PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT7540787

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
SEQUENCE:	2

CONVEYING PARTY DATA

Name	Execution Date
MANDIANT, INC.	10/08/2021

RECEIVING PARTY DATA

Name:	FIREEYE SECURITY HOLDINGS US LLC
Street Address:	601 MCCARTHY BLVD.
City:	MILPITAS
State/Country:	CALIFORNIA
Postal Code:	95035

PROPERTY NUMBERS Total: 17

Property Type	Number
Patent Number:	8997219
Patent Number:	9519782
Patent Number:	8291499
Patent Number:	8935779
Patent Number:	9118715
Patent Number:	8689333
Patent Number:	8516593
Patent Number:	8990944
Patent Number:	9565202
Patent Number:	9251343
Patent Number:	9495180
Patent Number:	9736179
Patent Number:	9912681
Patent Number:	9756074
Patent Number:	9009822
Patent Number:	9176843
Patent Number:	9009823

CORRESPONDENCE DATA

Fax Number:	(714)546-9035

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.

Phone:	7146415100
Email:	jngo@rutan.com
Correspondent Name:	RUTAN & TUCKER, LLP
Address Line 1:	18575 JAMBOREE ROAD, 9TH FLOOR
Address Line 4:	IRVINE, CALIFORNIA 92612

ATTORNEY DOCKET NUMBER:	102407-MANDIANT
NAME OF SUBMITTER:	WILLIAM W. SCHAAL, REG. NO. 39018
SIGNATURE:	/William W. Schaal/
DATE SIGNED:	09/15/2022

Total Attachments: 24

source=Project Galaxy - Patent Assignment - Closing (Executed)#page1.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page2.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page3.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page4.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page5.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page6.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page7.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page8.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page9.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page10.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page11.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page12.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page13.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page14.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page15.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page16.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page17.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page18.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page19.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page20.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page21.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page22.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page23.tif
source=Project Galaxy - Patent Assignment - Closing (Executed)#page24.tif

Execution Version

PATENT ASSIGNMENT

THIS PATENT ASSIGNMENT (this "**Assignment**"), dated as of October 8, 2021 ("**Effective Date**"), is entered into by and between Mandiant, Inc. (f/k/a FireEye, Inc.), a Delaware corporation ("**Assignor**"), and FireEye Security Holdings US LLC, a Delaware limited liability company and wholly owned subsidiary of Magenta Buyer LLC ("**Assignee**").

RECITALS

A. Assignor is the sole owner of the patents and patent applications set forth on **Schedule A** attached hereto (the "**Listed Patents**"); and

B. Assignor and Assignee, as assignee of Polaris Buyer LLC, have entered into an Asset Purchase Agreement, dated as of May 29, 2021 (the "**Purchase Agreement**"), pursuant to which Assignor has agreed to assign, sell and transfer the Transferred Patents (as defined in the Purchase Agreement), including but not limited to each of the Listed Patents unto Assignee.

NOW, THEREFORE, for good and valuable consideration, the receipt, sufficiency and adequacy of which are hereby acknowledged, subject to the terms of the Purchase Agreement, Assignor does hereby assign, sell and transfer unto Assignee, Assignor's ownership of the Transferred Patents, including but not limited to the Listed Patents, including, without limitation, (i) any United States, international and foreign counterparts or equivalents of any of the foregoing, applications or certificates of invention based upon or covering any portion of any of the foregoing, (ii) any reissues, divisionals, renewals, extensions, provisionals, continuations, continuations-in-part, reexaminations, substitutions or revisions of any of the foregoing, (iii) any other patents, applications or extensions that claim priority to or through any of the foregoing, and (iv) the rights to enforce, and recover and retain any damages or obtain equitable relief for or collect license fees and/or royalties, for the past, ongoing, or future infringement, misappropriation, or use of any of the foregoing. Assignor does further consent to the recordation of this Assignment with any governmental agency.

[*Remainder of page intentionally left blank*]

IN WITNESS WHEREOF, this Assignment has been duly executed and delivered by a duly authorized representative of each of the parties as of the Effective Date.

ASSIGNOR

MANDIANT, INC.

By: DocuSigned by: Frank Verdecanna 48D45302936B415...

Name: Frank Verdecanna

Title: EVP and Chief Financial Officer

ASSIGNEE

FIREEYE SECURITY HOLDINGS US LLC

By: _____
Name: Marc Bala
Title: Secretary

Schedule A

UNITED STATES

FireEye Docket No.	Title	Filing Date	All Inventors	Prosecution Status	Appl/Pat. #	Google Patents
P01-1001	System and method of detecting computer worms	3/31/2005	Ashar Aziz	ISSUED	8528086	https://patents.google.com/patent/US8528086
P01-1002	System and Method of Containing Computer Worms	6/13/2005	Ashar Aziz	ISSUED	8549638	https://patents.google.com/patent/US8549638
P01-1003	Computer Worm Defense System and Method	6/13/2005	Ashar Aziz	ISSUED	8006305	https://patents.google.com/patent/US8006305
P01-1004	Dynamic Signature Creation and Enforcement	7/28/2006	Ashar Aziz; Jayaraman Manni; Ramesh Radhakrishnan; Wei-Lung Lai	ISSUED	8375444	https://patents.google.com/patent/US8375444
P01-1005	Virtual Machine with Dynamic Data Flow Analysis	6/19/2006	Ashar Aziz; Osman Ismael; Ramesh Radhakrishnan	ISSUED	8584239	https://patents.google.com/patent/US8584239
P01-1006	Heuristic Based Capture with Replay to Virtual Machine	4/20/2006	Adrian Drzewiecki; Ashar Aziz; Jayaraman Manni; Muhammad Amin; Ramesh Radhakrishnan	ISSUED	8171553	https://patents.google.com/patent/US8171553
P01-1007	Malware Containment on Connection	3/12/2007	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	8566946	https://patents.google.com/patent/US8566946
P01-1008	Malware Containment and Security Analysis on Connection	3/12/2007	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	8539582	https://patents.google.com/patent/US8539582
P01-1009	Systems and Methods for Malware Attack Prevention	3/12/2007	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	8898788	https://patents.google.com/patent/US8898788
P01-1010	Systems and Methods for Malware Attack Detection and Identification	3/12/2007	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	8881282	https://patents.google.com/patent/US8881282
P01-1011	Systems and Methods for Detecting Encrypted Bot Command & Control Communication Channels	11/30/2007	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	8204984	https://patents.google.com/patent/US8204984
P01-1012	Systems and Methods for Detecting Communication Channels of Bots	11/30/2007	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	8561177	https://patents.google.com/patent/US8561177
P01-1013	Prospective Client Identification Using Malware Attack Detection	2/21/2007	Ashar Aziz	ISSUED	9027135	https://patents.google.com/patent/US9027135
P01-1014	Systems and Methods for Detecting Malicious Network Content	11/3/2008	Ashar Aziz; Stuart Gresley Staniford	ISSUED	8850571	https://patents.google.com/patent/US8850571
P01-1015	Detecting Malicious Network Content Using Virtual Environment Components	1/23/2009	Bahman Mahbod; Jayaraman Manni; Muhammad Amin; Osman Ismael; Samuel Yie	ISSUED	8793787	https://patents.google.com/patent/US8793787
P01-1016	Network-Based Binary File Extraction and Analysis for Malware Detection	9/30/2009	Ashar Aziz; Fengmin Gong; Jayaraman Manni; Muhammad Amin; Upendran Loganathan	ISSUED	8832829	https://patents.google.com/patent/US8832829
P01-1017	Electronic Message Analysis for Malware Detection	4/18/2011	Ashar Aziz; Henry Uyeno; Jayaraman Manni; Muhammad Amin; Stuart Gresley Staniford	ISSUED	9106694	https://patents.google.com/patent/US9106694

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	ApplPat. #	Google Patents
P01-1018	Systems and Methods for Detecting Malicious PDF Network Content	1/21/2011	Ashar Aziz; Stuart Gresley Staniford	ISSUED	8997219	https://patents.google.com/patent/US8997219
P01-1019	Detecting Malicious Network Content	2/24/2012	Ashar Aziz; Stuart Gresley Staniford; Muhammad Amin; Henry Uyeno; Samuel Yie	ISSUED	9519782	https://patents.google.com/patent/US9519782
P01-1020	Policy Based Capture with Replay to Virtual Machine	3/16/2012	Ashar Aziz; Stuart Gresley Staniford; Ramesh Radhakrishnan; Muhammad Amin; Adrian Drzewiecki	ISSUED	8291499	https://patents.google.com/patent/US8291499
P01-1021	Network-based binary file extraction and analysis for malware detection	1/13/2012	Ashar Aziz; Fengmin Gong; Jayaraman Manni; Muhammad Amin; Upendran Loganathan	ISSUED	8935779	https://patents.google.com/patent/US8935779
P01-1022	Systems and Methods for Detecting Malicious PDF Network Content	5/10/2012	Stuart Gresley Staniford; Ashar Aziz	ISSUED	9118715	https://patents.google.com/patent/US9118715
P01-1023	Malware Defense System and Method	9/27/2012	Ashar Aziz	ISSUED	8689333	https://patents.google.com/patent/US8689333
P01-1024	Systems and Methods for Computer Worm Defense	10/12/2012	Ashar Aziz	ISSUED	8516593	https://patents.google.com/patent/US8516593
P01-1025	Systems and methods for automatically detecting backdoors	2/23/2013	Abhishek Singh; Jayaraman Manni	ISSUED	8990944	https://patents.google.com/patent/US8990944
P01-1031	System and Method for Detecting Exfiltration Content	3/13/2013	Darien Kindlund; James Bennett; Julia Wolf	ISSUED	9565202	https://patents.google.com/patent/US9565202
P01-1033	Detecting bootkits resident on compromised computers	3/15/2013	Abhishek Singh; Michael Vincent; Muhammad Amin; Zheng Bu	ISSUED	9251343	https://patents.google.com/patent/US9251343
P01-1035	Optimized Resource Allocation for Virtual Machines Within a Malware Content Detection System	5/10/2013	Osman Ismael	ISSUED	9495180	https://patents.google.com/patent/US9495180
P01-1036	Systems, Apparatus and Method for Using Malware Analysis Results to Drive Adaptive Instrumentation of Virtual Machines to Improve Exploit Detection	9/30/2013	Osman Ismael	ISSUED	9736179	https://patents.google.com/patent/US9736179
P01-1038.02	Injection of Content Processing Delay in an Endpoint	11/2/2015	Ashar Aziz; Osman Ismael	ISSUED	9912681	https://patents.google.com/patent/US9912681
P01-1039.02	System and method for IPS and VM-based detection of suspicious objects	3/27/2014	Ashar Aziz; Muhammad Amin; Zheng Bu	ISSUED	9756074	https://patents.google.com/patent/US9756074
P01-1043	Framework for multi-phase analysis of mobile applications	2/23/2013	Ashar Aziz; Osman Ismael	ISSUED	9009822	https://patents.google.com/patent/US9009822
P01-1044	Framework For Efficient Security Coverage Of Mobile Software Applications	2/23/2013	Ashar Aziz; Osman Ismael; Hui Xue; Dawn Song; Noah Johnson; Prashanth Mohan	ISSUED	9176843	https://patents.google.com/patent/US9176843
P01-1045	Framework For Efficient Security Coverage Of Mobile Software Applications Installed On Mobile Devices	2/23/2013	Osman Ismael; Dawn Song	ISSUED	9009823	https://patents.google.com/patent/US9009823

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	Appl/Pat. #	Google Patents
P01-1047	Framework for Computer Application Analysis of Sensitive Information Tracking	2/23/2013	Osman Ismael; Dawn Song; Phung-Te Ha; Peter Gilbert; Hui Xue	ISSUED	9159035	https://patents.google.com/patent/US9159035
P01-1048	Framework For Efficient Security Coverage Of Mobile Software Applications Using Symbolic Execution To Reach Regions of Interest Within an Application	2/23/2013	Ashar Aziz; Osman Ismael; Dawn Song; Hui Xue	ISSUED	9367681	https://patents.google.com/patent/US9367681
P01-1049	Framework For Efficient Security Coverage Of Mobile Software Applications That Is Usable To Harden In The Field Code	2/23/2013	Ashar Aziz; Osman Ismael	ISSUED	9824209	https://patents.google.com/patent/US9824209
P01-1055	Malicious Content Analysis Using Simulated User Interaction Without User Involvement	3/13/2013	Alex Pilipenko; Darien Kindlund; Emmanuel Thioux; Michael Vincent; Muhammad Amin	ISSUED	9104867	https://patents.google.com/patent/US9104867
P01-1056	File Extraction from Memory Dump for Malicious Content Analysis	3/13/2013	Emmanuel Thioux; Muhammad Amin; Osman Ismael	ISSUED	9355247	https://patents.google.com/patent/US9355247
P01-1061	Distributed Systems and Methods for Automatically Detecting Unknown Bot and Botnets	3/14/2013	Ali Islam; Ashar Aziz; Atif Mushtaq; Todd Rosenberry	ISSUED	9430646	https://patents.google.com/patent/US9430646
P01-1063	Correlation and Consolidation of Analytic Data for Holistic View of a Malware Attack	3/14/2013	Jayaraman Manni; Michael Berrow; Philip Eun	ISSUED	9311479	https://patents.google.com/patent/US9311479
P01-1065	Malicious Content Analysis with Multi-Version Application Support within Single Operating Environment	3/13/2013	Emily Jing; Muhammad Amin; Yasir Khalid; Muhammad Rizwan	ISSUED	9626509	https://patents.google.com/patent/US9626509
P01-1066.03	Detecting Delayed Activation Malware Using a Run-time monitoring Agent and Time-Dilation Logic	6/29/2016	Michael Vincent	ISSUED	10817606	https://patents.google.com/patent/US10817606
P01-1067	User Interface with Real-Time Visual Playback Along with Synchronous Textual Analysis Log Display and Event/Time Index for Anomalous Behavior Detection in Applications	2/23/2013	Adrian Mettler; Ashar Aziz; Harnish Goradia; Noah Johnson; Osman Ismael	ISSUED	9195829	https://patents.google.com/patent/US9195829
P01-1069	Page Replacement Code Injection	9/30/2013	Osman Ismael; Phung-Te Ha; Seva Tonkonoh	ISSUED	10089461	https://patents.google.com/patent/US10089461
P01-1070.02	System and Method for Detecting Malicious Links in Electronic Messages	7/18/2013	Henry Uyeno; Vinay Pidathala	ISSUED	9300686	https://patents.google.com/patent/US9300686
P01-1071	System and Method for Network Behavior Detection	3/20/2014	James Bennett; Zheng Bu	ISSUED	9241010	https://patents.google.com/patent/US9241010
P01-1076	Zero-Day Discovery System	6/24/2013	Yichong Lin; Zheng Bu	ISSUED	10133863	https://patents.google.com/patent/US10133863
P01-1080	System and Method for Detecting Phishing Using Password Prediction	6/28/2013	Angshuman Mukherjee; Henry Uyeno; Mohan Samuelraj; Muhammad Amin	ISSUED	9888016	https://patents.google.com/patent/US9888016
P01-1086	System and Method for Detecting Time-Bomb Malware	6/24/2013	Darien Kindlund; Michael Vincent; Sai Vashisht; Sushant Paithane	ISSUED	9536091	https://patents.google.com/patent/US9536091
P01-1087	Classifying Sets of Malicious Indicators for Detecting Command and Control	5/13/2013	Ali Islam; Zheng Bu	ISSUED	9635039	https://patents.google.com/patent/US9635039

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	ApplPat. #	Google Patents
	Communications Associated with Malware					
P01-1088	Fuzzy Hash of Behavioral Results	9/30/2013	Ali Mesdaq; Paul Westin	ISSUED	9294501	https://patents.google.com/patent/US9294501
P01-1089	Dynamically Adaptive Framework and Method for Classifying Malware Using Intelligent Static, Emulation and Dynamic Analyses	9/30/2013	Michael Vincent; Ali Mesdaq; Emmanuel Thioux; Abhishek Singh; Sai Vashisht	ISSUED	9171160	https://patents.google.com/patent/US9171160
P01-1091	Systems and methods for scheduling analysis of network content for malware	6/24/2013	Ashar Aziz; Stuart Gresley Staniford	ISSUED	8990939	https://patents.google.com/patent/US8990939
P01-1092	System and Method of Detecting Time-Delayed Malicious Traffic	6/28/2013	Ashar Aziz	ISSUED	8635696	https://patents.google.com/patent/US8635696
P01-1093	System and Method for Detecting Malicious Traffic Using a Virtual Machine Configured with a Select Software Environment	6/28/2013	Ashar Aziz	ISSUED	9356944	https://patents.google.com/patent/US9356944
P01-1096	Threat-Aware Microvisor	3/28/2014	Ashar Aziz; Osman Ismael	ISSUED	9740857	https://patents.google.com/patent/US9740857
P01-1097	Micro-Virtualization Architecture for Threat-Aware Microvisor Deployment in a Node of a Network Environment	3/28/2014	Ashar Aziz; Osman Ismael	ISSUED	9292686	https://patents.google.com/patent/US9292686
P01-1099	Secure Communications Between Peers Using a Verified Virtual Trusted Platform Module	9/9/2016	Osman Ismael; Hendrik Tews	ISSUED	10592678	https://patents.google.com/patent/US10592678
P01-1100.02	Technique for Verifying Exploit/Malware at Malware Detection Appliance Through Correlation with Endpoints	9/7/2016	Ashar Aziz; Osman Ismael	ISSUED	10826933	https://patents.google.com/patent/US10826933
P01-1102	System and Method for Detecting Malicious Traffic while Reducing False Positives	8/28/2013	Ashar Aziz	ISSUED	8776229	https://patents.google.com/patent/US8776229
P01-1105	System, Apparatus and Method For Classifying a File as Malicious Using Static Scanning	9/30/2013	Abhishek Singh; Angshuman Mukherjee; Muhammad Amin; Yichong Lin; Zheng Bu	ISSUED	10192052	https://patents.google.com/patent/US10192052
P01-1107	Advanced Persistent Threat (APT) Detection Center	9/30/2013	Thoufique Haq; Vinay Pidathala; Jinjian Zhai	ISSUED	9628507	https://patents.google.com/patent/US9628507
P01-1110.02	System and Method for Run-time Object Classification	3/27/2014	Ashar Aziz; Vinay Pidathala; Zheng Bu	ISSUED	9747446	https://patents.google.com/patent/US9747446
P01-1111	Multistage System and Method for Analyzing Obfuscated Content for Malware	7/1/2014	Abhishek Singh; Amit Malik; Shivani Deshpande; Wei Zheng	ISSUED	9690936	https://patents.google.com/patent/US9690936
P01-1112	Detection efficacy of virtual machine-based analysis with application specific events	2/5/2014	Sai Vashisht; Sushant Paithane	ISSUED	9262635	https://patents.google.com/patent/US9262635
P01-1113	Dynamically Remote Tuning of a Malware Content Detection System	3/31/2014	Darien Kindlund; Emmanuel Thioux; Michael Vincent; Sai Vashisht	ISSUED	9223972	https://patents.google.com/patent/US9223972
P01-1115	Infection Vector and Malware Tracking with an Interactive User Display	6/26/2014	Harnish Goradia	ISSUED	10805340	https://patents.google.com/patent/US10805340

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	Appl/Pat. #	Google Patents
P01-1116	Dynamic Guest Image Creation and Rollback	3/21/2014	Harnish Goradia	ISSUED	10242185	https://patents.google.com/patent/US10242185
P01-1117	System, Apparatus and Method for Conducting on-the-fly Decryption of Encrypted Objects for Malware Detection	11/21/2013	Ali Islam	ISSUED	9189627	https://patents.google.com/patent/US9189627
P01-1118.02	System and Method for Enhanced Security of Storage Devices	11/7/2014	Eric Chan; Gregory J. Snyder; Osman Ismael	ISSUED	9921978	https://patents.google.com/patent/US9921978
P01-1119	System, Apparatus and method for Detecting a Malicious Attack Based on Static Analysis of a Multiflow Object	3/31/2014	Muhammad Amin; Shivani Deshpande; Yasir Khalid	ISSUED	9432389	https://patents.google.com/patent/US9432389
P01-1120	Methods and Systems for Unauthorized Activity Defense	8/19/2013	Ashar Aziz	ISSUED	9306960	https://patents.google.com/patent/US9306960
P01-1121	System and method of detecting malicious content	9/30/2013	Ashar Aziz	ISSUED	9838416	https://patents.google.com/patent/US9838416
P01-1132	System and method for analyzing suspicious network data	11/12/2013	Ashar Aziz; Osman Ismael; Ramesh Radhakrishnan	ISSUED	8984638	https://patents.google.com/patent/US8984638
P01-1133	System and Method for Malware Containment	10/21/2013	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	9071638	https://patents.google.com/patent/US9071638
P01-1134	System and Method for Bot Detection	10/11/2013	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	9628498	https://patents.google.com/patent/US9628498
P01-1135.02	Trusted Threat-Aware Microvisor	1/21/2015	Ashar Aziz; Osman Ismael	ISSUED	9680862	https://patents.google.com/patent/US9680862
P01-1136.02	Exploit Detection System with Threat-Aware Microvisor	3/28/2014	Ashar Aziz; Osman Ismael	ISSUED	9507935	https://patents.google.com/patent/US9507935
P01-1137	System and Method for Offloading Packet Processing and Static Analysis Operations	3/28/2014	Madhusudan Challa; Masood Mehmood; Muhammad Amin; Ramaswamy Ramaswamy; Shrikrishna Karandikar	ISSUED	9591015	https://patents.google.com/patent/US9591015
P01-1150	Intrusion Prevention and Remedy System	6/24/2014	Hatem Eyada	ISSUED	10084813	https://patents.google.com/patent/US10084813
P01-1151	System and Method for Malware Analysis Using Thread-Level Event Monitoring	9/22/2014	Michael Vincent; Sai Vashisht; Sushant Paithane	ISSUED	10671726	https://patents.google.com/patent/US10671726
P01-1167.02	Returned Oriented Programming Detection	6/20/2014	Emmanuel Thioux; Michael Vincent	ISSUED	9594912	https://patents.google.com/patent/US9594912
P01-1168.02	Computer Exploit Detection Using Heap Spray Pattern Matching	6/20/2014	Emmanuel Thioux; Michael Vincent	ISSUED	9438623	https://patents.google.com/patent/US9438623
P01-1169.02	Shellcode Validation	6/20/2014	Emmanuel Thioux	ISSUED	9973531	https://patents.google.com/patent/US9973531
P01-1170.02	Verification of Trusted Threat-Aware Microvisor	2/6/2015	Hendrik Tews; Osman Ismael	ISSUED	10002252	https://patents.google.com/patent/US10002252
P01-1172	Interactive Infection Visualization for Improved Exploit Detection and Signature Generation for Malware and Malware Families	9/29/2014	Anil Gupta; Hirendra Rathor; Kaushal Dalal	ISSUED	10027689	https://patents.google.com/patent/US10027689

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	Appl/Pat. #	Google Patents
P01-1176	System, Device and Method for Detecting a Malicious Attack Based on Direct Communications Between Remotely Hosted Virtual Machines and Malicious Web Servers	6/26/2014	Shrivani Karandikar; Muhammad Amin; Shivani Deshpande; Yasir Khalid	ISSUED	9398028	https://patents.google.com/patent/US9398028
P01-1177.02	Distributed Aggregation Technique for Detecting Lateral Movement of Stealthy Cyber-Attacks	3/31/2016	Ashar Aziz	FILED	15/087,476	
P01-1178	Determining Duplicate Objects for Malware Using Environmental/Context Information	9/30/2014	Arsen Movsesyan; Alexander Otvagin	ISSUED	9781144	https://patents.google.com/patent/US9781144
P01-1179	Modularized Database Architecture Using Vertical Partitioning for a State Machine	12/23/2014	Arsen Movsesyan; Vineet Kumar; Alexander Otvagin	ISSUED	9467460	https://patents.google.com/patent/US9467460
P01-1182	Selective System Call Monitoring	3/25/2015	Phung-Te Ha; Wei Xu	ISSUED	9690606	https://patents.google.com/patent/US9690606
P01-1183	System and Method of Detecting Delivery of Malware Using Cross-Customer Data	8/22/2014	Alex Rivlin; Divyesh Mehra; Henry Uyeno; Vinay Pidathala	ISSUED	9363280	https://patents.google.com/patent/US9363280
P01-1189.02	Storing network bidirectional flow data and metadata with efficient processing technique	8/19/2014	Christopher Hayes Fauerbach; Dennis Lee Edwards; Randy Caldejon	ISSUED	9426071	https://patents.google.com/patent/US9426071
P01-1190.02	Efficient Access to Sparse Packets in Large Repositories of Stored Network Traffic	2/5/2015	Christopher Hayes Fauerbach; Dennis Lee Edwards	ISSUED	9537972	https://patents.google.com/patent/US9537972
P01-1191	Intelligent Context Aware User Interaction for Malware Detection	12/30/2014	Sai Vashisht; Sushant Paithane; Yasir Khalid	ISSUED	9838417	https://patents.google.com/patent/US9838417
P01-1193	System and method for analyzing packets	6/30/2014	Ashar Aziz; Ramesh Radhakrishnan; Osman Ismael	ISSUED	9282109	https://patents.google.com/patent/US9282109
P01-1196	Framework For Iterative Analysis of Mobile Software Applications	9/24/2014	Ashar Aziz; Dawn Song; Osman Ismael	ISSUED	9225740	https://patents.google.com/patent/US9225740
P01-1198	Verification of Complex Software Code Using Modularized Components	9/9/2016	Osman Ismael; Hendrik Tews; Ashar Aziz	ISSUED	10025691	https://patents.google.com/patent/US10025691
P01-1201	System and Method for Determining Data Entropy to Identify Malware	1/25/2007	Chad McMillan; Jason Garman	ISSUED	8069484	https://patents.google.com/patent/US8069484
P01-1202	System and Method for Data Preservation and Retrieval	2/1/2008	David Merkel; Jason Shiffer; Kevin Mandia; Lois Cozzi; Matthew Frazier	ISSUED	7937387	https://patents.google.com/patent/US7937387
P01-1203	Method and System for Collaboration During an Event	2/1/2008	David Merkel; Jason Shiffer; Kevin Mandia; Lois Cozzi; Matthew Frazier; Matthew Pepe	ISSUED	9106630	https://patents.google.com/patent/US9106630
P01-1204	Method and system for collecting and organizing data corresponding to an event	2/1/2008	Eric Helvey; James Butler; Jason Shiffer; Matthew Frazier; Peter Villadsen; Scott Hogsten; Sean Cunningham	ISSUED	8949257	https://patents.google.com/patent/US8949257
P01-1205	Method and System for Analyzing Data Related to an Event	2/1/2008	Eric Helvey; James Butler; Jason Shiffer; Matthew Frazier; Scott Hogsten; Sean Cunningham; Theodore Wilson	ISSUED	8566476	https://patents.google.com/patent/US8566476

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	Appl/Pat. #	Google Patents
P01-1206	System and method for forensic identification of elements within a computer system	8/1/2008	James Butler	ISSUED	8881271	https://patents.google.com/patent/US8881271
P01-1208	System and Method for Data Preservation and Retrieval	3/28/2011	David Merkel; Jason Shiffer; Kevin Mandia; Matthew Frazier; Matthew Pepe	ISSUED	8793278	https://patents.google.com/patent/US8793278
P01-1209	System to Bypass a Compromised Mass Storage Device Driver Stack and Methods Thereof	3/15/2012	Aaron LeMasters	ISSUED	9275229	https://patents.google.com/patent/US9275229
P01-1210	Physical Memory Forensics System and Method	7/27/2012	James Butler	ISSUED	9268936	https://patents.google.com/patent/US9268936
P01-1211.02	System and Method to Create a Number of Breakpoints in a Virtual Machine via Virtual Machine Trapping Events	4/24/2013	Antony Saba; Robert Jung	ISSUED	10572665	https://patents.google.com/patent/US10572665
P01-1212.02	Identification of Obfuscated Computer Items Using Visual Algorithms	8/19/2013	David Ross; Jason Shiffer	ISSUED	9690935	https://patents.google.com/patent/US9690935
P01-1213.02	Timeline Wrinkling System and Method	9/24/2013	David Ross	ISSUED	9633134	https://patents.google.com/patent/US9633134
P01-1214.02	System and Method for the Programmatic Runtime Deobfuscation of Obfuscated Software Utilizing Virtual Machine INtrospection and Manipulation of Virtual Machine Guest Memory Permissions	5/13/2013	Antony Saba; Robert Jung	ISSUED	9459901	https://patents.google.com/patent/US9459901
P01-1215.02	System and Method to Visualize User Sessions	9/16/2013	Theodore Wilson	ISSUED	9824211	https://patents.google.com/patent/US9824211
P01-1217.02	System and Method Employing Structured Intelligence to Verify and Contain Threats at Endpoints	3/17/2014	Joseph Faber; Joseph Nardone; Kevin Arunski; Robert Dana; Sean Cunningham	ISSUED	9413781	https://patents.google.com/patent/US9413781
P01-1219	System and method to communicate sensitive information via one or more untrusted intermediate nodes with resilience to disconnected network topology	8/5/2014	Sean Cunningham	ISSUED	9912644	https://patents.google.com/patent/US9912644
P01-1221	Method and System for Collecting and Organizing Data Corresponding to an Event	8/2/2013	Eric Helvey; James Butler; Jason Shiffer; Matthew Frazier; Peter Villadsen; Scott Hogsten; Sean Cunningham	FILED	13/957,695	
P01-1222	Method and System for Collecting and Organizing Data Corresponding to an Event	8/2/2013	Eric Helvey; James Butler; Jason Shiffer; Matthew Frazier; Peter Villadsen; Scott Hogsten; Sean Cunningham	ISSUED	10146810	https://patents.google.com/patent/US10146810
P01-1245	Analytics-Based Security Monitoring System and Method	4/13/2015	Justin Neumann	ISSUED	9654485	https://patents.google.com/patent/US9654485
P01-1274	System and Method for Virtual Analysis of Network Data	6/30/2014	Ashar Aziz; Osman Ismael; Ramesh Radhakrishnan	ISSUED	9912684	https://patents.google.com/patent/US9912684
P01-1275	System and Method for Detecting Malicious Network Content Using Virtual Environment Components	7/28/2014	Bahman Mahbod; Jayaraman Manni; Muhammad Amin; Osman Ismael; Samuel Yie	FILED	14/444,943	

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	Appl/Pat. #	Google Patents
P01-1276	Network-Based Binary File Extraction and Analysis for Malware Detection	9/9/2014	Ashar Aziz; Fengmin Gong; Jayaraman Manni; Muhammad Amin; Upendran Loganathan	FILED	14/481,801	
P01-1277	System and Method for Signature Generation	2/25/2014	Ashar Aziz	ISSUED	9591020	https://patents.google.com/patent/US9591020
P01-1278	Improved Exploit Detection of Malware and Malware Families	9/29/2014	Hirendra Rathor; Kaushal Dalal	ISSUED	9773112	https://patents.google.com/patent/US9773112
P01-1281.02	Microvisor-Based Malware Detection Appliance Architecture	12/8/2015	Osman Ismael	ISSUED	9934376	https://patents.google.com/patent/US9934376
P01-1283	Framework for Classifying an Object as Malicious with Machine Learning for Deploying Updated Predictive Models	12/22/2014	Abhishek Singh; Ali Mesdaq; Anirban Das; Varun Jain	ISSUED	9690933	https://patents.google.com/patent/US9690933
P01-1285.02	Zero-day Rotating Guest Image Profile	6/30/2015	Asim Zafar; Eirij Qureshi; Darien Kindlund	ISSUED	10075455	https://patents.google.com/patent/US10075455
P01-1299.02	System and Method for Protecting a Software Component Running in a Virtual Machine Using a Virtualization Layer	6/30/2016	Udo Steinberg	ISSUED	10642753	https://patents.google.com/patent/US10642753
P01-1304	System And Method For Threat Detection And Identification	10/31/2014	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	10284574	https://patents.google.com/patent/US10284574
P01-1306.02	Late Load Technique for Deploying a Virtualization Layer Underneath a Running Operating System	8/5/2016	Neeraj Kulkarni; Udo Steinberg	ISSUED	10108446	https://patents.google.com/patent/US10108446
P01-1310.02	Technique for Establishing Secure Communication Between Host and Guest Processes of a Virtualization Architecture	8/15/2016	Udo Steinberg	ISSUED	10846117	https://patents.google.com/patent/US10846117
P01-1312.02	System and Method of Threat Detection Under Hypervisor Control	6/29/2016	Atul Kabra; Julian Stecklina; Hirendra Rathor; Udo Steinberg	ISSUED	10033759	https://patents.google.com/patent/US10033759
P01-1313.02	Method to Detect Forgery and Exploits Using Last Branch Recording Registers	6/29/2016	Jonas Pfoh; Phung-Te Ha	ISSUED	10621338	https://patents.google.com/patent/US10621338
P01-1314.02	Technique for Protecting Guest Processes Using a Layered Virtualization Architecture	8/5/2016	Udo Steinberg	ISSUED	10447728	https://patents.google.com/patent/US10447728
P01-1324.02	Exploit Detection System	6/15/2015	Anil Gupta; Harinath Ramchetty; Japneet Singh	ISSUED	10148693	https://patents.google.com/patent/US10148693
P01-1334.02	Virtual System and Method for Securing External Network Connectivity	6/30/2016	Udo Steinberg	ISSUED	11113086	https://patents.google.com/patent/US11113086
P01-1348.02	Code Injection for Remediation of Content Processing in an Endpoint	10/23/2015	Osman Ismael	ISSUED	10474813	https://patents.google.com/patent/US10474813
P01-1351	Dynamic Content Activation for Automated Analysis of Embedded Objects	3/30/2015	Sai Vashisht; Sushant Paithane	ISSUED	9438613	https://patents.google.com/patent/US9438613
P01-1353	Methods of Identifying Heap Spray Attacks Using Memory Anomaly Detection	9/7/2016	Sushant Paithane; Sai Vashisht	ISSUED	10430586	https://patents.google.com/patent/US10430586

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	ApplPat. #	Google Patents
P01-1354	Methods for Detecting File Altering Malware in VM Based Analysis	3/31/2015	Raymond Yang; Sai Vashisht; Sushant Paithane; Yasir Khalid	ISSUED	9483644	https://patents.google.com/patent/US9483644
P01-1355.02	Selective Virtualization for Security Threat Detection	3/25/2016	Michael Vincent; Sushant Paithane	ISSUED	10417031	https://patents.google.com/patent/US10417031
P01-1356	Detecting Malware Based on Reflection	4/23/2015	Abhishek Singh; Varun Jain	ISSUED	9594904	https://patents.google.com/patent/US9594904
P01-1358	System and Method for Malware Containment	2/11/2015	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	9197664	https://patents.google.com/patent/US9197664
P01-1360	System, Apparatus and Method for Automatically Verifying Exploits Within Suspect Objects and Highlighting the Display Information Associated with the Verified Exploits	2/11/2015	Ashar Aziz; Muhammad Amin; Osman Ismael; Zheng Bu	ISSUED	9306974	https://patents.google.com/patent/US9306974
P01-1361.02	Centralized Aggregation Technique for Detecting Lateral Movement of Advanced Persistent Threat Attacks in a Network	3/31/2016	Ashar Aziz	ISSUED	10454950	https://patents.google.com/patent/US10454950
P01-1362.02	Leveraging Behavior-based Rules for Malware Family Classification	12/11/2015	Abdul Salam; Farrukh Shahzad; Fahim Abbassi	ISSUED	10176321	https://patents.google.com/patent/US10176321
P01-1378	System and Method for Detecting Interpreter-based Exploit Attacks	9/29/2015	Sushant Paithane; Sai Vashisht	ISSUED	10033747	https://patents.google.com/patent/US10033747
P01-1379	Systems and Methods for Analyzing Malicious PDF Network Content	3/30/2015	Ashar Aziz; Stuart Gresley Staniford	ISSUED	9438622	https://patents.google.com/patent/US9438622
P01-1380	Systems and Methods for Malware Attack Prevention	11/24/2014	Jayaraman Manni; Wei-Lung Lai; Ashar Aziz	ISSUED	10165000	https://patents.google.com/patent/US10165000
P01-1381.02	Virtual System and Method with Threat Protection	6/30/2016	Udo Steinberg	ISSUED	10,395,029	https://patents.google.com/patent/US10395029
P01-1383	Cyber Attack Early Warning System	9/30/2015	Divyesh Mehra; Abhishek Singh	ISSUED	9825989	https://patents.google.com/patent/US9825989
P01-1386.02	System and Method for Protecting a Software Component Running in a Virtual Machine Through Virtual Interrupts by the Virtualization Layer	6/30/2016	Udo Steinberg	ISSUED	10726127	https://patents.google.com/patent/US10726127
P01-1387.02	System and Method for Protecting Memory Pages Associated with a Process Using a Virtualization Layer	6/30/2016	Udo Steinberg	ISSUED	10216927	https://patents.google.com/patent/US10216927
P01-1390	Electronic Message Analysis for Malware Detection	6/22/2015	Ashar Aziz; Henry Uyeno; Jayaraman Manni; Muhammad Amin; Stuart Gresley Staniford	ISSUED	10027690	https://patents.google.com/patent/US10027690
P01-1391	Malicious Content Analysis Using Simulated User Interaction Without User Involvement	7/20/2015	Emmanuel Thioux	ISSUED	9912698	https://patents.google.com/patent/US9912698
P01-1392	Detection and Classification of Exploit Kits	9/30/2015	Josh Gomez; Abhishek Singh	ISSUED	9825976	https://patents.google.com/patent/US9825976
P01-1393.02	Mobile Application Risk Analysis	6/30/2016	Raymond Wei; Zhang Lei Wang	ISSUED	10715542	https://patents.google.com/patent/US10715542

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	Appl/Pat. #	Google Patents
P01-1400	System and Method for Multi-Application, Multi-Plugin Analysis for Use in Detecting a Malicious Attack	11/10/2015	Sushant Paithane; Sai Vashisht; Yasir Khalid; Alex Pilipenko; Muhammad Rizwan	ISSUED	10284575	https://patents.google.com/patent/US10284575
P01-1401	Malware analysis in accordance with an analysis plan	10/23/2015	Ali Mesdaq; Michael Vincent; Emmanuel Thioux; Abhishek Singh; Sai Vashisht	ISSUED	9910988	https://patents.google.com/patent/US9910988
P01-1402	System and Method for Classifying Malware Within Content Created During Analysis of a Specimen	10/23/2015	Michael Vincent; Ali Mesdaq; Emmanuel Thioux; Abhishek Singh; Sai Vashisht	ISSUED	10515214	https://patents.google.com/patent/US10515214
P01-1403	Detection of Credential Spearphishing Attacks Using Email Analysis	9/30/2015	Ali Mesdaq; Abhishek Singh; Varun Jain	ISSUED	10601865	https://patents.google.com/patent/US10601865
P01-1405	Method to Detect Application Execution Hijacking Using Memory Protection	9/30/2015	Amit Malik; Raghav Pande; Aakash Jain	ISSUED	10,210,329	https://patents.google.com/patent/US10210329
P01-1411.02	Exploit of Privileges Detection Framework	6/29/2016	Michael Vincent; Sai Vashisht; Jonas Pfoh	ISSUED	10565378	https://patents.google.com/patent/US10565378
P01-1413	Malicious Message Analysis System	12/30/2015	Abhishek Singh	ISSUED	10050998	https://patents.google.com/patent/US10050998
P01-1418.02	Cyber-Security Framework for Application of Virtual Features	6/29/2016	Shivani Deshpande; Yasir Khalid; Gregory Templeman	FILED	15/197,653	
P01-1424	Susceptible Environment Detection System	12/31/2015	Yasir Khalid; Shivani Deshpande	ISSUED	9824216	https://patents.google.com/patent/US9824216
P01-1425	Malware Detection System with Contextual Analysis	12/31/2015	Yasir Khalid; Alexander Otvagin; Sai Vashisht	ISSUED	10581874	https://patents.google.com/patent/US10581874
P01-1437	System and Method for Triggering Analysis of an Object for Malware in Response to Modification of that Object	12/30/2015	Vineet Kumar; Alexander Otvagin; Nikita Borodulin	ISSUED	10133866	https://patents.google.com/patent/US10133866
P01-1442	Detecting Delayed Activation Malware Using a Primary Controller and Plural Time Controllers	6/29/2016	Michael Vincent	ISSUED	10706149	https://patents.google.com/patent/US10706149
P01-1449	Technique for Implementing Memory Views Using a Layered Virtualization Architecture	9/6/2016	Osman Ismael; Udo Steinberg	ISSUED	10191861	https://patents.google.com/patent/US10191861
P01-1453	System and Method for Malware Containment	11/23/2015	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	10,068,091	https://patents.google.com/patent/US10068091
P01-1455.02	Enhanced Malware Detection for Generated Object	6/19/2017	Sushant Paithane; Sai Vashisht	ISSUED	10581879	https://patents.google.com/patent/US10581879
P01-1461	User Interface with Real-time Visual Playback Along with Synchronous Textual Analysis Log Display and Event/Time Index for Anomalous Behavior Detection in Applications	11/23/2015	Adrian Mettler; Ashar Aziz; Harnish Goradia; Noah Johnson; Osman Ismael	ISSUED	10019338	https://patents.google.com/patent/US10019338
P01-1462	Framework For Efficient Security Coverage Of Mobile Software Applications Using Machine Learning	10/12/2015	Osman Ismael; Dawn Song; Phung-Te Ha; Peter Gilbert; Hui Xue	ISSUED	9594905	https://patents.google.com/patent/US9594905

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	ApplPat. #	Google Patents
P01-1463	Framework For Efficient Security Coverage Of Mobile Software Applications	11/2/2015	Ashar Aziz; Dawn Song; Osman Ismael; Noah Johnson; Prashanth Mohan; Hui Xue	ISSUED	9792196	https://patents.google.com/patent/US9792196
P01-1464	System, Apparatus and Method for Conducting on-the-fly Decryption of Encrypted Objects for Malware Detection	11/16/2015	Ali Islam	ISSUED	9560059	https://patents.google.com/patent/US9560059
P01-1465	Dynamically Remote Tuning of a Malware Content Detection System	12/28/2015	Darien Kindlund; Emmanuel Thioux; Michael Vincent; Sai Vashisht	ISSUED	10341363	https://patents.google.com/patent/US10341363
P01-1475	Micro-Virtualization Architecture for Threat-Aware Microvisor Deployment in a Node of a Network Environment	1/28/2016	Ashar Aziz; Osman Ismael	ISSUED	9946568	https://patents.google.com/patent/US9946568
P01-1476	System and Method for Network Behavior Detection	1/15/2016	James Bennett; Zheng Bu	ISSUED	10432649	https://patents.google.com/patent/US10432649
P01-1485	System and Methods for Advanced Malware Detection Placement of Transition Events	6/22/2016	Alex Pilipenko; Phung-Te Ha	ISSUED	10169585	https://patents.google.com/patent/US10169585
P01-1487.02	Ransomware Detection and Mitigation	7/24/2017	Anil Gupta; Japneet Singh	ISSUED	10503904	https://patents.google.com/patent/US10503904
P01-1490.02	Malware Detection Verification and Enhancement Using Detection Systems Located at the Network Periphery and Endpoint Devices	3/29/2017	Ashar Aziz; Osman Ismael	ISSUED	10893059	https://patents.google.com/patent/US10893059
P01-1491.02	Malware Detection Verification and Enhancement By Coordinating Endpoint and Malware Detection Systems	6/26/2017	Ashar Aziz; Osman Ismael	ISSUED	10462173	https://patents.google.com/patent/US10462173
P01-1502.02	Dynamic Adaptive Defense for Cyber-security Threats	4/1/2016	Fred Brott; Paul Smith; Thomas Bernard; David Scott	ISSUED	10129290	https://patents.google.com/patent/US10129290
P01-1520	Improving Detection Efficacy of Virtual Machine-Based Analysis With Application Specific Events	2/12/2016	Sai Vashisht; Sushant Paithane	ISSUED	9916440	https://patents.google.com/patent/US9916440
P01-1522	Fuzzy hash of behavioral results	3/21/2016	Ali Mesdaq; Paul Westin	ISSUED	9912691	https://patents.google.com/patent/US9912691
P01-1523	System, Apparatus and Method for Automatically Verifying Exploits Within Suspect Objects and Highlighting the Display Information Associated with the Verified Exploits	10/19/2016	Zheng Bu; Muhammad Amin; Ashar Aziz	ISSUED	10476909	https://patents.google.com/patent/US10476909
P01-1524	Hypervisor-based Selective Virtualization for Security Threat Detection	9/16/2019	Sushant Paithane; Michael Vincent	FILED	16/572537	
P01-1525	System and Method for Detecting Malicious Links in Electronic Messages	3/28/2016	Vinay Pidathala; Henry Uyeno	ISSUED	9888019	https://patents.google.com/patent/US9888019
P01-1528	Systems and methods for computer worm defense	4/4/2016	Ashar Aziz	ISSUED	9516057	https://patents.google.com/patent/US9516057
P01-1529	Electronic Device for Aggregation, Correlation and Consolidation of Analysis Attributes	4/11/2016	Jayaraman Manni; Michael Berrow; Philip Eun	ISSUED	9641546	https://patents.google.com/patent/US9641546

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	AppnPat. #	Google Patents
P01-1530	System and Method to Detect Premium Attacks on Electronic Networks and Electronic Devices	6/28/2016	Alex Rivlin; Naveed Alam; Vinoth Duraisamy	ISSUED	10121000	https://patents.google.com/patent/US10121000
P01-1542	Advanced Malware Detection Using Similarity Analysis	9/29/2016	Jimmy Su	ISSUED	10491627	https://patents.google.com/patent/US10491627
P01-1543	System and Method for Detecting Malicious Traffic Using a Virtual Machine Environment	5/27/2016	Ashar Aziz	ISSUED	9661018	https://patents.google.com/patent/US9661018
P01-1544	File Extraction from Memory Dump for Malicious Content Analysis	5/27/2016	Osman Ismael; Muhammad Amin; Emmanuel Thioux	ISSUED	10198574	https://patents.google.com/patent/US10198574
P01-1546	Arrangement for Efficient Search and Retrieval of Indexes Used to Locate Captured Packets	7/20/2016	Randy Caldejon; Dennis Lee Edwards; Christopher Hayes Fauerbach	ISSUED	9876701	https://patents.google.com/patent/US9876701
P01-1571	System and Method for Managing Formation and Modification of a Cluster within a Malware Detection System	9/30/2016	Mumtaz Siddiqui	ISSUED	10,476,906	https://patents.google.com/patent/US10476906
P01-1572	System and Method for Managing Sensor Enrollment	9/30/2016	Mumtaz Siddiqui	ISSUED	10601863	https://patents.google.com/patent/US10601863
P01-1573	Cluster Configuration within a Scalable Malware Detection System	9/30/2016	Alexander Otvagin; Sakthi Subramanian; Krists Krilovs; Diptesh Chatterjee; Prakhyath Rajanna	ISSUED	10785255	https://patents.google.com/patent/US10785255
P01-1574.02	Timeout Management Services in Scalable Malware Detection System	12/27/2016	Alexander Otvagin; Mumtaz Siddiqui	ISSUED	10671721	https://patents.google.com/patent/US10671721
P01-1575	Distributed Malware Detection System and Submission Workflow Thereof	9/30/2016	Alexander Otvagin	ISSUED	10616266	https://patents.google.com/patent/US10616266
P01-1590	System and Method of Detecting Delivery of Malware Based on Indicators of Compromise from Different Sources	6/6/2016	Alex Rivlin; Divyesh Mehra; Henry Uyeno; Vinay Pidathala	ISSUED	9609007	https://patents.google.com/patent/US9609007
P01-1591	Methods and System for Hiding Transition Events for Malware Detection	6/30/2016	Phung-Te Ha	ISSUED	10341365	https://patents.google.com/patent/US10341365
P01-1595.02	Methods and Apparatus for Graphical User Interface Environment for Creating Threat Response Courses of Action for Computer Networks	6/22/2016	Christopher Nelson Bailey; Bernd Constant; Juan Manuel Vela	ISSUED	10536484	https://patents.google.com/patent/US10536484
P01-1605	Cyber-Security System and Method for Weak Indicator Detection and Correlation to Generate Strong Indicators	6/29/2017	Sundar Jeyaraman; Ramu Ramaswamy	ISSUED	10601848	https://patents.google.com/patent/US10601848
P01-1606	Multi-Vector Detection and Analysis	12/27/2016	Sakthi Subramanian	ISSUED	10,523,609	https://patents.google.com/patent/US10523609
P01-1607.02	Enterprise Search	11/3/2017	Steven Ross; Ai Duong; Larry King; Jack Young	ISSUED	10795991	https://patents.google.com/patent/US10795991
P01-1608	Network Based Malware Detection	7/18/2016	Shrikrishna Karandikar; Muhammad Amin; Shivani Deshpande; Yasir Khalid	ISSUED	9661009	https://patents.google.com/patent/US9661009

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	ApplPat. #	Google Patents
P01-1610	Technique for Malware Detection Capability Comparison of Network Security Devices	11/22/2016	Yasir Khalid; Nadeem Shahbaz	ISSUED	10587647	https://patents.google.com/patent/US10587647
P01-1615	System and Method for Detecting Malicious Traffic Using a Virtual Machine Configured with a Select Software Environment	8/1/2016	Ashar Aziz	ISSUED	10567405	https://patents.google.com/patent/US10567405
P01-1616	Correlation and Consolidation of Analytic Data for Holistic View of a Malware Attack	8/2/2016	Sean Cunningham; Robert Dana; Joseph Nardone; Joseph Faber; Kevin Arunski	ISSUED	10033748	https://patents.google.com/patent/US10033748
P01-1632	Distributed Systems and Methods for Automatically Detecting Unknown Bot and Botnets	8/29/2016	Ali Islam; Todd Rosenberry; Atif Mushtaq; Ashar Aziz	ISSUED	10200384	https://patents.google.com/patent/US10200384
P01-1633	Modular architecture for analysis database	9/1/2016	Arsen Movsesyan; Vineet Kumar; Alexander Otvagin	ISSUED	9787706	https://patents.google.com/patent/US9787706
P01-1634	Detection of Phishing Attacks Using Similarity Analysis	3/24/2017	Rundong Liu	ISSUED	10904286	https://patents.google.com/patent/US10904286
P01-1635	Systems and methods for analyzing PDF documents	9/2/2016	Ashar Aziz; Stuart Gresley Staniford	ISSUED	9954890	https://patents.google.com/patent/US9954890
P01-1637.02	Cyber-Security System And Method For Detecting Escalation Of Privileges Within An Access Token	3/14/2019	Atul Kabra; Japneet Singh; Ratnesh Pandey	FILED	16/353984	
P01-1638	System and Method for the Programmatic Runtime Deobfuscation of Obfuscated Software Utilizing Virtual Machine Introspection and Manipulation of Virtual Machine Guest Memory Permissions	10/3/2016	Antony Saba; Robert Jung	ISSUED	10380343	https://patents.google.com/patent/US10380343
P01-1640.02	Ransomware File Modification Prevention Technique	6/29/2018	Yasir Khalid; Nadeem Shahbaz; Raghunath Konda	ISSUED	10893068	https://patents.google.com/patent/US10893068
P01-1641	System and method for detecting file altering behaviors pertaining to a malicious attack	10/31/2016	Raymond Yang; Sai Vashisht; Sushant Paithane; Yasir Khalid	ISSUED	9846776	https://patents.google.com/patent/US9846776
P01-1644.02	Adaptive Virtual machine Snapshot Update Framework for Malware Behavioral Analysis	6/19/2017	Sai Vashisht; Phung-Te Ha; Sushant Paithane; Sumer Deshpande	ISSUED	10552610	https://patents.google.com/patent/US10552610
P01-1645	Optimized Resource Allocation for Virtual Machines Within a Malware Content Detection System	11/14/2016	Osman Ismael	ISSUED	10469512	https://patents.google.com/patent/US10469512
P01-1651.02	Subscription-Based Malware Detection Architecture	3/29/2018	Mumtaz Siddiqui; Manju Radhakrishnan; Deepak Agarwal	FILED	15/940,352	
P01-1652	Efficient Access to Sparse Packets in Large Repositories of Stored Network Traffic	12/2/2016	Christopher Hayes Fauerbach; Dennis Lee Edwards	ISSUED	9674298	https://patents.google.com/patent/US9674298
P01-1653	Subscriber Based Protection System	12/5/2016	Ashar Aziz	ISSUED	9838411	https://patents.google.com/patent/US9838411
P01-1654	System and Method for Predicting and Mitigating Cybersecurity System Misconfigurations	3/29/2018	Wei Quan; Raghunath Konda	ISSUED	10826931	https://patents.google.com/patent/US10826931

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	Appl/Pat. #	Google Patents
P01-1655	Method for Detecting Malware Within Network Content	12/12/2016	Ashar Aziz; Stuart Gresley Staniford; Muhammad Amin; Henry Uyeno; Samuel Yie	ISSUED	10282548	https://patents.google.com/patent/US10282548
P01-1656.02	Data Extraction System for Malware Analysis	6/19/2017	Sai Vashisht; Phung-Te Ha; Durvesh Ashok Raut; Sushant Paithane	ISSUED	10902119	https://patents.google.com/patent/US10902119
P01-1657	System and Method for Detecting Time-Bomb Malware	12/29/2016	PAITHANE SUSHANT; VINCENT MICHAEL; VASHISHT SAI; KINDLUND DARIEN	ISSUED	10083302	https://patents.google.com/patent/US10083302
P01-1658	System and Method for Bot Detection	4/17/2017	Ashar Aziz; Wei-Lung Lai; Jayaraman Manni	ISSUED	10587636	https://patents.google.com/patent/US10587636
P01-1661	System and method for detecting malicious activity based on at least one environmental property	2/6/2017	Darien Kindlund; Julia Wolf; James Bennett	ISSUED	9934381	https://patents.google.com/patent/US9934381
P01-1662	System and method for offloading packet processing and static analysis operations	3/6/2017	Madhusudan Challa; Masood Mehmood; Muhammad Amin; Ramaswamy Ramaswamy; Shrikrishna Karandikar	ISSUED	9787700	https://patents.google.com/patent/US9787700
P01-1663	System and Method for Signature Generation	3/6/2017	Ashar Aziz	ISSUED	10511614	https://patents.google.com/patent/US10511614
P01-1664	System and Method of Detecting Delivery of Malware Using Cross-Customer Data	3/27/2017	Alex Rivlin; Divyesh Mehra; Henry Uyeno; Vinay Pidathala	ISSUED	10027696	https://patents.google.com/patent/US10027696
P01-1665	System and Method for Preventing Malware Evasion	9/27/2017	Phung-Te Ha; Min Li	ISSUED	10747872	https://patents.google.com/patent/US10747872
P01-1667	Phishing Attack Detection	10/1/2017	Pavan Chitturi; Surya Rao	ISSUED	10805346	https://patents.google.com/patent/US10805346
P01-1669	Advanced Persistent Threat (APT) Detection Center	4/17/2017	Thoufique Haq; Jinjian Zhai; Vinay Pidathala	ISSUED	10735458	https://patents.google.com/patent/US10735458
P01-1670	Malicious Content Analysis with Multi-Version Application Support Within Single Operating Environment	4/17/2017	Yasir Khalid; Muhammad Amin; Emily Jing	ISSUED	10025927	https://patents.google.com/patent/US10025927
P01-1679	Classifying Sets of Malicious Indicators for Detecting Command and Control Communications Associated with Malware	4/24/2017	Ali Islam; Zheng Bu	ISSUED	10033753	https://patents.google.com/patent/US10033753
P01-1681	Correlation and Consolidation of Analytic Data for Holistic View of a Malware Attack	5/1/2017	Jayaraman Manni; Michael Berrow; Philip Eun	ISSUED	10122746	https://patents.google.com/patent/US10122746
P01-1683	Analytics-Based Security Monitoring System and Method	5/12/2017	Justin Neumann	ISSUED	10104102	https://patents.google.com/patent/US10104102
P01-1690	System, Device and Method for Detecting a Malicious Attack Based on Direct Communications Between Remotely Hosted Virtual Machines and Malicious Web Servers	5/19/2017	Shrikrishna Karandikar; Muhammad Amin; Shivani Deshpande; Yasir Khalid	ISSUED	9838408	https://patents.google.com/patent/US9838408
P01-1692.02	Subscription-Based Malware Detection	3/29/2018	Mumtaz Siddiqui; Manju Radhakrishnan	ISSUED	10791138	https://patents.google.com/patent/US10791138
P01-1693.02	Attribute-Controlled Malware Detection	3/29/2018	Mumtaz Siddiqui; Manju Radhakrishnan; Deepak Agarwal	ISSUED	10798112	https://patents.google.com/patent/US10798112

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	Appl/Pat. #	Google Patents
P01-1696	Multistage System and Method for Analyzing Obfuscated Content for Malware	6/26/2017	Amit Malik; Shivani Deshpande; Wei Zheng; Abhishek Singh	ISSUED	10657251	https://patents.google.com/patent/US10657251
P01-1699	Framework for Classifying an Object as Malicious with Machine Learning for Deploying Updated Predictive Models	6/26/2017	Abhishek Singh; Ali Mesdaq; Anirban Das; Varun Jain	ISSUED	10366231	https://patents.google.com/patent/US10366231
P01-1701	Dynamic Adaptive Defense for Cyber-security Threats	4/28/2017	Fred Brott; Paul Smith; Thomas Bernard; David Scott	ISSUED	10505972	https://patents.google.com/patent/US10505972
P01-1703.02	Platform and Method for Enhanced Cyber-Attack Detection and Response Employing a Global Data Store	12/17/2018	Sai Vashisht; Alexander Otvagin	FILED	16/222194	
P01-1707	Systems, Apparatus and Method for Reconfiguring Virtual Machines	8/14/2017	Osman Ismael	ISSUED	11075945	https://patents.google.com/patent/US11075945
P01-1710	System and Method for Run-time Object Classification	8/28/2017	Zheng Bu; Vinay Pidathala; Ashar Aziz	ISSUED	10467411	https://patents.google.com/patent/US10467411
P01-1711	Multi-level Control for Enhanced Resource Management and Object Evaluation Management	9/29/2017	Manju Radhakrishnan; Alexander Otvagin; Mumtaz Siddiqui	ISSUED	10554507	https://patents.google.com/patent/US10554507
P01-1712	System and Method for Enforcing Compliance with Subscription Requirements for Cyber-Attack Detection Service	9/29/2017	Manju Radhakrishnan; Mumtaz Siddiqui	ISSUED	10848397	https://patents.google.com/patent/US10848397
P01-1720	System and Method for Offloading Packet Processing and Static Analysis Operations	10/9/2017	Madhusudan Challa; Masood Mehmood; Muhammad Amin; Ramaswamy Ramaswamy; Shrikrishna Karandikar	ISSUED	10454953	https://patents.google.com/patent/US10454953
P01-1721.02	Phishing Website Detection using Deep Convolutional Neural Network	6/8/2018	Bala Rajagopalan; Rahul Mohandas; Santhosh Ramachandran; Vamshi Kumar Kurva	ISSUED	10834128	https://patents.google.com/patent/US10834128
P01-1725	Security Cloud Service Framework for Hardening in the Field Code of Mobile Software Applications	11/17/2017	Ashar Aziz; Osman Ismael	ISSUED	10,181,029	https://patents.google.com/patent/US10181029
P01-1726	Intelligent Context Aware User Interaction for Malware Detection	12/4/2017	Sai Vashisht; Sushant Paithane; Yasir Khalid	ISSUED	10798121	https://patents.google.com/patent/US10798121
P01-1727	Cyber Attack Early Warning System	11/17/2017	Divyesh Mehra; Abhishek Singh	ISSUED	10873597	https://patents.google.com/patent/US10873597
P01-1728	Susceptible Environment Detection System	11/17/2017	Yasir Khalid; Shivani Deshpande	ISSUED	10445502	https://patents.google.com/patent/US10445502
P01-1729	Framework For Efficient Security Coverage Of Mobile Software Applications	10/16/2017	Ashar Aziz; Osman Ismael; Hui Xue; Dawn Song; Noah Johnson; Prashanth Mohan	ISSUED	10296437	https://patents.google.com/patent/US10296437
P01-1733	System and Methods for Computer Worm Defense	12/4/2017	Ashar Aziz	ISSUED	10097573	https://patents.google.com/patent/US10097573
P01-1735.02	Platform and Method for Performing Cybersecurity Analyses Employing an Intelligence Hub with a Modular Architecture	12/17/2018	Sai Vashisht; Alexander Otvagin	FILED	16/223107	
P01-1736.02	Platform and Method for Retroactive Reclassification	12/17/2018	Alexander Otvagin; Sai Vashisht	FILED	16/222,501	

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	ApplPat. #	Google Patents
	Employing a Cybersecurity-Based Global Data Store					
P01-1737	System and Method for Automatically Generating Malware Detection Rule Recommendations	3/30/2018	Victor Fang; Wei Quan; Richard Lai; Robert Venal; Benjamin Chang	ISSUED	11003773	https://patents.google.com/patent/US11003773
P01-1739.02	System and Method for Automatically Prioritizing Rules for Cyber-Threat Detection and Mitigation	3/14/2019	Chinmoy Dey; Christopher Glyer; Paul Schottland	FILED	16/353988	
P01-1741.02	Multi-vector Malware Detection Data Sharing System for Improved Detection	3/14/2019	Sai Vashisht; Sushant Paithane	FILED	16/353982	
P01-1747.02	Methods and Apparatus for Cyberattack Detection via Endpoint Source Key Exchange	9/23/2019	Christopher Glyer; Andrew Davis; Seth Summersett	FILED	16/578,986	
P01-1749	System And Method For Distributed Cluster Configuration Monitoring And Management	6/28/2018	Alexey Yakymovych; Alexander Otvagin	FILED	16/022644	
P01-1750	Intelligent System for Mitigating Cybersecurity Risk by Analyzing Domain Name System Traffic	9/28/2018	Ralph Casey; Ken Bagnall; John Jensen	FILED	16/146,211	
P01-1791	System And Method For Detecting Repetitive Cybersecurity Attacks Constituting An Email Campaign	6/27/2018	Jijo Xavier; Robert Venal	ISSUED	11075930	https://patents.google.com/patent/US11075930
P01-1796	Post-intrusion detection of Cyber-Attacks During Lateral Movement Within Enterprise Networks	6/29/2018	Sundar Jeyaraman; Ramu Ramaswamy	ISSUED	10855700	https://patents.google.com/patent/US10855700
P01-1798.02	System and Method for Improved End-to-End Cyber-security Machine Learning and Deployment	7/30/2018	Sai Vashisht; Victor Fang; Rahul Khul	FILED	16/049,687	
P01-1799	System and Method for Mitigating Cyberattacks Against Processor Operability by a Guest Process	9/13/2018	Min Li; Phung-Te Ha	FILED	16/130,944	
P01-1802	System and Method for Virtual Analysis of Network Data	3/5/2018	Ashar Aziz; Osman Ismael; Ramesh Radhakrishnan	ISSUED	10623434	https://patents.google.com/patent/US10623434
P01-1804	Malicious Content Analysis Using Simulated User Interaction Without User Involvement	3/5/2018	Emmanuel Thioux	ISSUED	10848521	https://patents.google.com/patent/US10848521
P01-1805	System and Method for Detecting Malicious Links in Electronic Messages	2/5/2018	Vinay Pidathala; Henry Uyeno	ISSUED	10505956	https://patents.google.com/patent/US10505956
P01-1806	Dynamically Adaptive Framework and Method for Classifying Malware Using Intelligent Static, Emulation and Dynamic Analyses	3/5/2018	Ali Mesdaq; Michael Vincent; Emmanuel Thioux; Abhishek Singh; Sai Vashisht	ISSUED	10713362	https://patents.google.com/patent/US10713362
P01-1807	Fuzzy Hash of Behavioral Results	3/5/2018	Ali Mesdaq; Paul Westin	ISSUED	10218740	https://patents.google.com/patent/US10218740
P01-1808	Improving Detection Efficacy of Virtual Machine-Based Analysis With Application Specific Events	3/12/2018	Sai Vashisht; Sushant Paithane	ISSUED	10534906	https://patents.google.com/patent/US10534906

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	Appl/Pat. #	Google Patents
P01-1809	Verification of Trusted Threat-Aware Microvisor	6/18/2018	Hendrik Tews; Osman Ismael	FILED	16/011,495	
P01-1812	System and Method for Selectively Processing Content After Identification and Removal of Malicious Content	12/21/2018	Zain Gardezi	FILED	16/231089	
P01-1816.02	System and Method for Detecting Cyberattacks Impersonating Legitimate Sources	12/23/2019	Zain Gardezi; Mohsin Saeed; Hassan Ahmad; Fahim Abbassi; Farrukh Shahzad	FILED	16/725674	
P01-1845	System and method for detecting malicious activity based on at least one environmental property	4/2/2018	Darien Kindlund; Julia Wolf; James Bennett	ISSUED	10467414	https://patents.google.com/patent/US10467414
P01-1848	Micro-Virtualization Architecture for Threat-Aware Microvisor Deployment in a Node of a Network Environment	4/16/2018	Ashar Aziz; Osman Ismael	ISSUED	10740456	https://patents.google.com/patent/US10740456
P01-1849	Microvisor-Based Malware Detection Appliance Architecture	4/2/2018	Osman Ismael	ISSUED	10528726	https://patents.google.com/patent/US10528726
P01-1854	Electronic Message Analysis for Malware Detection	7/16/2018	Ashar Aziz; Henry Uyeno; Jayaraman Manni; Muhammad Amin; Stuart Gresley Staniford	ISSUED	10757120	https://patents.google.com/patent/US10757120
P01-1855	Malicious Content Analysis with Multi-Version Application Support Within Single Operating Environment	7/16/2018	Yasir Khalid; Muhammad Amin; Emily Jing	FILED	16/036,873	
P01-1856	Interactive Infection Visualization for Improved Exploit Detection and Signature Generation for Malware and Malware Families	7/16/2018	Anil Gupta; Hirendra Rathor; Kaushal Dalal	ISSUED	10868818	https://patents.google.com/patent/US10868818
P01-1857	System and Method of Detecting Delivery of Malware Using Cross-Customer Data	7/16/2018	Alex Rivlin; Divyesh Mehra; Henry Uyeno; Vinay Pidathala	ISSUED	10404725	https://patents.google.com/patent/US10404725
P01-1859	System and Method for Bootkit Detection	9/27/2018	Andrew Davis; Fred House; Ryan Fisher	FILED	16/144,781	
P01-1864	Malicious Message Analysis System	8/13/2018	Abhishek Singh	ISSUED	10581898	https://patents.google.com/patent/US10581898
P01-1868	System and Method for Scanning Remote Services to Locate Stored Objects with Malware	12/21/2018	Sai Vashisht	FILED	16/231074	
P01-1869.02	System and Method for Retrieval and Analysis of Operational Data From Customer, Cloud-Hosted Virtual Resources	8/30/2019	Sai Vashisht; Rahul Khul; Sumer Deshpande; Sushant Paithane	FILED	16/557512	
P01-1870.02	Automated System for Triage of Customer Issues	12/24/2019	Sai Vashisht; Rahul Khul	FILED	16/726723	
P01-1880	System and Method for Detecting Time-Bomb Malware	9/24/2018	Sushant Paithane; Michael Vincent; Sai Vashisht; Darien Kindlund	ISSUED	10335738	https://patents.google.com/patent/US10335738
P01-1881	Intrusion Prevention and Remedy System	9/24/2018	Hatem Eyada	ISSUED	10757134	https://patents.google.com/patent/US10757134
P01-1883	User Interface with Real-Time Visual Playback Along with Synchronous Textual Analysis Log Display and Event/Time	7/9/2018	Adrian Mettler; Ashar Aziz; Harnish Goradia; Noah Johnson; Osman Ismael	ISSUED	10929266	https://patents.google.com/patent/US10929266

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	Appl/Pat. #	Google Patents
	Index for Anomalous Behavior Detection in Applications					
P01-1886	Classifying Sets of Malicious Indicators for Detecting Command and Control Communications Associated with Malware	7/23/2018	Ali Islam; Zheng Bu	ISSUED	10637880	https://patents.google.com/patent/US10637880
P01-1887	System and Method for Detecting Interpreter-based Exploit Attacks	7/23/2018	Sushant Paithane; Sai Vashisht	ISSUED	10887328	https://patents.google.com/patent/US10887328
P01-1888	System and method for verifying a cyberthreat	7/23/2018	Sean Cunningham; Robert Dana; Joseph Nardone; Joseph Faber; Kevin Arunski	ISSUED	10701091	https://patents.google.com/patent/US10701091
P01-1900	Correlation and Consolidation of Analytic Data for Holistic View of a Malware Attack	11/5/2018	Jayaraman Manni; Michael Berrow; Philip Eun	ISSUED	10812513	https://patents.google.com/patent/US10812513
P01-1901	Dynamic Adaptive Defense for Cyber-security Threats	11/9/2018	Fred Brott; Paul Smith; Thomas Bernard; David Scott	ISSUED	10616265	https://patents.google.com/patent/US10616265
P01-1908	System and Method for Supporting Cross-Platform Data Verification	6/28/2019	Robert Beard; Robin Caron	FILED	16/457573	
P01-1909.02	Seamless Endpoint Rule Update Mechanism	2/20/2020	Robin Caron; Robert Beard; Neeraj Kulkarni	FILED	16/796541	
P01-1910.02	System to Detect and Protect Against Cybersecurity Attacks on Servers	8/30/2019	Sai Vashisht; Ishan Sharma	FILED	16/557483	
P01-1920	System and Method for Triggering Analysis of an Object for Malware in Response to Modification of that Object	11/16/2018	Vineet Kumar; Alexander Otvagin; Nikita Borodulin	ISSUED	10872151	https://patents.google.com/patent/US10872151
P01-1921	Analytics-Based Security Monitoring System and Method	10/15/2018	Justin Neumann	ISSUED	10728263	https://patents.google.com/patent/US10728263
P01-1922	Late Load Technique for Deploying a Virtualization Layer Underneath a Running Operating System	10/15/2018	Neeraj Kulkarni; Udo Steinberg	FILED	16/160,923	
P01-1926	Exploit Detection System	12/3/2018	Anil Gupta; Harinath Ramchetty; Japneet Singh	ISSUED	10666686	https://patents.google.com/patent/US10666686
P01-1931.02	Method, Apparatus, and Computer-Readable Medium for Encoding Repetition and Definition Level Values for Semi-Structured Data	5/25/2016	Sattam Alsubaiee; Vinayak Borkar	ISSUED	10,866,940	https://patents.google.com/patent/US10866940
P01-1943	Dynamic Guest Image Creation and Rollback	3/25/2019	Harnish Goradia	ISSUED	11,068,587	https://patents.google.com/patent/US11068587
P01-1947	Method to Detect Application Execution Hijacking Using Memory Protection	2/15/2019	Amit Malik; Raghav Pande; Aakash Jain	FILED	16/277907	
P01-1949	System and Method for Identifying and Mitigating Cyberattacks through Malicious Position-Independent Code Execution	9/27/2019	Steve Davis	FILED	16/586794	
P01-1951.02	System and Method for Enhanced Malware Analysis of Electronic	9/29/2020	Sai Vashisht; Alexander Otvagin	FILED	17/037544	

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	ApplPat. #	Google Patents
	Messages Based on Dynamic Rendering					
P01-1971	System and Method for Multi-Application, Multi-Plugin Analysis for Use in Detecting a Malicious Attack	5/6/2019	Sushant Paithane; Sai Vashisht; Yasir Khalid; Alex Pilipenko; Muhammad Rizwan	ISSUED	10834107	https://patents.google.com/patent/US10834107
P01-1972	System And Method For Threat Detection And Identification	5/6/2019	Ashar Aziz; Jayaraman Manni; Wei-Lung Lai	ISSUED	11082435	https://patents.google.com/patent/US11082435
P01-1976.02	System and Method for Circumventing Evasive Code for Cyberthreat Detection	12/23/2020	Sai Vashisht; Sushant Paithane; Imtiyaz Yunus Pathan	FILED	17/133379	
P01-1978	Framework for Classifying an Object as Malicious with Machine Learning for Deploying Updated Predictive Models	7/29/2019	Abhishek Singh; Ali Mesdaq; Anirban Das; Varun Jain	ISSUED	10902117	https://patents.google.com/patent/US10902117
P01-1979	Dynamically Remote Tuning of a Malware Content Detection System	7/1/2019	Darien Kindlund; Emmanuel Thioux; Michael Vincent; Sai Vashisht	FILED	16/459536	
P01-1980	System and Method of Detecting Delivery of Malware Using Cross-Customer Data	8/30/2019	Alex Rivlin; Divyesh Mehra; Henry Uyeno; Vinay Pidathala	ISSUED	11019081	https://patents.google.com/patent/US11019081
P01-1985.02	Run-Time Configurable Cybersecurity System	12/23/2020	Sai Vashisht; Sagar Khangan	FILED	17/133397	
P01-1991.02	Subscription and Key Management System	12/23/2020	Sai Vashisht; Sumer Deshpande	FILED	17/133411	
P01-2005	Methods and Apparatus for Graphical User Interface Environment for Creating Threat Response Courses of Action for Computer Networks	12/18/2019	Christopher Nelson Bailey; Bernd Constant; Juan Manuel Vela	ISSUED	10986134	https://patents.google.com/patent/US10986134
P01-2006	Methods and Apparatus for Graphical User Interface Environment for Creating Threat Response Courses of Action for Computer Networks	12/18/2019	Christopher Nelson Bailey; Bernd Constant; Juan Manuel Vela	ISSUED	11063985	https://patents.google.com/patent/US11063985
P01-2011	System, Apparatus and Method for Automatically Verifying Exploits Within Suspect Objects and Highlighting the Display Information Associated with the Verified Exploits	11/8/2019	Zheng Bu; Muhammad Amin; Ashar Aziz	ISSUED	11089057	https://patents.google.com/patent/US11089057
P01-2012	System and method for offloading packet processing and static analysis operations	3/6/2017	Madhusudan Challa; Masood Mehmood; Muhammad Amin; Ramaswamy Ramaswamy; Shrikrishna Karandikar	ISSUED	11082436	https://patents.google.com/patent/US11082436
P01-2016	Malware Detection Verification and Enhancement By Coordinating Endpoint and Malware Detection Systems	10/28/2019	Ashar Aziz; Osman Ismael	FILED	16/666335	
P01-2023	System and Method for Detecting Malicious Traffic Using a Virtual Machine Configured with a Select Software Environment	2/14/2020	Ashar Aziz	FILED	16/791933	
P01-2025.02	Automated Enforcement of Security Policies in Cloud and Hybrid Infrastructure Environments	1/23/2018	Lisun Kung; Jose Renato Santos; Sarowar Golam Sikder	ISSUED	10721275	https://patents.google.com/patent/US10721275

FireEye Docket No	Title	Filing Date	All Inventors	Prosecution Status	ApplPat. #	Google Patents
P01-2028	Distributed Malware Detection System and Submission Workflow Thereof	4/6/2020	Alexander Otvagin	FILED	16/840584	
P01-2029	Dynamic Adaptive Defense for Cyber-security Threats	4/6/2020	Fred Brott; Paul Smith; Thomas Bernard; David Scott	FILED	16/841,383	
P01-2055	Automated Enforcement of Security Policies in Cloud and Hybrid Infrastructure Environment	6/22/2020	Lisun Kung; Jose Renato Santos; Sarowar Golam Sikder	FILED	16/908,681	
P01-2059	Technique for Verifying Exploit/Malware at Malware Detection Appliance Through Correlation with Endpoints	11/2/2020	Ashar Aziz; Osman Ismael	FILED	17/087550	
P01-2062	Detecting Delayed Activation Malware Using a Run-time monitoring Agent and Time-Dilation Logic	10/26/2020	Michael Vincent	FILED	17/080,786	
P01-2063	Enterprise Search	10/5/2020	Steven Ross; Ai Duong; Larry King; Jack Young	FILED	17/063618	
P01-2066	Subscription-Based Malware Detection	9/28/2020	Mumtaz Siddiqui; Manju Radhakrishnan	FILED	17/035538	
P01-2067	Attribute-Controlled Malware Detection	3/29/2018	Mumtaz Siddiqui; Manju Radhakrishnan; Deepak Agarwal	FILED	17/063648	
P01-2072	Malware Detection Verification and Enhancement Using Detection Systems Located at the Network Periphery and Endpoint Devices	1/11/2021	Ashar Aziz; Osman Ismael	FILED	17/146417	
P01-2073	Detection of Phishing Attacks Using Similarity Analysis	1/25/2021	Rundong Liu	FILED	17/157968	
P01-2081	System And Method For Detecting Repetitive Cybersecurity Attacks Constituting An Email Campaign	7/26/2021	Jijo Xavier; Robert Venal	FILED	17/385,835	

INTERNATIONAL

IP Right: IP Right ID	Country Code	Title	Filing Date	All Inventors	Prosecution Status	ApplPat. #
P01-1017.03EP	EP	Electronic Message Analysis for Malware Detection	2/23/2012	Ashar Aziz; Henry Uyeno; Jayaraman Manni; Muhammad Amin; Stuart Gresley Staniford	FILED	12774315.1
P01-1017.04JP	JP	Electronic Message Analysis for Malware Detection	2/23/2012	Ashar Aziz; Henry Uyeno; Jayaraman Manni; Stuart Gresley Staniford; Muhammad Amin	ISSUED	6013455
P01-1018.04JP	JP	Systems and Methods for Detecting Malicious PDF Network Content	1/19/2012	Ashar Aziz; Osman Ismael	ISSUED	5878560
P01-1035.03EP	EP	Optimized Resource Allocation for Virtual Machines Within a Malware Content Detection System	11/10/2015	Osman Ismael	FILED	13884161.4
P01-1035.04JP	JP	Optimized Resource Allocation for Virtual Machines Within a Malware Content Detection System	6/28/2013	Osman Ismael	ISSUED	6419787

IP Right: IP Right ID	Country Code	Title	Filing Date	All Inventors	Prosecution Status	Appl/Pat. #
P01-1039.05JP	JP	System, Apparatus and Method for Automatically Verifying Exploits Within Suspect Objects and Highlighting the Display Information Associated with the Verified Exploits	12/23/2014	Ashar Aziz; Zheng Bu; Muhammad Amin; Osman Ismael	ISSUED	6441957
P01-1086.03	EP	System and Method for Detecting Time-Bomb Malware	6/23/2014	Darien Kindlund; Sushant Paithane; Sai Vashisht; Michael Vincent	ISSUED	3014513
P01-1086.04	DE	System and Method for Detecting Time-Bomb Malware	6/23/2014	Darien Kindlund; Sushant Paithane; Sai Vashisht; Michael Vincent	ISSUED	3014513
P01-1086.05	FR	System and Method for Detecting Time-Bomb Malware	6/23/2014	Darien Kindlund; Sushant Paithane; Sai Vashisht; Michael Vincent	ISSUED	3014513
P01-1086.06	GB	System and Method for Detecting Time-Bomb Malware	6/23/2014	Darien Kindlund; Sushant Paithane; Sai Vashisht; Michael Vincent	ISSUED	3014513
P01-1086.07	IE	System and Method for Detecting Time-Bomb Malware	6/23/2014	Darien Kindlund; Sushant Paithane; Sai Vashisht; Michael Vincent	ISSUED	3014513
P01-1086.08	NL	System and Method for Detecting Time-Bomb Malware	6/23/2014	Darien Kindlund; Sushant Paithane; Sai Vashisht; Michael Vincent	ISSUED	3014513
P01-1086.09	IT	System and Method for Detecting Time-Bomb Malware	6/23/2014	Darien Kindlund; Sushant Paithane; Sai Vashisht; Michael Vincent	ISSUED	3014513
P01-1502.03	EP	Dynamic Adaptive Defense for Cyber-security Threats	10/2/2014	Fred Brott; Paul Smith	FILED	14850557.1
P01-1595.04	EP	Methods and Apparatus for Graphical User Interface Environment for Creating Threat Response Courses of Action for Computer Networks	6/22/2016	BAILEY Christopher Nelson; CONSTANT Bernd; VELA Juan Manuel	ISSUED	3311301
P01-1595.05	DE	Methods and Apparatus for Graphical User Interface Environment for Creating Threat Response Courses of Action for Computer Networks	6/22/2016	BAILEY Christopher Nelson; CONSTANT Bernd; VELA Juan Manuel	ISSUED	3311301
P01-1595.06	FR	Methods and Apparatus for Graphical User Interface Environment for Creating Threat Response Courses of Action for Computer Networks	6/22/2016	BAILEY Christopher Nelson; CONSTANT Bernd; VELA Juan Manuel	ISSUED	3311301
P01-1595.07	GB	Methods and Apparatus for Graphical User Interface Environment for Creating Threat Response Courses of Action for Computer Networks	6/22/2016	BAILEY Christopher Nelson; CONSTANT Bernd; VELA Juan Manuel	ISSUED	3311301
P01-1605.03	EP	Cyber-Security System and Method for Weak Indicator Detection and Correlation to Generate Strong Indicators	6/29/2018	Sundar Jeyaraman; Ramu Ramaswamy	FILED	18750547.4
P01-1882	EP	Electronic Message Analysis for Malware Detection	12/11/2017	Ashar Aziz; Henry Uyeno; Jayaraman Manni; Muhammad Amin; Stuart Gresley Staniford	FILED	17206478.4