on-line classes, seminars, webinars, conferences, workshops, training and curriculum development in the field of networking technology.</p> <p><b>Class 42:</b> Providing design, development, maintenance and support for the development, deployment, installation, implementation, analysis, modification, integration and management of computer software, computer hardware, and computer networks; technical consulting and research services in the fields of computer software; computer hardware, and computer networks; customization and configuration of computer software, computer hardware, and computer networks; technical support services; namely, trouble-shooting in the nature of diagnosing computer software, computer hardware, and computer network problems.</p>	2017-143812	Oct-31-2017	6099428	Nov-16-2018	Registration Fee 2nd installment deadline Nov-16-2023

**TRADEMARK**

**REEL: 006751 FRAME: 0010**

TRADEMARK

Mark	Country	Status	Class Goods/Services	Application No.	Application Date	Registration No.	Registration Date	Status/Next Due Date
<b>BAREFOOT</b> BAREFOOT & Design	Republic of Korea	Registered	Class 09: Computer networking systems, namely, computer hardware and operating system software for operating computer networks Class 41: Education services, namely organizing, sponsoring, and providing live, broadcast, and on-line classes, seminars, webinars, conferences, workshops, training and curriculum development in the field of network technology. Class 42: Providing design, development, maintenance and support for the development, deployment, installation, implementation, analysis, modification, integration and management of computer software, computer hardware, and computer networks; technical consulting and research services in the fields of computer software, computer hardware, and computer networks; customization and configuration of computer software; computer hardware, and computer networks; technical support services, namely, trouble-shooting in the nature of diagnosing computer software, computer hardware, and computer network problems.	40-2017-0136731	Oct-30-2017	40-1386392	Aug-10-2018	Renewal Deadline Aug-10-2028

Mark	Country	Status	Class/Services	Application No.	Application Date	Registration No.	Registration Date	Status/Next Due Date
<b>BAREFOOT</b> BAREFOOT & Design	Taiwan	Registered	Class 09: Integrated circuits; computer networking systems; namely, computer hardware and operating system software for operating computer networks. Class 41: Education services; namely, organizing, sponsoring, and providing live, broadcast, and on-line classes, seminars, webinars, conferences, workshops, training and curriculum development in the field of networking technology. Class 42: Providing design, development, maintenance and support for the development, deployment, installation, implementation, analysis, modification, integration and management of computer software; computer hardware, and computer networks; technical consulting and research services in the fields of computer software; computer hardware, and computer networks; customization and configuration of computer software; computer hardware, and computer networks; technical support services; namely, trouble-shooting in the nature of diagnosing computer software, computer hardware, and computer network problems.	106078106	Dec-08-2017	01937494	Sep-01-2018	Renewal Deadline Aug-31-2028
BAREFOOT NETWORKS	United States	Allowed	Class 09: Integrated circuits; computer networking systems; namely, computer hardware and operating system software for operating computer networks	87/041451	May-18-2016			Statement of Use Filed. Awaiting review.
BAREFOOT NETWORKS	United States	Allowed	Class 41: Education services; namely, organizing and providing live, broadcast, and on-line classes, seminars, webinars, conferences, workshops, training and curriculum development in the field of networking technology	87/588778	Aug-29-2017			Statement of Use or EOT3 Due Sep-27-2019



TRADEMARK


REEL: 006751 FRAME: 0012

Mark	Country	Status	Class Goods/Services	Application No.	Application Date	Registration No.	Registration Date	Status/Next Due Date
BAREFOOT NETWORKS	United States	Allowed	Class 42: Providing design, development, maintenance and technical support for the development, deployment, installation, implementation, analysis, modification, integration and management of computer software and computer networks; technical consulting and research services in the fields of computer software, computer hardware, and computer networks; customization and configuration of computer software, computer hardware, and computer networks; technical support services, namely, trouble-shooting in the nature of diagnosing computer software, computer hardware, and computer network problems	87/588826	Aug-29-2017			Statement of Use or EOT3 Due Sep-27-2019
BAREFOOT NETWORKS BAREFOOT NETWORKS & Design	China	Published	Class 09: Computer network server; Computer operating software; Computer hardware; Plotters; Photocopiers [photographic, electrostatic, thermic]; Teleprinters / teletypewriters; Electronic notice boards; Light-emitting electronic pointers; Digital signs; Network communication device; Cameras [photography]; Screens [photography]; Projection apparatus; Surveying instruments; Counters/ meters; Computerized vehicle engines analyzer; Integrated circuits	27908973	Dec-06-2017			If no oppositions are filed, application will register shortly.
BAREFOOT NETWORKS BAREFOOT NETWORKS & Design	China	Registered	Class 41: Educational services; Instruction services; Coaching [training]; Training for communication technology; Arranging and conducting of conferences; Arranging and conducting of workshops [training]; Arranging and conducting of seminars; Lending library services; Mobile library services; Bookmobile services; Library for literature and documentary records reference; Publication of books; Providing on-line electronic publications, not downloadable; Electronic desktop publishing; On-line publication of electronic books and journals; Distribution of video cassettes; Providing on-line videos, not downloadable; Game services provided on-line from a computer network	27908974	Dec-06-2017	27908974	Dec-14-2018	Renewal Deadline Dec-13-2028

TRADEMARK

REEL: 006751 FRAME: 0013

Mark	Country	Status	Class Goods/Services	Application No.	Application Date	Registration No.	Registration Date	Status/Next Due Date
<b>BAREFOOT NETWORKS</b> BAREFOOT NETWORKS & Design	China	Registered	Class 42: Technical project studies; Telecommunications technology consultancy; Quality checking and testing; Quality system certification; Design and development for multi-media products; Industrial design; Computer programming; Computer software design; Updating of computer software; Computer system analysis; Computer system design; Computer hardware design; Computer security consultancy; Duplication of computer programs; Providing information on computer technology and programming via a web site; Maintenance of computer software; Recovery of computer data; Computer virus protection services; monitoring of computer systems to detect breakdowns	27908975	Dec-06-2017	27908975	Nov-21-2018	Renewal Deadline Nov-20-2028
CAPILANO	United States	Allowed	Class 09: Software development kit for developing software for integrated circuits	87/070851	Jun-14-2016			Statement of Use or EOT5 Due Jun-06-2019
DEEP INSIGHT	United States	Allowed	Class 09: Integrated circuits, networks servers, and computer network switches	87/676751	Nov-08-2017			Statement of Use or EOT3 Due Sept-13-2019
 INFINITY FOOT LOGO	United States	Allowed	Class 09: Integrated circuits; computer networking systems, namely, computer hardware and software for operating computer networks	87/041494	May-18-2016			Statement of Use Filed. Awaiting review.
 INFINITY FOOT LOGO	United States	Allowed	Class 41: Education services, namely, organizing and providing live, broadcast, and on-line classes, seminars, webinars, conferences, workshops, training and curriculum development in the field of networking technology	87/588811	Aug-29-2017			Statement of Use or EOT3 Due Sep-27-2019

Mark	Country	Status	Class Goods/Services	Application No.	Application Date	Registration No.	Registration Date	Status/Next Due Date
 INFINITY FOOT LOGO	United States	Allowed	Class 42: Providing design, development, maintenance and technical support for the development, deployment, installation, implementation, analysis, modification, integration and management of computer software and computer networks; technical consulting and research services in the fields of computer software, computer hardware, and computer networks; customization and configuration of computer software, computer hardware, and computer networks; technical support services, namely, trouble-shooting in the nature of diagnosing computer software, computer hardware, and computer network problems	87/588836	Aug-29-2017			Statement of Use or EOT3 Due Sep-27-2019
	European Union	Registered	Class 09: Integrated circuits; electronic circuits; printed circuits; control circuits; electrical circuits; semiconductor; integrated electronic circuits; hybrid integrated circuits; large scale integrated circuits; electronic memory circuits; printed circuit boards incorporating integrated circuits; parts and fittings for the aforesaid goods	017390915	Oct-26-2017	017390915	Feb-09-2018	Renewal Deadline Nov-20-2027
	India	Registered	Class 09: Integrated circuits	3682177	Nov-20-2017	3682177	Jun-01-2018	Renewal Deadline Nov-20-2027
	Japan	Pending	Class 09: Integrated circuits	2017-142686	Oct-27-2017			Refusal issued and response filed Oct-2018. Awaiting review.
	Republic of Korea	Registered	Class 09: Integrated circuits	40-2017-0136089	Oct-27-2017	40-1375536	Jul-06-2018	Renewal Deadline Jul-06-2028
TOFINO	Taiwan	Registered	Class 09: Integrated circuits	106078105	Dec-08-2017	01926206	Jul-16-2018	Renewal Deadline Jul-15-2028
TOFINO	United States	Allowed	Class 09: Integrated circuits	87/058463	Jun-02-2016			Statement of Use or EOT4 Due May-09-2019

TRADEMARK

REEL: 006751 FRAME: 0015

SCHEDULE B  
PATENTS AND PATENT APPLICATIONS

(see attached)



Title	Application No.	Patent No.	Publication No.	Filing Date
PROXY HASH TABLE	14/507,811	9529531	20160098198	10/6/2014
PROXY HASH TABLE	15/365,887	10268634	-	11/30/2016
PROXY HASH TABLE	16/271,669	-	-	2/8/2019
FAST ADJUSTING LOAD BALANCER	14/507,814	10063479	20160099872	10/6/2014
FAST ADJUSTING LOAD BALANCER	16/049,154	-	20180337860	7/30/2018
HASH TABLE STORING REDUCED SEARCH KEY	15/006,151	10067967	-	1/26/2016
HASH TABLE STORING REDUCED SEARCH KEY	16/047,032	-	-	7/27/2018
HASH TABLE STORING REDUCED SEARCH KEY	62/108,508	-	-	1/27/2015
DYNAMIC MEMORY REALLOCATION FOR MATCH-ACTION PACKET PROCESSING	15/007,209	9880768	20160216913	1/27/2016
DYNAMIC MEMORY REALLOCATION FOR MATCH-ACTION PACKET PROCESSING	16/108,516	-	-	8/22/2018
DYNAMIC MEMORY REALLOCATION FOR MATCH-ACTION PACKET PROCESSING	15/784,336	10078463	-	10/16/2017
DYNAMIC MEMORY REALLOCATION FOR MATCH-ACTION PACKET PROCESSING	62/108,409	-	-	1/27/2015
Virtual Addresses for Action Memories	14/968,840	-	20160246541	12/14/2015
Virtual Memory Pages	62/119,786	-	-	2/23/2015
FAST DETECTION AND IDENTIFICATION OF LOST PACKETS	14/832,221	10044583	20170054619	8/21/2015
PACKET HEADER FIELD EXTRACTION	14/836,850	9825862	20170063690	8/26/2015
PACKET HEADER FIELD EXTRACTION	15/729,555	-	-	10/10/2017
ALGORITHMIC TCAM BASED TERNARY LOOKUP	15/094,914	10318587	-	4/8/2016
ALGORITHMIC TCAM BASED TERNARY LOOKUP	16/383,448	-	-	4/12/2019
ALGORITHMIC TCAM BASED TERNARY LOOKUP	62/221,071	-	-	9/20/2015
IDENTIFYING AND MARKING FAILED EGRESS LINKS IN DATA PLANE	15/150,015	10063407	-	5/9/2016
IDENTIFYING AND MARKING FAILED EGRESS LINKS IN DATA PLANE	16/048,202	-	-	7/27/2018
IDENTIFYING AND MARKING FAILED EGRESS LINKS IN DATA PLANE	62/292,498	-	-	2/8/2016
RESILIENT HASHING FOR FORWARDING PACKETS	15/094,987	10313231	-	4/8/2016
RESILIENT HASHING FOR FORWARDING PACKETS	16/378,491	-	-	4/8/2019
RESILIENT HASHING FOR FORWARDING PACKETS	62/292,507	-	-	2/8/2016
DATA-PLANE STATEFUL PROCESSING UNITS IN PACKET PROCESSING PIPELINES	14/863,961	9912610	20170093986	9/24/2015
DATA-PLANE STATEFUL PROCESSING UNITS IN PACKET PROCESSING PIPELINES	15/888,050	-	20180234355	2/4/2018
FAST DETECTION AND IDENTIFICATION OF LOST PACKETS	14/836,872	10110454	20170054618	8/26/2015
FAST DETECTION AND IDENTIFICATION OF LOST PACKETS	16/108,570	-	20190058646	8/22/2018
Virtual Addresses for Match Memories	14/968,843	-	20160246532	12/14/2015
Coding Scheme for Indirect Addressing of Multiple Action Memories	14/968,844	9910615	20160246535	12/14/2015
Coding Scheme for Indirect Addressing of Multiple Action Memories	15/898,162	10303387	20180239551	2/15/2018
Coding Scheme for Indirect Addressing of Multiple Action Memories	16/376,902	-	-	4/5/2019
CONFIGURING A SWITCH FOR EXTRACTING PACKET HEADER FIELDS	14/836,855	9826071	20170064047	8/26/2015

CONFIGURING A SWITCH FOR EXTRACTING PACKET HEADER FIELDS	15/729,593	10225381	-	10/10/2017
CONFIGURING A SWITCH FOR EXTRACTING PACKET HEADER FIELDS	16/288,074	-	-	2/27/2019
Path and Latency Tracking	62/340,046	-	-	5/23/2016
DATA-PLANE STATEFUL PROCESSING UNITS IN PACKET PROCESSING PIPELINES	14/864,032	9923816	20170093707	9/24/2015
DATA-PLANE STATEFUL PROCESSING UNITS IN PACKET PROCESSING PIPELINES	15/888,054	-	20180234340	2/4/2018
DATA-PLANE STATEFUL PROCESSING UNITS IN PACKET PROCESSING PIPELINES	14/864,088	-	20170093987	9/24/2015
GENERATING CONFIGURATION DATA AND API FOR PROGRAMMING A FORWARDING ELEMENT	15/071,527	-	-	3/16/2016
Storing Packet Data in Mirror Buffer	15/161,263	10230810	-	5/22/2016
Storing Packet Data in Mirror Buffer	16/289,001	-	-	2/28/2019
Packet Coalescing in Mirror Buffer	62/310,608	-	-	3/18/2016
FLEXIBLE PACKET REPLICATION AND FILTERING FOR MULTICAST/BROADCAST	15/091,550	10038624	-	4/5/2016
FLEXIBLE PACKET REPLICATION AND FILTERING FOR MULTICAST/BROADCAST	16/024,985	-	-	7/2/2018
CODING SCHEME FOR IDENTIFYING LOCATION OF ACTION ENTRIES	14/968,847	9940056	20160246507	12/14/2015
Coding Scheme for Identifying Location of Action Entries	15/898,172	10133499	20180173448	2/15/2018
PACKET GENERATION IN THE DATA PLANE OF A FORWARDING ELEMENT	15/167,552	10075567	-	5/27/2016
PACKET GENERATION IN THE DATA PLANE OF A FORWARDING ELEMENT	16/048,760	-	-	7/30/2018
PACKET GENERATION IN THE DATA PLANE OF A FORWARDING ELEMENT	62/292,517	-	-	5/29/2016
Buffer Space Availability for Different Packet Classes	15/374,828	-	-	12/9/2016
DATA PLANE ERROR DETECTION FOR TERNARY CONTENT-ADDRESSABLE MEMORY (TCAM) OF	15/682,316	10303544	-	8/21/2017
DATA PLANE ERROR DETECTION FOR TERNARY CONTENT-ADDRESSABLE MEMORY (TCAM) OF	16/380,978	-	-	4/10/2019
DATA PLANE ERROR DETECTION FOR TERNARY CONTENT-ADDRESSABLE MEMORY OF A FORW	62/419,451	-	-	11/8/2016
ERROR HANDLING FOR MATCH ACTION UNIT MEMORY OF A FORWARDING ELEMENT	15/682,323	10127983	-	8/21/2017
ERROR HANDLING FOR MATCH ACTION UNIT MEMORY OF A FORWARDING ELEMENT	16/181,095	-	-	11/5/2018
Transmission of Mirror Buffer Contents	15/161,262	-	-	5/22/2016
Hierarchical Queue Scheduler	15/682,479	-	-	8/21/2017
Queue Scheduler Control via Packet Data	62/474,594	-	-	3/21/2017
Hierarchical Queue Scheduler	62/485,145	-	-	4/13/2017
Distributing Key-Value Pairs to Forwarding Elements for Caching	15/730,699	10257122	-	10/11/2017
Distributing Key-Value Pairs to Forwarding Elements for Caching	16/290,899	-	-	3/2/2019
Mechanism for Communicating to Remote Control Plane from Forwarding Element	15/784,190	-	-	10/16/2017
Priority-Based Flow Control	15/374,820	-	-	12/9/2016
Network Forwarding Element with Key-Value Processing in the Data Plane	15/730,700	10305820	-	10/11/2017
Network Forwarding Element with Key-Value Processing in the Data Plane	16/372,370	-	-	4/1/2019
NETWORK FORWARDING ELEMENT WITH DATA COMPUTE CAPABILITIES IN THE DATA PLANE	62/407,465	-	-	10/12/2016
NETWORK FORWARDING ELEMENT WITH DATA COMPUTE CAPABILITIES IN THE DATA PLANE	62/426,873	-	-	11/28/2016
PACKET GENERATION-BASED BIDIRECTIONAL FORWARDING DETECTION	15/261,941	10050854	-	9/10/2016
PACKET GENERATION-BASED BIDIRECTIONAL FORWARDING DETECTION	16/024,908	-	-	7/1/2018

WEIGHTED-COST MULTI-PATHING USING RANGE LOOKUPS	15/382,711	10084687	-	12/18/2016
WEIGHTED-COST MULTI-PATHING USING RANGE LOOKUPS	16/108,623	-	-	8/22/2018
WEIGHTED-COST MULTI-PATHING USING RANGE LOOKUPS	62/423,710	-	-	11/17/2016
USING STATEFUL TRAFFIC MANAGEMENT DATA TO PERFORM PACKET PROCESSING	15/835,238	-	-	12/7/2017
Configurable Packet Processing Pipeline for Handling Non-Packet Data	62/535,934	-	-	7/23/2017
Configurable Packet Processing Pipeline for Handling Non-Packet Data	62/537,917	-	-	7/27/2017
LINK AGGREGATION GROUP FAILOVER FOR MULTICAST	15/449,969	-	-	3/5/2017
DYNAMICALLY RECONFIGURING DATA PLANE OF FORWARDING ELEMENT TO ACCOUNT FOR P	15/683,743	10298456	-	8/22/2017
DYNAMICALLY RECONFIGURING DATA PLANE OF FORWARDING ELEMENT TO ACCOUNT FOR P	16/372,214	-	-	4/1/2019
DYNAMICALLY RECONFIGURING DATA PLANE TO ACCOUNT FOR OPERATING TEMPERATURE O	62/426,674	-	-	11/28/2016
DYNAMICALLY RECONFIGURING DATA PLANE TO ACCOUNT FOR OPERATING TEMPERATURE O	62/456,641	-	-	2/8/2017
PROVIDING PACKET RESILIENCE BETWEEN TWO FORWARDING ELEMENTS	15/924,153	-	-	3/16/2018
PROVIDING PACKET RESILIENCE BETWEEN TWO FORWARDING ELEMENTS	62/472,546	-	-	3/16/2017
EQUAL COST MULTIPLE PATH GROUP FAILOVER FOR MULTICAST	15/449,974	10237206	-	3/5/2017
EQUAL COST MULTIPLE PATH GROUP FAILOVER FOR MULTICAST	16/271,624	-	-	2/8/2019
Remote Control Plane Directing Data Plane Configurator	15/784,191	-	-	10/16/2017
IN-BAND, REMOTELY PROGRAMMABLE FORWARDING ELEMENT	62/452,364	-	-	1/31/2017
FAST RECONFIGURATION OF THE DATA PLANE OF A HARDWARE FORWARDING ELEMENT	15/682,513	-	-	8/21/2017
FAST RECONFIGURATION OF THE DATA PLANE OF A HARDWARE FORWARDING ELEMENT	62/474,004	-	-	3/20/2017
Source Routing Design with Simplified Forwarding Elements	15/948,946	-	-	4/9/2018
Source Routing Design with Simplified Forwarding Elements	62/483,431	-	-	4/9/2017
FORWARDING ELEMENT FOR NETWORK WITH ROUTING PERFORMED AT EDGES	62/640,559	-	-	3/8/2018
GENERATION OF PATH FAILURE MESSAGE AT FORWARDING ELEMENT	PCT/US2019/020842	-	-	3/5/2019
FORWARDING ELEMENT WITH DATA PLANE FLOW LEARNING CIRCUITS	62/474,119	-	-	3/21/2017
NETWORK FORWARDING ELEMENT WITH DATA PLANE PACKET SNAPSHOTTING CAPABILITIES	15/682,332	-	-	8/21/2017
NETWORK FORWARDING ELEMENT WITH DATA PLANE PACKET SNAPSHOTTING CAPABILITIES	62/505,985	-	-	5/15/2017
NETWORK FORWARDING ELEMENT WITH DATA PLANE PACKET SNAPSHOTTING CAPABILITIES	62/525,721	-	-	6/27/2017
FORWARDING ELEMENT WITH A DATA PLANE LOAD BALANCER	15/600,752	10158573	-	5/21/2017
FORWARDING ELEMENT WITH A DATA PLANE LOAD BALANCER	16/180,981	-	-	11/5/2018
FORWARDING ELEMENT WITH A DATA PLANE LOAD BALANCER	62/492,908	-	-	5/1/2017
Packet Replication and Forwarding Based on Payload Sections	15/838,701	-	-	12/12/2017
Packet Replication and Forwarding Based on Payload Sections	62/527,637	-	-	6/30/2017
Configurable Forwarding Element Deparser	15/678,549	-	-	8/16/2017
Configurable Forwarding Element Deparser	62/488,800	-	-	4/23/2017
Configurable Forwarding Element Deparser	62/503,307	-	-	5/8/2017
Packet Reconstruction at Deparser	15/678,556	-	-	8/16/2017
Queue Scheduler Control via Packet Data	15/682,481	-	-	8/21/2017

Path and Latency Tracking	15/600,751	-	-	5/21/2017
Latency Tracking	15/726,347	-	-	10/5/2017
Copying Packet Data to Mirror Buffer	15/836,528	-	-	12/8/2017
Copying Packet Data to Mirror Buffer	62/558,748	-	-	9/14/2017
Generation of Descriptive Data for Packet Fields	15/678,565	-	-	8/16/2017
COMPILER AND HARDWARE INTERACTIONS TO REUSE REGISTER FIELDS IN THE DATA PLANE O	15/682,363	-	-	8/21/2017
COMPILER AND HARDWARE INTERACTIONS TO REUSE REGISTER FIELDS IN THE DATA PLANE O	62/530,289	-	-	7/9/2017
CONFIGURABLE PACKET PROCESSING PIPELINE FOR HANDLING NON-PACKET DATA	15/835,239	-	-	12/7/2017
Pipeline Chaining	15/838,697	-	-	12/12/2017
DYNAMIC ALLOCATION OF UNIT MEMORIES TO MATCH TABLES FOR A NETWORK FORWARDIN	15/833,965	-	-	12/6/2017
DYNAMIC ALLOCATION OF UNIT MEMORIES TO MATCH TABLES FOR A NETWORK FORWARDIN	62/564,702	-	-	9/28/2017
INCREMENTAL UPDATE OF THE DATA PLANE OF A HARDWARE FORWARDING ELEMENT	15/682,515	10164829	-	8/21/2017
INCREMENTAL UPDATE OF THE DATA PLANE OF A HARDWARE FORWARDING ELEMENT	16/219,921	-	-	12/13/2018
COMPILER AND HARDWARE INTERACTIONS TO REMOVE ACTION DEPENDENCIES IN THE DATA	15/682,365	10313495	-	8/21/2017
COMPILER AND HARDWARE INTERACTIONS TO REMOVE ACTION DEPENDENCIES IN THE DATA	16/383,276	-	-	4/12/2019
MULTIPLE COPIES OF STATEFUL TABLES	15/835,242	-	-	12/7/2017
STATEFUL PROCESSING UNIT WITH MIN/MAX CAPABILITY	15/835,247	-	-	12/7/2017
TRANSMISSION OF TRAFFIC MANAGEMENT DATA TO PROCESSING PIPELINE	15/835,249	-	-	12/7/2017
BUS FOR PROVIDING TRAFFIC MANAGEMENT STATISTICS TO PROCESSING PIPELINE	15/835,250	-	-	12/7/2017
DYNAMICALLY RECONFIGURING DATA PLANE OF FORWARDING ELEMENT TO ACCOUNT FOR O	15/683,745	-	-	8/22/2017
DYNAMICALLY RECONFIGURING DATA PLANE OF FORWARDING ELEMENT TO ADJUST DATA PL	15/683,742	-	-	8/22/2017
Generation of Path Failure Message at Forwarding Element	15/948,991	-	-	4/9/2018
Execution of Packet-Specified Actions at Forwarding Element	15/948,992	-	-	4/9/2018
DATA PLANE WITH HEAVY HITTER DETECTOR	16/051,405	-	-	7/31/2018
Messaging Between Remote Controller and Forwarding Element	15/784,192	-	-	10/16/2017
DATA PLANE WITH HEAVY HITTER DETECTOR	16/051,417	-	-	7/31/2018
FORWARDING ELEMENT DATA PLANE WITH FLOW SIZE DETECTOR	62/690,954	-	-	6/28/2018
FORWARDING ELEMENT DATA PLANE WITH FLOW SIZE DETECTOR	PCT/US2019/021467	-	-	3/8/2019
Forwarding Element with a Data Plane DDoS Attack Detector	15/897,361	-	-	2/15/2018
Forwarding Element with a Data Plane DDoS Attack Detector	62/554,024	-	-	9/5/2017
Forwarding Element with a Data Plane DDoS Attack Detector	62/556,470	-	-	9/10/2017
MULTIPLE TYPES OF PACKET DATA CONTAINERS	15/835,235	-	-	12/7/2017
Multiple Types of Packet Data Containers	62/564,659	-	-	9/28/2017
Accurate Packet Flow Statistics	15/985,667	-	-	5/21/2018
Accurate Packet Flow Statistics	62/568,777	-	-	10/5/2017
Accurate Packet Flow Statistics	62/668,694	-	-	5/8/2018
CONFIGURING A NETWORK FORWARDING ELEMENT WITH DATA PLANE PACKET SNAPSHOTTING	15/980,543	-	-	5/15/2018

Data Plane with Heavy Hitter Detector	62/674,596	-	-	5/21/2018
DATA PLANE WITH HEAVY HITTER DETECTOR	PCT/US2019/021456	-	-	3/8/2019
DATA PLANE WITH CONNECTION VALIDATION CIRCUITS	15/986,048	-	-	5/22/2018
DATA PLANE WITH CONNECTION VALIDATION CIRCUITS	62/658,296	-	-	4/16/2018
FORWARDING ELEMENT DATA PLANE WITH FLOW SIZE DETECTOR	16/051,399	-	-	7/31/2018
DATA PLANE PROGRAM VERIFICATION	16/022,601	-	20190108045	6/28/2018
DATA PLANE PROGRAM VERIFICATION	62/571,121	-	-	10/11/2017
DATA PLANE PROGRAM VERIFICATION	62/663,141	-	-	4/26/2018
Forwarding Element Data Plane with Computing Parameter Distributor	62/718,373	-	-	8/13/2018
Forwarding Element Data Plane with Computing Parameter Distributor	PCT/US2019/021429	-	-	3/8/2019
Forwarding Element Data Plane with Computing Parameter Distributor	62/733,441	-	-	9/19/2018
RUNTIME SHARING OF UNIT MEMORIES BETWEEN MATCH TABLES IN A NETWORK FORWARDI	15/986,795	-	-	5/22/2018
RUNTIME SHARING OF UNIT MEMORIES BETWEEN MATCH TABLES IN A NETWORK FORWARDI	62/569,641	-	-	10/9/2017
Forwarding Element Data Plane with Computing Parameter Distributor	16/147,750	-	-	9/30/2018
Forwarding Element Integrated Circuit Chip with Separate I/O and Switching Tiles	15/896,018	-	-	2/13/2018
Forwarding Element Integrated Circuit Chip with Separate I/O and Switching Tiles	62/612,059	-	-	12/29/2017
Flow Control Visibility	16/108,661	-	-	8/22/2018
Flow Control Visibility	62/712,927	-	-	7/31/2018
Flow Control Visibility	PCT/US2019/021459	-	-	3/8/2019
Forwarding Element with a Data Plane DDoS Attack Detector	15/897,366	-	-	2/15/2018
EXPANSION OF PACKET DATA WITHIN PROCESSING PIPELINE	15/835,233	-	-	12/7/2017
IDENTIFYING CONGESTION IN A NETWORK	15/895,908	-	-	2/13/2018
Chained Longest Prefix Matching in Programmable Switch	15/927,663	-	-	3/21/2018
Longest Prefix Matching in Programmable Switch	62/638,954	-	-	3/6/2018
CHAINED LONGEST PREFIX MATCHING IN PROGRAMMABLE SWITCH	PCT/US2019/020846	-	-	3/5/2019
Algorithmic Longest Prefix Matching in Programmable Switch	15/927,684	-	-	3/21/2018
DATA PLANE WITH FLOW LEARNING CIRCUIT	15/927,723	-	-	3/21/2018
FORWARDING ELEMENT WITH FLOW LEARNING CIRCUIT IN ITS DATA PLANE	15/927,868	-	-	3/21/2018
DATA PLANE FOR LEARNING FLOWS, COLLECTING METADATA REGARDING LEARNED FLOWS A	15/927,859	-	-	3/21/2018
Verification of Access Control List Rules	15/948,990	-	-	4/9/2018
FORWARDING ELEMENT FOR NETWORK WITH ROUTING PERFORMED AT EDGES	62/646,341	-	-	3/21/2018
Forwarding Element Data Plane with Computing Parameter Distributor	16/147,754	-	-	9/30/2018
Forwarding Element Data Plane with Computing Parameter Distributor	16/147,755	-	-	9/30/2018
AUGMENTING DATA PLANE FUNCTIONALITY WITH FIELD PROGRAMMABLE INTEGRATED CIRCU	62/847,284	-	-	5/13/2019
Data Plane Circuit Performing Character Pattern Identification	62/751,832	-	-	10/29/2018

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