

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
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EPAS ID: PAT6066013

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
Name		Execution Date
INTERNATIONAL BUSINESS MACHINES CORPORATION		06/11/2019
RECEIVING PARTY DATA		
Name:	PURE STORAGE, INC.	
Street Address:	650 CASTRO STREET	
Internal Address:	SUITE 400	
City:	MOUNTAIN VIEW	
State/Country:	CALIFORNIA	
Postal Code:	94041	
PROPERTY NUMBERS Total: 1		
Property Type	Number	
Application Number:	16850193	
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NAME OF SUBMITTER:	BRUCE E. STUCKMAN	
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DATE SIGNED:	04/17/2020	
Total Attachments: 39		
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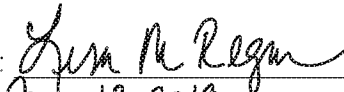
Form of Recordable Patent Assignment and Reservation

For good and valuable consideration, the receipt of which is hereby acknowledged, and subject to the reservations stated in the Patent Assignment Agreement Reference No. L190238 between the parties with an effective time and date of 11:59pm United States Eastern Time on June 11, 2019 ("Effective Time and Date") ("Patent Assignment Agreement"), International Business Machines Corporation, a New York corporation having a place of business at Armonk, New York (hereinafter "ASSIGNOR"), hereby grants and assigns to Pure Storage, Inc., a Delaware corporation having a place of business at Mountain View, California (hereinafter "ASSIGNEE"), all of IBM's right, title and interest in and to the patents and patent applications identified in Exhibits A-I, A-II, C-I and C-II, attached hereto, (hereinafter, collectively, "ASSIGNED PATENTS"), to have and to hold the same, unto ASSIGNEE for its own use and enjoyment and for the use and enjoyment of its successors and assigns, including all damages for infringement of any of the Assigned Patents and the sole right to sue therefore under such Assigned Patents, for the full term or terms of all such ASSIGNED PATENTS, subject to all rights granted under the ASSIGNED PATENTS to third parties prior to said Effective Time & Date.

ASSIGNOR hereby reserves and retains, for the benefit of itself and its subsidiaries and its and their successors and assigns, the rights and licenses set forth in the Patent Assignment Agreement.

IN WITNESS WHEREOF, ASSIGNOR has caused this Patent Assignment and Reservation to be duly signed on its behalf.

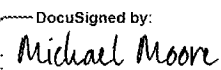
ASSIGNOR: INTERNATIONAL BUSINESS MACHINES CORPORATION

Signature: 
Date: June 13, 2019

Name: Lisa M. Regan
Title: Director, Research and Intellectual Property Finance

ASSIGNEE hereby accepts and acknowledges the assignment of ASSIGNED PATENTS as stated above.

ASSIGNEE: PURE STORAGE, INC.

DocuSigned by:
Signature: 
Date: 6/19/2019

Name: Michael Moore
Title: VP & AGC

EXHIBIT A-I
LISTED PATENTS (United States)

IBM Docket Number	Country	Patent Number	Application Number	Filing Date	Issue Date
END920165001US2	US	10078472	14/984024	12/30/2015	9/18/2018
END920165002US2	US	10079887	15/006735	1/26/2016	9/18/2018
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IBM Docket Number	Country	Patent Number	Application Number	Filing Date	Issue Date
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END920165709US4	US	9258177	13/919673	6/17/2013	2/9/2016
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END920165710US2	US	9110833	13/889557	5/8/2013	8/18/2015
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END920165710US4	US	10102068	15/224839	8/1/2016	10/16/2018
END920165710US5	US	8935761	13/889942	5/8/2013	1/13/2015
END920165711US2	US	9292212	13/890438	5/9/2013	3/22/2016
END920165711US3	US	9547548	15/012555	2/1/2016	1/17/2017
END920165711US4	US	9141297	13/890510	5/9/2013	9/22/2015
END920165711US5	US	10108484	15/346486	11/8/2016	10/23/2018
END920165711US6	US	10157011	15/350904	11/14/2016	12/18/2018
END920165711US7	US	10114697	15/357814	11/21/2016	10/30/2018
END920165711US8	US	10120574	15/357622	11/21/2016	11/6/2018
END920165712US2	US	9619487	13/921095	6/18/2013	4/11/2017
END920165713US2	US	9632872	13/866457	4/19/2013	4/25/2017
END920165713US3	US	9164841	13/866631	4/19/2013	10/20/2015
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END920165714US2	US	9613052	13/868988	4/23/2013	4/4/2017
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END920165714US4	US	9838382	15/400769	1/6/2017	12/5/2017
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END920165715US3	US	10042703	15/193335	6/27/2016	8/7/2018
END920165719US2	US	9195684	13/753404	1/29/2013	11/24/2015
END920165719US3	US	9588994	13/753418	1/29/2013	3/7/2017
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END920165720US3	US	10157051	15/217052	7/22/2016	12/18/2018
END920165720US5	US	10013444	13/775555	2/25/2013	7/3/2018
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END920165720US7	US	8930375	13/775734	2/25/2013	1/6/2015
END920165720US8	US	8935256	13/775769	2/25/2013	1/13/2015
END920165721US2	US	10140177	13/706991	12/6/2012	11/27/2018
END920165721US3	US	9203901	13/707118	12/6/2012	12/1/2015
END920165721US4	US	9354972	14/953579	11/30/2015	5/31/2016
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END920165722US3	US	9146810	14/615966	2/6/2015	9/29/2015
END920165722US4	US	9507786	13/718961	12/18/2012	11/29/2016
END920165722US5	US	9465861	13/943352	7/16/2013	10/11/2016

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END920165722US7	US	9715504	15/213343	7/18/2016	7/25/2017
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END920165722US9	US	9767109	15/215614	7/21/2016	9/19/2017
END920165723US10	US	9430286	13/865659	4/18/2013	8/30/2016
END920165723US11	US	9141468	13/865679	4/18/2013	9/22/2015
END920165723US12	US	10120755	14/843092	9/2/2015	11/6/2018
END920165723US13	US	8898542	13/707502	12/6/2012	11/25/2014
END920165723US14	US	9304858	13/707525	12/6/2012	4/5/2016
END920165723US15	US	9015556	13/707542	12/6/2012	4/21/2015
END920165723US16	US	9292385	14/635178	3/2/2015	3/22/2016
END920165723US17	US	9740730	15/249800	8/29/2016	8/22/2017
END920165723US19	US	10104168	15/281430	9/30/2016	10/16/2018
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END920165723US20	US	10303521	15/341722	11/2/2016	5/28/2019
END920165723US22	US	9998540	15/403671	1/11/2017	6/12/2018
END920165723US25	US	10146621	15/405130	1/12/2017	12/4/2018
END920165723US26	US	9817701	15/405203	1/12/2017	11/14/2017
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END920165724US3	US	9495240	14/499570	9/29/2014	11/15/2016
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END920165726US3	US	9304843	13/611622	9/12/2012	4/5/2016
END920165726US4	US	8683286	13/611803	9/12/2012	3/25/2014
END920165726US5	US	9483337	14/223406	3/24/2014	11/1/2016
END920165726US6	US	8607122	13/611866	9/12/2012	12/10/2013
END920165726US7	US	9208009	14/100368	12/9/2013	12/8/2015
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END920165728US3	US	9104541	14/325604	7/8/2014	8/11/2015
END920165728US4	US	9785491	13/588286	8/17/2012	10/10/2017
END920165728US5	US	8782492	13/588350	8/17/2012	7/15/2014
END920165728US6	US	9262247	14/331596	7/15/2014	2/16/2016
END920165729US2	US	8677214	13/611962	9/12/2012	3/18/2014
END920165729US3	US	10216576	14/217662	3/18/2014	2/26/2019
END920165729US4	US	8782494	13/612043	9/12/2012	7/15/2014
END920165729US5	US	8856617	13/612116	9/12/2012	10/7/2014
END920165729US6	US	9128870	14/480139	9/8/2014	9/8/2015
END920165729US7	US	9471426	14/819113	8/5/2015	10/18/2016
*END920165730US2	US	8930649	13/565562	8/2/2012	1/6/2015
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END920165730US5	US	9715425	14/954836	11/30/2015	7/25/2017
END920165730US6	US	10235237	15/629134	6/21/2017	3/19/2019
END920165731US2	US	9092385	13/587224	8/16/2012	7/28/2015
END920165731US3	US	9229823	13/587277	8/16/2012	1/5/2016
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END920165731US5	US	9971802	15/215274	7/20/2016	5/15/2018
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END920165731US7	US	8782491	13/587802	8/16/2012	7/15/2014
END920165731US8	US	9087016	14/330194	7/14/2014	7/21/2015
END920165732US2	US	9852017	13/547769	7/12/2012	12/26/2017
END920165732US3	US	8914667	13/547887	7/12/2012	12/16/2014
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END920165734US4	US	8924770	13/527929	6/20/2012	12/30/2014
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END920165735US10	US	10042709	15/414338	1/24/2017	8/7/2018
END920165735US2	US	8762479	13/464166	5/4/2012	6/24/2014
END920165735US3	US	9400714	13/647528	10/9/2012	7/26/2016
END920165735US4	US	9094428	14/312823	6/24/2014	7/28/2015
END920165735US5	US	9934091	15/190925	6/23/2016	4/3/2018
END920165735US6	US	9560133	13/464272	5/4/2012	1/31/2017
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END920165736US10	US	10255135	15/824340	11/28/2017	4/9/2019
END920165736US2	US	9842222	13/463991	5/4/2012	12/12/2017
END920165736US4	US	8656253	13/464048	5/4/2012	2/18/2014
*END920165736US5	US	8965939	14/182482	2/18/2014	2/24/2015
END920165736US6	US	8782439	13/464082	5/4/2012	7/15/2014
END920165736US7	US	9110593	14/331676	7/15/2014	8/18/2015
END920165736US8	US	10127402	15/341456	11/2/2016	11/13/2018
END920165736US9	US	9940195	15/718200	9/28/2017	4/10/2018
END920165737US3	US	9292682	13/450034	4/18/2012	3/22/2016
END920165737US4	US	8707393	13/450055	4/18/2012	4/22/2014
END920165738US2	US	9141458	13/450186	4/18/2012	9/22/2015
END920165738US3	US	9830222	14/844145	9/3/2015	11/28/2017
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*END920165738US6	US	8954787	13/450212	4/18/2012	2/10/2015
END920165739US2	US	9219604	13/449950	4/18/2012	12/22/2015
END920165740US2	US	8627091	13/413232	3/6/2012	1/7/2014
END920165740US3	US	9894151	14/147982	1/6/2014	2/13/2018
END920165740US4	US	8874990	13/413261	3/6/2012	10/28/2014
END920165740US5	US	9137303	14/524037	10/27/2014	9/15/2015
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*END920165740US7	US	8949688	13/413320	3/6/2012	2/3/2015
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END920165740US9	US	10298684	15/435692	2/17/2017	5/21/2019
END920165741US2	US	8843803	13/413436	3/6/2012	9/23/2014
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END920165741US5	US	9135114	14/481245	9/9/2014	9/15/2015
END920165741US6	US	9501358	14/842129	9/1/2015	11/22/2016
END920165741US7	US	8880978	13/413469	3/6/2012	11/4/2014
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END920165741US9	US	9471427	14/929925	11/2/2015	10/18/2016
END920165742US06	US	10169129	16/047637	7/27/2018	1/1/2019
END920165742US2	US	9183073	13/372677	2/14/2012	11/10/2015
END920165742US4	US	9658911	13/372715	2/14/2012	5/23/2017
END920165743US2	US	8868695	13/372611	2/14/2012	10/21/2014
END920165743US3	US	9727418	14/482509	9/10/2014	8/8/2017
END920165743US4	US	10102063	13/372628	2/14/2012	10/16/2018

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END920165743US5	US	8910022	13/372650	2/14/2012	12/9/2014
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END920165744US3	US	8688949	13/343405	1/4/2012	4/1/2014
END920165744US4	US	8914609	14/230446	3/31/2014	12/16/2014
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END920165745US2	US	9081714	13/347140	1/10/2012	7/14/2015
END920165745US3	US	9081715	13/347204	1/10/2012	7/14/2015
END920165745US4	US	8726127	13/347266	1/10/2012	5/13/2014
END920165745US5	US	8966341	14/276006	5/13/2014	2/24/2015
END920165746US2	US	8897443	13/309353	12/1/2011	11/25/2014
END920165746US3	US	8683231	13/309432	12/1/2011	3/25/2014
END920165746US4	US	9319463	13/309469	12/1/2011	4/19/2016
END920165746US5	US	10169146	15/131488	4/18/2016	1/1/2019
END920165747US2	US	8832493	13/308724	2/1/2011	9/9/2014
END920165747US3	US	9037904	14/479905	9/8/2014	5/19/2015
END920165747US4	US	9170882	13/308777	12/1/2011	10/27/2015
END920165747US5	US	9606869	14/875079	10/5/2015	3/28/2017
END920165747US6	US	8892845	13/308889	12/1/2011	11/18/2014
END920165747US8	US	9927977	15/426698	2/7/2017	3/27/2018
END920165748US2	US	8914669	13/291009	11/7/2011	12/16/2014
END920165748US3	US	9483398	13/291030	11/7/2011	11/1/2016
END920165748US4	US	9336139	13/291042	11/7/2011	5/10/2016
END920165748US5	US	9454431	14/035433	9/24/2013	9/27/2016
END920165749US4	US	10084770	13/289200	11/4/2011	9/25/2018
END920165749US5	US	9590838	14/029347	9/17/2013	3/7/2017
END920165750US4	US	9274977	13/270654	10/11/2011	3/1/2016
END920165750US5	US	9098441	13/937400	7/9/2013	8/4/2015
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END920165750US8	US	10146645	15/238031	8/16/2016	12/4/2018
END920165750US9	US	10289318	15/238165	8/16/2016	5/14/2019
END920165751US2	US	8707105	13/252410	10/4/2011	4/22/2014
END920165751US3	US	9122596	14/257398	4/21/2014	9/1/2015
END920165752US10	US	10298957	15/817104	11/17/2017	5/21/2019
END920165752US2	US	9112535	13/251566	10/3/2011	8/18/2015
END920165752US3	US	8612821	13/251587	10/3/2011	12/17/2013
END920165752US4	US	8839068	14/107204	12/16/2013	9/16/2014
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END920165753US2	US	9116831	13/231332	9/13/2011	8/25/2015
END920165753US3	US	8656138	13/231375	9/13/2011	2/18/2014
END920165753US4	US	9141307	14/182755	2/18/2014	9/22/2015
END920165753US5	US	9424130	14/843049	9/2/2015	8/23/2016
END920165754US2	US	8621271	13/204039	8/5/2011	12/31/2013
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END920165754US6	US	10157002	13/204061	8/5/2011	12/18/2018
END920165756US2	US	8627114	13/180675	7/12/2011	1/7/2014
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END920165758US10	US	9231768	13/154740	6/7/2011	1/5/2016
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END920165761US12	US	10193689	13/198078	8/4/2011	1/29/2019
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END920165761US2	US	9026758	13/097305	4/29/2011	5/5/2015

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END920165761US3	US	9009575	13/920766	6/18/2013	4/14/2015
END920165761US4	US	9563507	14/679578	4/6/2015	2/7/2017
END920165761US5	US	9632722	14/458969	8/13/2014	4/25/2017
END920165761US6	US	8874868	13/097338	4/29/2011	10/28/2014
END920165761US7	US	8448044	13/097357	4/29/2011	5/21/2013
END920165761US8	US	8627177	13/897567	5/20/2013	1/7/2014
END920165761US9	US	8861727	13/097396	4/29/2011	10/14/2014
END920165762US10	US	8761167	13/080312	4/5/2011	6/24/2014
END920165762US11	US	9235549	14/312163	6/23/2014	1/12/2016
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END920165762US15	US	9092386	13/920708	6/18/2013	7/28/2015
END920165762US16	US	9495117	14/454942	8/8/2014	11/15/2016
END920165762US17	US	9077734	13/180673	7/12/2011	7/7/2015
END920165762US18	US	8649399	13/080446	4/5/2011	2/11/2014
END920165762US19	US	9524267	14/176807	2/10/2014	12/20/2016
END920165762US2	US	8625635	13/073948	3/28/2011	1/7/2014
END920165762US20	US	8654789	13/080490	4/5/2011	2/18/2014
END920165762US21	US	9244879	14/182528	2/18/2014	1/26/2016
END920165762US22	US	9563598	14/148286	1/6/2014	2/7/2017
END920165762US23	US	10146620	15/345309	11/7/2016	12/4/2018
END920165762US24	US	9807171	15/346375	11/8/2016	10/31/2017
END920165762US25	US	9749419	15/348099	11/10/2016	8/29/2017
END920165762US3	US	8681790	13/080177	4/5/2011	3/25/2014
END920165762US4	US	9582459	14/223138	3/24/2014	2/28/2017
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END920165762US6	US	8681787	13/080234	4/5/2011	3/25/2014
END920165762US7	US	9256571	14/223020	3/24/2014	2/9/2016
END920165762US8	US	8625637	13/080286	4/5/2011	1/7/2014
END920165762US9	US	9514090	14/148380	1/6/2014	12/6/2016
END920165763US10	US	10154034	14/454013	8/7/2014	12/11/2018
END920165763US2	US	9047218	13/021510	2/4/2011	6/2/2015
END920165763US3	US	9606858	13/887662	5/6/2013	3/28/2017
END920165763US4	US	8769379	13/887560	5/6/2013	7/1/2014
END920165763US5	US	9043689	14/319372	6/30/2014	5/26/2015
END920165763US6	US	9342406	14/461824	8/18/2014	5/17/2016
END920165763US7	US	9311186	14/726699	6/1/2015	4/12/2016
END920165763US8	US	8566354	13/021537	2/4/2011	10/22/2013
END920165763US9	US	9063881	13/021552	2/4/2011	6/23/2015
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END920165764US12	US	8495466	12/983214	12/31/2010	7/23/2013
END920165764US13	US	8627178	13/946136	7/19/2013	1/7/2014
END920165764US14	US	9110819	14/148652	1/6/2014	8/18/2015
END920165764US15	US	9229824	14/453176	8/6/2014	1/5/2016
END920165764US16	US	9170884	14/453241	8/6/2014	10/27/2015
END920165764US17	US	8527705	12/983221	12/31/2010	9/3/2013
END920165764US18	US	10268374	15/276903	9/27/2016	4/23/2019
END920165764US2	US	9311184	12/983226	12/31/2010	4/12/2016
END920165764US3	US	9116832	14/458686	8/13/2014	8/25/2015
END920165764US4	US	9158624	14/458721	8/13/2014	10/13/2015
END920165764US5	US	10049008	15/095637	4/11/2016	8/14/2018
END920165764US6	US	8725940	12/983232	12/31/2010	5/13/2014
END920165764US7	US	9122628	14/275814	5/12/2014	9/1/2015
END920165764US8	US	8850113	12/983235	12/31/2010	9/30/2014
END920165764US9	US	9135115	14/454852	8/8/2014	9/15/2015
END920165765US2	US	8683119	13/021589	2/4/2011	3/25/2014
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END920165765US7	US	8578205	13/021664	2/4/2011	11/5/2013
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END920165766US5	US	8516299	13/593997	8/24/2012	8/20/2013
END920165766US6	US	8370600	12/779675	5/13/2010	2/5/2013
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END920165768US14	US	9774684	14/876154	10/6/2015	9/26/2017
END920165768US15	US	9880902	15/460958	3/16/2017	1/30/2018
END920165768US16	US	10015255	15/673978	8/10/2017	7/3/2018
END920165768US17	US	10044807	15/839457	12/12/2017	8/7/2018
END920165768US18	US	10051057	15/839814	12/12/2017	8/14/2018

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END920165768US23	US	10257276	16/048011	7/27/2018	4/9/2019
END920165768US25	US	10270858	16/024669	6/29/2018	4/23/2019
END920165768US26	US	10305989	16/170817	10/25/2018	5/28/2019
END920165768US27	US	10305990	16/205780	11/30/2018	5/28/2019
END920165768US3	US	8826067	14/062478	10/24/2013	9/2/2014
END920165768US4	US	8595435	12/797025	6/9/2010	11/26/2013
END920165768US5	US	8549351	12/954137	11/24/2010	10/1/2013
END920165768US6	US	8880940	14/042844	10/1/2013	11/4/2014
END920165768US7	US	8819179	12/954232	11/24/2010	8/26/2014
END920165768US8	US	9697171	14/335915	7/20/2014	7/4/2017
END920165768US9	US	10027478	15/208790	7/13/2016	7/17/2018
END920165769US2	US	8885821	12/954875	11/28/2010	11/11/2014
END920165769US3	US	8959366	12/954880	11/28/2010	2/17/2015
END920165769US4	US	10282564	14/452182	8/5/2014	5/7/2019
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END920165770US07	US	9900387	15/681026	8/18/2017	2/20/2018
END920165770US2	US	8954667	12/943826	11/10/2010	2/10/2015
END920165770US3	US	9201732	14/446703	7/30/2014	12/1/2015
END920165770US4	US	9774680	14/447909	7/31/2014	9/26/2017
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END920165771US2	US	8352501	12/942990	11/9/2010	1/8/2013
END920165771US3	US	8918674	12/942992	11/9/2010	12/23/2014
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END920165771US5	US	9354980	14/444134	7/28/2014	5/31/2016
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END920165772US2	US	8522113	12/942692	11/9/2010	8/27/2013
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END920165773US4	US	9152489	12/903209	10/13/2010	10/6/2015
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END920165774US2	US	8990585	12/886368	9/20/2010	3/24/2015
END920165774US3	US	9369526	14/319159	6/30/2014	6/14/2016
END920165774US4	US	9344500	14/319282	6/30/2014	5/17/2016
END920165774US5	US	9571577	14/612422	2/3/2015	2/14/2017
END920165774US6	US	10158648	15/221344	7/27/2016	12/18/2018
END920165774US7	US	10237281	15/221731	7/28/2016	3/19/2019

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END920165775US3	US	9922063	13/888324	5/6/2013	3/20/2018
END920165775US4	US	10097518	13/919210	6/17/2013	10/9/2018
END920165775US5	US	9697244	14/307883	6/18/2014	7/4/2017
END920165776US2	US	8762343	12/902684	10/12/2010	6/24/2014
END920165776US3	US	9679153	14/312532	6/23/2014	6/13/2017
END920165776US4	US	9489533	14/312550	6/23/2014	11/8/2016
END920165777US10	US	9760286	15/451906	3/7/2017	9/12/2017
END920165777US11	US	9823845	15/612750	6/2/2017	11/21/2017
END920165777US2	US	8819452	12/885124	9/17/2010	8/26/2014
*END920165777US3	US	9021273	14/316336	6/26/2014	4/28/2015
END920165777US4	US	9208331	14/680298	4/7/2015	12/8/2015
END920165777US5	US	9043616	14/336189	7/21/2014	5/26/2015
END920165777US6	US	9747457	14/705752	5/6/2015	8/29/2017
END920165777US7	US	8458233	12/885244	9/17/2010	6/4/2013
END920165777US8	US	8762346	13/908516	6/3/2013	6/24/2014
END920165777US9	US	9672109	15/250013	8/29/2016	6/6/2017
END920165778US2	US	8621268	12/862871	8/25/2010	12/31/2013
END920165779US2	US	8688907	12/862878	8/25/2010	4/1/2014
END920165779US3	US	9268641	14/230253	3/31/2014	2/23/2016
END920165779US4	US	10015141	14/328311	7/10/2014	7/3/2018
END920165779US5	US	9996548	14/328904	7/11/2014	6/12/2018
END920165780US2	US	8527807	12/845590	7/28/2010	9/3/2013
END920165780US3	US	8726071	13/779452	2/27/2013	5/13/2014
END920165780US4	US	9431055	14/275560	5/12/2014	8/30/2016
END920165780US5	US	9626248	14/327582	7/10/2014	4/18/2017
END920165780US6	US	9836352	14/327585	7/10/2014	12/5/2017
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END920165780US8	US	9870795	15/085648	3/30/2016	1/16/2018
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END920165782US2	US	8918897	12/862887	8/25/2010	12/23/2014
END920165782US3	US	9152514	13/866224	4/19/2013	10/6/2015
END920165782US4	US	9270298	14/335912	7/20/2014	2/23/2016
END920165782US5	US	9501349	14/336195	7/21/2014	11/22/2016
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END920165783US10	US	9098376	14/291205	5/30/2014	8/4/2015
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END920165783US12	US	9965354	15/089943	4/4/2016	5/8/2018
END920165783US13	US	8630987	12/839220	7/19/2010	1/14/2014
END920165783US14	US	9378091	14/142206	12/27/2013	6/28/2016
END920165783US15	US	9858143	15/230108	8/5/2016	1/2/2018
END920165783US16	US	10275161	15/627529	10/10/2017	4/30/2019
END920165783US2	US	8819011	12/839209	7/19/2010	8/26/2014
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END920165783US4	US	8769035	12/839181	7/19/2010	7/1/2014
END920165783US5	US	9785351	14/318790	6/30/2014	10/10/2017
END920165783US6	US	8479078	12/839197	7/19/2010	7/2/2013
END920165783US7	US	8631303	13/932320	7/1/2013	1/14/2014
END920165783US8	US	8914707	14/132020	12/18/2013	12/16/2014
END920165783US9	US	9063658	14/288453	5/28/2014	6/23/2015
END920165784US2	US	8589637	12/817171	6/16/2010	11/19/2013
END920165784US3	US	9645967	14/083724	11/19/2013	5/9/2017
END920165784US4	US	8522022	12/817201	6/17/2010	8/27/2013
END920165785US2	US	8351600	12/814467	6/13/2010	1/8/2013
END920165785US3	US	9009491	13/736848	1/8/2013	4/14/2015
END920165785US4	US	9413529	14/292727	5/30/2014	8/9/2016
END920165785US5	US	9088407	14/292772	5/30/2014	7/21/2015
END920165785US6	US	9900150	12/814474	6/13/2010	2/20/2018
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END920165785US8	US	8468137	12/818137	6/17/2010	6/18/2013
END920165785US9	US	9819484	15/230145	8/5/2016	11/14/2017
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*END920165786US11	US	8966009	14/062974	10/25/2013	2/24/2015
END920165786US3	US	9195408	14/290549	5/29/2014	11/24/2015
END920165786US4	US	9311185	14/294131	6/2/2014	4/12/2016
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END920165786US8	US	8464133	12/850609	8/4/2010	6/11/2013
END920165786US9	US	9043489	12/850610	8/4/2010	5/26/2015
END920165787US2	US	10142115	12/837961	7/16/2010	11/27/2018
END920165787US3	US	9501355	14/302974	6/12/2014	11/22/2016
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*END920165787US5	US	9015431	12/838407	7/16/2010	4/21/2015
END920165788US2	US	8402344	12/797208	6/9/2010	3/19/2013
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END920165789US2	US	8281181	12/778647	5/12/2010	10/2/2012
END920165789US3	US	8381025	12/778663	5/12/2010	2/19/2013
END920165789US4	US	8448020	13/524346	6/15/2012	5/21/2013
END920165789US5	US	8478937	12/778680	5/12/2010	7/2/2013
END920165789US6	US	10209903	13/779469	2/27/2013	2/19/2019
END920165789US7	US	9448730	12/778701	5/12/2010	9/20/2016
END920165789US8	US	9823861	14/292585	5/30/2014	11/21/2017
END920165790US3	US	8862800	13/529052	6/21/2012	10/14/2014
END920165790US4	US	8918534	12/777864	5/11/2010	12/23/2014
END920165790US5	US	8554994	12/777887	5/11/2010	10/8/2013
END920165790US6	US	8473677	12/777904	5/11/2010	6/25/2013
END920165790US7	US	9274890	13/925270	6/24/2013	3/1/2016
END920165791US2	US	8924387	12/789459	5/28/2010	12/30/2014
END920165791US3	US	9313293	14/540305	11/13/2014	4/12/2016
END920165791US4	US	10031804	15/095402	4/11/2016	7/24/2018
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END920165791US6	US	8882599	13/711295	12/11/2012	11/11/2014
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END920165792US3	US	9443099	14/230169	3/31/2014	9/13/2016
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END920165792US5	US	9076138	12/817165	6/16/2010	7/7/2015
END920165792US6	US	9607168	14/292318	5/30/2014	3/28/2017
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END920165794US2	US	9411810	12/753569	4/2/2010	8/9/2016
END920165794US3	US	10268712	15/230113	8/5/2016	4/23/2019
END920165795US09	US	10303549	15/912305	3/5/2018	5/28/2019
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END920165795US7	US	8468609	12/759948	4/14/2010	6/18/2013
END920165795US8	US	8813204	13/917922	6/14/2013	8/19/2014
END920165797US2	US	9235350	12/749583	3/20/2010	1/12/2016
END920165797US3	US	9690513	12/749606	3/30/2010	6/27/2017
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END920165798US2	US	9167277	12/776098	5/7/2010	10/20/2015
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IBM Docket Number	Country	Patent Number	Application Number	Filing Date	Issue Date
END920165809US2	US	7636724	10/234636	9/3/2002	12/22/2009
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IBM Docket Number	Country	Patent Number	Application Number	Filing Date	Issue Date
END920165817US10	US	8244991	12/575577	10/8/2009	8/14/2012
END920165817US11	US	8468311	13/488650	6/5/2012	6/18/2013
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END920165900US10	US	10289505	15/203909	7/7/2016	5/14/2019
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IBM Docket Number	Country	Patent Number	Application Number	Filing Date	Issue Date
END920165902US6	US	9215476	13/919746	6/17/2013	12/15/2015
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END920165902US9	US	8522074	12/842932	7/23/2010	8/27/2013
END920165907US2	US	9424326	13/959702	8/5/2013	8/23/2016
END920165907US3	US	10013471	15/223707	7/29/2016	7/3/2018
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END920165907US6	US	10057351	15/400092	1/6/2017	8/21/2018

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EXHIBIT A-II
LISTED PATENTS (United States)

IBM Docket Number	Country	Patent Number	Application Number	Filing Date	Issue Date
END920165001US2	US	10078472	14/984024	12/30/2015	9/18/2018
END920165667US2	US	9606867	14/680459	4/7/2015	3/28/2017
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END920165674US04	US	10140182	15/841759	12/14/2017	11/27/2018
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END920165675US3	US	10275313	15/705782	9/15/2017	4/30/2019
END920165736US7	US	9110593	14/331676	7/15/2014	8/18/2015
END920165738US3	US	9830222	14/844145	9/3/2015	11/28/2017
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END920165741US5	US	9135114	14/481245	9/9/2014	9/15/2015
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END920165744US4	US	8914609	14/230446	3/31/2014	12/16/2014
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END920165747US3	US	9037904	14/479905	9/8/2014	5/19/2015
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END920165817US5	US	8140777	12/499489	7/8/2009	3/20/2012

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ASSIGNED US PATENT APPLICATIONS

IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
END920165001US03	US	15/818633	11/20/2017	2018-0077240
END920165001US04	US	15/838983	12/12/2017	20180103104
END920165001US05	US	15/832316	12/5/2017	2018-0095825
END920165001US06	US	15/832391	12/5/2017	2018-0095826
END920165001US07	US	15/822302	11/27/2017	2018-0075047
END920165001US08	US	15/839426	12/12/2017	20180101439
END920165001US09	US	15/841990	12/14/2017	20180107422
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END920165001US10	US	15/839192	12/12/2017	20180101437
END920165002US03	US	15/837705	12/11/2017	20180101325
END920165002US04	US	15/841863	12/14/2017	20180107427
END920165002US05	US	15/843804	12/15/2017	20180107424
END920165002US06	US	15/845137	12/18/2017	20180107837
END920165002US07	US	15/843390	12/15/2017	20180107544
END920165002US08	US	15/840151	12/13/2017	20180101308
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END920165005US13	US	16/193194	11/16/2018	20190087270
END920165005US14	US	16/237903	1/2/2019	20190155706
END920165005US15	US	16/259361	1/28/2019	20190155506
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END920165006US6	US	15/408035	1/17/2017	US20170123706A1
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END920165006US8	US	15/411468	1/20/2017	2017-0132272
END920165006US9	US	15/416120	1/26/2017	2017-0131922
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END920165007US09	US	15/445573	2/28/2017	20170168724

IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
*END920165007US1	US	62/168114	5/29/2015	
END920165007US10	US	15/445033	2/28/2017	20170168719
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END920165009US14	US	16/273552	2/12/2019	
END920165009US15	US	16/374297	4/3/2019	
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END920165009US6	US	15/143988	5/2/2016	US20170034273A1
END920165009US7	US	15/144080	5/2/2016	US20170032139A1
*END920165010US1	US	62/211975	8/31/2015	
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END920165011US9	US	15/262169	9/12/2016	US20170093978A1
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END920165012US4	US	15/334433	10/26/2016	US20170123911A1

IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
END920165012US5	US	15/334502	10/26/2016	US20170126804A1
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END920165656US06	US	15/830321	12/4/2017	2018-0091595
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IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
END920165656US09	US	15/837759	12/11/2017	20180101327
*END920165656US1	US	62/098449	12/31/2014	
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END920165660US07	US	15/850127	12/21/2017	20180113651
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END920165661US06	US	16/144909	9/27/2018	20190034275
END920165661US07	US	16/256193	1/24/2019	20190155691
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*END920165666US1	US	62/019074	6/30/2014	
END920165666US11	US	16/053395	8/2/2018	20180341550
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IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
END920165666US13	US	16/256649	1/24/2019	20190158596
END920165666US14	US	16/271370	2/8/2019	
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END920165671US06	US	16/197235	11/20/2018	20190087599
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END920165672US03	US	16/029898	7/9/2018	20180316569
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END920165675US04	US	16/150841	10/3/2018	20190034278
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END920165676US04	US	16/166437	10/22/2018	20190056996
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IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
END920165676US3	US	15/398163	1/4/2017	20170116079
END920165677US04	US	16/158645	10/12/2018	20190042370
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END920165678US04	US	16/145940	9/28/2018	20190050280
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END920165679US05	US	16/190742	11/14/2018	20190082014
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*END920165680US1	US	61/886452	10/3/2013	
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END920165681US8	US	15/809584	11/10/2017	2018-0069926
END920165681US9	US	15/820102	11/21/2017	2018-0097881
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END920165684US09	US	16/239219	1/3/2019	20190141130
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END920165684US10	US	16/174412	10/30/2018	20190065317
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END920165685US06	US	16/171480	10/26/2018	20190065312
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END920165686US05	US	16/151108	10/3/2018	20190034279
*END920165686US1	US	61/841603	7/1/2013	
*END920165687US1	US	61/828905	5/30/2013	

IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
END920165687US3	US	15/249905	8/29/2016	20160371143
END920165687US4	US	15/824496	11/28/2017	2018-0089020
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*END920165691US1	US	61/819025	5/3/2013	
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END920165691US4	US	15/803113	11/3/2017	2018-0052735
END920165693US03	US	16/049778	7/30/2018	20180365261
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END920165698US4	US	15/804424	11/6/2017	2018-0060173
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END920165699US08	US	15/967245	4/30/2018	20180247071

IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
END920165699US09	US	16/237793	1/2/2019	20190138394
*END920165699US1	US	61/748891	1/4/2013	
END920165699US10	US	16/244615	1/10/2019	20190146877
*END920165700US1	US	61/733698	12/5/2012	
END920165700US3	US	15/216494	7/21/2016	20160328297
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END920165701US05	US	15/670900	8/7/2017	20170357666
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END920165701US3	US	15/432751	2/14/2017	2017-0160941
END920165701US4	US	15/660135	7/26/2017	20170322734
*END920165702US1	US	61/720274	10/30/2012	
END920165703US05	US	15/901686	2/21/2018	20180183800
*END920165703US1	US	61/720204	10/30/2012	
*END920165704US1	US	61/711106	10/8/2012	
END920165704US10	US	15/804147	11/6/2017	2018-0074890
END920165704US11	US	15/804090	11/6/2017	2018-0074889
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*END920165706US1	US	61/696018	8/31/2012	
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END920165706US11	US	15/824291	11/28/2017	2018-0081759
END920165706US12	US	15/818641	11/20/2017	2018-0074899
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END920165709US07	US	16/239651	1/4/2019	20190140777
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END920165710US06	US	16/047942	7/27/2018	20180336097
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END920165711US09	US	16/165332	10/19/2018	2019-0050292
*END920165711US1	US	61/663796	6/25/2012	
*END920165712US1	US	61/661075	6/18/2012	
END920165713US07	US	15/439229	2/22/2017	2017-0161205
END920165713US09	US	15/958402	4/20/2018	20180239538
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IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
END920165713US10	US	16/039742	7/19/2018	20180321872
END920165713US11	US	16/188942	11/13/2018	20190079862
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*END920165719US1	US	61/605869	3/2/2012	
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*END920165720US1	US	61/605856	3/2/2012	
END920165720US10	US	15/995484	6/1/2018	20180275903
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END920165720US12	US	16/411424	5/14/2019	
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*END920165721US1	US	61/593126	1/31/2012	
*END920165722US1	US	61/593116	1/31/2012	
END920165722US11	US	15/882013	1/29/2018	20180152298
END920165722US6	US	13/943456	7/16/2013	20130304745
*END920165723US1	US	61/569387	12/12/2011	
END920165723US18	US	15/281317	9/30/2016	US20170019253A1
END920165723US21	US	15/346948	11/9/2016	US20170052858A1
END920165723US23	US	15/418164	1/27/2017	21070139843
END920165723US27	US	15/409386	1/18/2017	US20170123920A1
END920165723US29	US	15/444952	2/28/2017	20170168874
END920165723US30	US	15/445152	2/28/2017	20170171105
END920165723US31	US	15/795651	10/27/2017	20180046627
END920165723US32	US	15/822333	11/27/2017	2018-0074858
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END920165723US36	US	16/167443	10/22/2018	20190056997
END920165723US37	US	16/183644	11/7/2018	20190073267
END920165723US38	US	16/407894	5/9/2019	
END920165723US39	US	16/378724	4/9/2019	
END920165723US40	US	16/378703	4/9/2019	

IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
*END920165723US9	US	13/865641	4/18/2013	20130238900
END920165724US07	US	16/040786	7/20/2018	20180329834
*END920165724US1	US	61/564200	11/28/2011	
*END920165725US1	US	61/564185	11/28/2011	
END920165725US10	US	15/472458	3/29/2017	20170202174
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END920165725US2	US	13/683951	11/21/2012	20130138756
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END920165725US8	US	15/282782	9/30/2016	US20170024282A1
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END920165727US06	US	16/391389	4/23/2019	
*END920165727US1	US	61/554152	11/1/2011	
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*END920165728US1	US	61/542923	10/4/2011	
END920165728US8	US	15/728276	10/9/2017	20180034639
END920165729US08	US	16/240390	1/4/2019	20190138393
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END920165730US07	US	16/279172	2/19/2019	
*END920165730US1	US	61/531317	9/6/2011	
END920165731US09	US	15/952707	4/13/2018	20180234238A1
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END920165736US3	US	13/464015	5/4/2012	20120311557
END920165737US05	US	15/466322	3/22/2017	20170192684

IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
END920165737US06	US	15/466566	3/22/2017	20170192705
*END920165737US1	US	61/483856	5/9/2011	
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*END920165738US1	US	61/483852	5/9/2011	
*END920165739US1	US	61/483846	5/9/2011	
*END920165740US1	US	61/470524	4/1/2011	
END920165740US10	US	15/824651	11/28/2017	2018-0084035
END920165740US11	US	16/200103	11/26/2018	20190098078
*END920165741US1	US	61/470521	4/1/2011	
END920165741US10	US	15/350762	11/14/2016	US20170060457A1
END920165742US07	US	16/193328	11/16/2018	20190087262
*END920165742US1	US	61/448526	3/2/2011	
*END920165742US3	US	13/372689	2/14/2012	20120226667
*END920165742US5	US	13/372748	2/14/2012	20120226855
*END920165743US1	US	61/448518	3/2/2011	
END920165743US6	US	15/626807	6/19/2017	20170293528
*END920165744US1	US	61/438516	2/1/2011	
*END920165745US1	US	61/438490	2/1/2011	
END920165745US6	US	13/347334	1/10/2012	20120198066
*END920165746US1	US	61/427457	12/27/2010	
*END920165747US1	US	61/426237	12/22/2010	
END920165748US07	US	16/136362	9/20/2018	20190018619
*END920165748US1	US	61/417873	11/29/2010	
END920165748US6	US	15/285582	10/5/2016	US20170024155A1
END920165749US06	US	16/110580	8/23/2018	20180364933
END920165749US07	US	16/115235	8/28/2018	20180364940
*END920165749US1	US	61/411478	11/9/2010	
*END920165750US1	US	61/408980	11/1/2010	
END920165750US10	US	15/362460	11/28/2016	US20170075763A1
END920165750US11	US	15/433824	2/15/2017	2017-0163378
END920165750US13	US	15/819198	11/21/2017	2018-0095688
END920165750US14	US	16/247991	1/15/2019	
END920165750US15	US	16/271603	2/8/2019	
END920165750US16	US	16/366715	3/27/2019	
*END920165751US1	US	61/408971	11/1/2010	
END920165751US4	US	13/252418	10/4/2011	20120109885
*END920165752US1	US	61/390472	10/6/2010	
END920165752US11	US	16/378041	4/8/2019	
END920165752US9	US	15/718025	9/28/2017	20180018222

IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
*END920165753US1	US	61/390368	10/6/2010	
END920165754US07	US	16/174504	10/30/2018	20190073143
*END920165754US1	US	61/377428	8/26/2010	
END920165754US4	US	14/312259	6/23/2014	20140304486
END920165756US09	US	16/201486	11/27/2018	20190095101
*END920165756US1	US	61/369812	8/2/2010	
END920165756US10	US	16/136761	9/20/2018	20190034085
*END920165758US1	US	61/357430	6/22/2010	
END920165758US12	US	14/445334	7/29/2014	20140337661
END920165758US13	US	16/262577	1/30/2019	
END920165758US14	US	16/390530	4/22/2019	
END920165758US5	US	14/447890	7/31/2014	20170185614
END920165758US7	US	14/452791	8/6/2014	20140351579
*END920165759US1	US	61/357390	6/22/2010	
*END920165760US1	US	61/346203	5/19/2010	
END920165760US9	US	15/167482	5/27/2016	20160277502
*END920165761US1	US	61/346173	5/19/2010	
END920165761US14	US	15/362180	11/28/2016	US20170075762A1
END920165761US15	US	16/202986	11/28/2018	20190109711
END920165761US16	US	16/171161	10/25/2018	20190081781
*END920165762US1	US	61/328000	4/26/2010	
END920165762US14	US	13/920635	6/18/2013	20130282865
END920165762US26	US	16/138753	9/21/2018	20190034274
*END920165763US1	US	61/327921	4/26/2010	
END920165763US11	US	16/137681	9/21/2018	20190026044
*END920165764US1	US	61/314166	3/16/2010	
*END920165765US1	US	61/313885	3/15/2010	
END920165765US6	US	14/471474	8/28/2014	20140372607
*END920165766US1	US	61/313582	3/12/2010	
END920165766US12	US	16/409234	5/10/2019	
END920165766US3	US	14/291199	5/30/2014	20140281815
*END920165768US1	US	61/308737	2/26/2010	
END920165768US19	US	15/840397	12/13/2017	20180103107
END920165768US20	US	15/840508	12/13/2017	20180115604
END920165768US21	US	15/842560	12/14/2017	20180109616
END920165768US28	US	16/256177	1/24/2019	20190158595
END920165768US29	US	16/390426	4/22/2019	
END920165768US30	US	16/416363	5/20/2019	
END920165769US08	US	16/201878	11/27/2018	20190108368

IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
END920165769US09	US	16/197275	11/20/2018	20190108366
*END920165769US1	US	61/299245	1/28/2010	
END920165769US7	US	15/804453	11/7/2017	2018-0060612
*END920165770US1	US	61/299228	1/28/2010	
*END920165771US1	US	61/299197	1/28/2010	
*END920165772US1	US	61/299075	1/28/2010	
END920165772US3	US	12/942721	11/9/2010	20110184997
END920165772US4	US	14/319849	6/30/2014	20140137053
END920165773US07	US	16/050583	7/31/2018	20180335967
END920165773US08	US	16/048598	7/30/2018	20180337998
*END920165773US1	US	61/290775	12/29/2009	
*END920165774US1	US	61/290757	12/29/2009	
END920165774US10	US	16/128941	9/12/2018	20190014125
END920165774US11	US	16/244315	1/10/2019	20190149556
END920165774US12	US	16/386831	4/17/2019	
END920165774US8	US	15/222078	7/28/2016	US20160335202A1
*END920165775US1	US	61/290689	12/29/2009	
*END920165776US1	US	61/290662	12/29/2009	
*END920165777US1	US	61/264534	11/25/2009	
*END920165778US1	US	61/264516	11/25/2009	
END920165779US06	US	15/956984	4/19/2018	20180239673A1
END920165779US07	US	16/169571	10/24/2018	20190056998
*END920165779US1	US	61/264504	11/25/2009	
*END920165780US1	US	61/264316	11/25/2009	
END920165781US09	US	16/185573	11/9/2018	20190095290
*END920165781US1	US	61/264297	11/25/2009	
*END920165781US4	US	14/315748	6/26/2014	20140310491
END920165781US8	US	15/805308	11/7/2017	2018-0067820
*END920165782US1	US	61/264072	11/24/2009	
*END920165783US1	US	61/256436	10/30/2009	
*END920165784US1	US	61/256419	10/30/2009	
*END920165784US5	US	12/817208	6/17/2010	20110107078
*END920165785US1	US	61/256411	10/30/2009	
*END920165786US1	US	61/256314	10/30/2009	
END920165786US2	US	12/850606	8/4/2010	20110107182
END920165786US6	US	12/850607	8/4/2010	20110107027
END920165786US7	US	14/289738	5/29/2014	20140280682
END920165787US06	US	16/121290	9/4/2018	20180375671
*END920165787US1	US	61/256226	10/29/2009	

IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
*END920165788US1	US	61/248548	10/5/2009	
*END920165789US1	US	61/247190	9/30/2009	
END920165789US10	US	16/239244	1/3/2019	20190138231
END920165789US9	US	15/427408	2/8/2017	20170147219
*END920165790US1	US	61/246876	9/29/2009	
*END920165790US2	US	12/777850	5/11/2010	20110078343
*END920165791US1	US	61/246818	9/29/2009	
*END920165792US1	US	61/246809	9/29/2009	
*END920165793US1	US	61/237652	8/27/2009	
END920165794US04	US	16/359318	3/20/2019	
*END920165794US1	US	61/237650	8/27/2009	
*END920165795US1	US	61/237645	8/27/2009	20140337932
*END920165795US5	US	14/292070	5/30/2014	20140337932
*END920165797US1	US	61/237624	8/27/2009	
*END920165798US1	US	61/230937	8/3/2009	
*END920165799US1	US	61/230304	7/31/2009	
*END920165802US1	US	61/230019	7/30/2009	
*END920165805US1	US	61/141494	12/30/2008	
*END920165807US1	US	61/141428	12/30/2008	
END920165807US16	US	15/612243	6/2/2017	20170270003
*END920165809US1	US	60/316601	8/31/2001	
*END920165812US12	US	14/633315	2/27/2015	20150169897
END920165812US4	US	12/551145	8/31/2009	20100269008
*END920165812US5	US	61/237634	8/27/2009	
*END920165815US3	US	61/141312	12/30/2008	
*END920165815US6	US	61/141478	12/30/2008	
*END920165815US8	US	61/141534	12/30/2008	
*END920165900US1	US	61/290632	12/29/2009	
END920165900US22	US	15/974345	5/8/2018	20180260122
END920165900US23	US	16/130431	9/13/2018	20190014192
END920165900US24	US	16/245988	1/11/2019	20190146676
*END920165901US1	US	61/505013	7/6/2011	
END920165901US6	US	13/527811	6/20/2012	20130013798
*END920165902US1	US	61/256193	10/29/2009	
*END920165902US5	US	12/842842	7/23/2010	20110107380
END920165907US09	US	15/962923	4/25/2018	20180239807A1
END920165907US10	US	15/982279	5/17/2018	20180268043
END920165907US11	US	16/297978	3/11/2019	
END920165907US5	US	15/338473	10/31/2016	US20170046417A1

IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
END920165907US7	US	15/822873	11/27/2017	2018-0075123
END920165907US8	US	15/816813	11/17/2017	2018-0075121

* Abandoned or Expired

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ASSIGNED US PATENT APPLICATIONS

IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
END920165667US05	US	16/108905	8/22/2018	20180365105
END920165668US05	US	16/032288	7/11/2018	20180341417
END920165668US06	US	16/151513	10/4/2018	20190042768
END920165668US2	US	14/675070	3/31/2015	20150356305
END920165669US06	US	16/412167	5/14/2019	
END920165674US07	US	16/121068	9/4/2018	20180373595
END920165675US04	US	16/150841	10/3/2018	20190034278
END920165675US05	US	16/171585	10/26/2018	20190065315
END920165690US05	US	16/136681	9/20/2018	20190018741
END920165690US06	US	16/254789	1/23/2019	20190155701
END920165709US07	US	16/239651	1/4/2019	20190140777
END920165714US08	US	16/152636	10/5/2018	20190036912
END920165720US12	US	16/411424	5/14/2019	
END920165736US11	US	16/410419	5/13/2019	
END920165766US12	US	16/409234	5/10/2019	
END920165768US29	US	16/390426	4/22/2019	
END920165768US30	US	16/416363	5/20/2019	

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