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OMB No. 0651-0027 (exp. 03/31/2009)U.S. DEPARTMENT OF COMMERCE  
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To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

## 1. Name of conveying party(ies)

RIVERBED TECHNOLOGY, INC.

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

## 3. Nature of conveyance/Execution Date(s):

Execution Date(s) December 20, 2013

- ☐ Assignment ☐ Merger  
☐ Security Agreement ☐ Change of Name  
☐ Joint Research Agreement  
☐ Government Interest Assignment  
☐ Executive Order 9424, Confirmatory License  
☒ Other Patent Security Agreement

## 2. Name and address of receiving party(ies)

Name: JPMORGAN CHASE BANK, N.A., as administrative agent

Internal Address: \_\_\_\_\_

Street Address: \_\_\_\_\_

383 Madison Avenue, Floor 24City: New YorkState: NYCountry: USA Zip: 10179Additional name(s) & address(es) attached? ☐ Yes ☒ No

## 4. Application or patent number(s):

☐ This document is being filed together with a new application.

A. Patent Application No.(s)

B. Patent No.(s)

Please see attached schedules.

Please see attached schedules.

Additional numbers attached? ☒ Yes ☐ No

## 5. Name and address to whom correspondence concerning document should be mailed:

Name: Thomas FaheyInternal Address: National Corporate ResearchSuite 1130Street Address: 1025 Vermont Avenue N.W.City: WashingtonState: D.C. Zip: 20005Phone Number: (202) 370-4761Fax Number: (800) 494-7512Email Address: tfahey@nationalcorp.com6. Total number of applications and patents involved: 304

## 7. Total fee (37 CFR 1.21(h) &amp; 3.41) \$ \_\_\_\_\_

- ☐ Authorized to be charged to deposit account  
☒ Enclosed fee paid  
☐ None required (government interest not affecting title)

## 8. Payment Information

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## 9. Signature:

Signature

December 20, 2013

Date

Katherine Stewart

Name of Person Signing

Total number of pages including cover sheet, attachments, and documents:

24

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to:  
 Mail Stop Assignment Recordation Services, Director of the USPTO, P.O. Box 1450, Alexandria, V.A. 22313-1450

12-27-2013

# PATENTS

## U.S. PATENT REGISTRATIONS AND APPLICATIONS

Schedule I

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	09/013,980	5,945,933	1/27/1998	8/31/1999	Adaptive Packet Compression Apparatus and Method
Riverbed Technology, Inc.	09/103,621	6,266,337	6/23/1998	7/24/2001	Packet Retransmission Eliminator
Riverbed Technology, Inc.	09/108,503	6,278,963	7/1/1998	8/21/2001	System Architecture for Distribution of Discrete-Event Simulations
Riverbed Technology, Inc.	09/151,748	6,240,416	9/11/1998	5/29/2001	Distributed Metadata System and Method
Riverbed Technology, Inc.	09/218,953	6,121,903	12/22/1998	9/19/2000	On-The-Fly Data Re-Compression
Riverbed Technology, Inc.	09/345,249	6,600,752	6/30/1999	7/29/2003	Method for Reducing Excess Queue Time in Communication Nodes
Riverbed Technology, Inc.	09/539,434	6,674,717	3/30/2000	1/6/2004	Method for Reducing Packet Loss and Increasing Internet Flow by Feedback Control
Riverbed Technology, Inc.	09/624,092	6,820,042	7/24/2000	11/16/2004	Mixed Mode Network Simulator
Riverbed Technology, Inc.	09/682,324	6,823,382	8/20/2001	11/23/2004	Monitoring and Control Engine for Multi-Tiered Service-Level Management of Distributed Web-Application Servers
Riverbed Technology, Inc.	09/846,174	6,990,071	3/30/2000	1/24/2006	Method for Reducing Fetch Time in a Congested Communications Network
Riverbed Technology, Inc.	09/846,449	6,947,381	4/30/2001	9/20/2005	Method for Reducing Packet Loss by Phase Transition Identification in Communication Networks
Riverbed Technology, Inc.	09/846,450	7,072,297	4/30/2001	7/4/2006	Method for Dynamical Identification of Network Congestion Characteristics
Riverbed Technology, Inc.	09/846,451	7,551,560	4/30/2001	6/23/2009	Method of Reducing Packet Loss by Resonance Identification in Communication Networks

PATENT

REEL: 032421 FRAME: 0163

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	09/846,452	7,333,431	3/30/2000	2/19/2008	Method for Accelerating TCP Flows in Communication Networks with Dynamic Control
Riverbed Technology, Inc.	09/854,321	7,248,564	4/30/2001	7/24/2007	Method for Determining Network Congestion and Link Capacities
Riverbed Technology, Inc.	09/879,838	6,968,540	6/21/2001	11/22/2005	Software Instrumentation Method and Apparatus
Riverbed Technology, Inc.	09/931,223	7,702,806	8/16/2001	4/20/2010	Statistics Collection for Network Traffic
Riverbed Technology, Inc.	09/931,291	7,278,159	8/16/2001	10/22/2007	Coordinated Thwarting of Denial of Service Attacks
Riverbed Technology, Inc.	09/931,344	7,836,498	8/16/2001	11/16/2010	Device to Protect Victim Sites During Denial of Service Attacks
Riverbed Technology, Inc.	09/931,487	7,743,134	8/16/2001	6/22/2010	Thwarting Source Address Spoofing-Based Denial of Service Attacks
Riverbed Technology, Inc.	09/931,558	7,124,440	8/16/2001	10/17/2006	Monitoring Network Traffic Denial of Service Attacks
Riverbed Technology, Inc.	09/931,561	7,043,759	8/16/2001	5/9/2006	Architecture to Thwart Denial of Service Attacks
Riverbed Technology, Inc.	09/946,787	7,398,317	9/5/2001	7/8/2008	Thwarting Connection-Based Denial of Service Attacks
Riverbed Technology, Inc.	10/062,974	7,213,264	1/31/2002	5/1/2007	Architecture to Thwart Denial of Service Attacks
Riverbed Technology, Inc.	10/066,232	7,743,415	1/31/2002	6/22/2010	Denial of Service Attacks Characterization
Riverbed Technology, Inc.	10/066,252	7,657,934	1/31/2002	2/2/2010	Architecture to Thwart Denial of Service Attacks
Riverbed Technology, Inc.	10/112,179	7,219,047	3/28/2002	5/15/2007	Simulation with Convergence-Detection Skip-Ahead
Riverbed Technology, Inc.	10/137,744	7,581,023	4/30/2002	8/25/2009	Architecture to Thwart Denial of Service Attacks
Riverbed Technology, Inc.	10/186,401	6,643,613	7/1/2002	11/4/2003	System and Method for Monitoring Performance Metrics
Riverbed Technology, Inc.	10/195,904	7,337,206	7/15/2002	2/26/2008	Method for Detecting Congestion in Internet Traffic
Riverbed Technology, Inc.	10/195,905	7,277,843	7/15/2002	10/2/2007	Method for Real-Time Auto-Detection of Outliers
Riverbed Technology, Inc.	10/198,689	7,076,695	7/18/2002	7/11/2006	System and Methods for Adaptive Threshold Determination for Performance Metrics
Riverbed Technology, Inc.	10/205,101	6,928,472	7/23/2002	8/9/2005	Method for Correlating Congestion to Performance Metrics in Internet Traffic

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	10/205,135	7,509,229	7/23/2002	3/24/2009	Bayesian Approach to Correlating Congestion to Performance Metrics in Internet Traffic
Riverbed Technology, Inc.	10/243,534	7,219,034	9/13/2002	5/15/2007	System and Methods for Display of Time-Series Data Distribution
Riverbed Technology, Inc.	10/285,315	7,120,666	10/30/2002	10/10/2006	TRANSACTION ACCELERATOR FOR CLIENT-SERVER COMMUNICATIONS SYSTEMS
Riverbed Technology, Inc.	10/285,330	6,667,700	10/30/2002	12/23/2003	CONTENT-BASED SEGMENTATION SCHEME FOR DATA COMPRESSION IN STORAGE AND TRANSMISSION INCLUDING HIERARCHICAL SEGMENT REPRESENTATION
Riverbed Technology, Inc.	10/325,148	7,139,692	12/20/2002	11/21/2006	Flow Propagation Analysis Using Iterative Signaling
Riverbed Technology, Inc.	10/640,405	8,069,225	8/12/2003	11/29/2011	TRANSPARENT CLIENT-SERVER TRANSACTION ACCELERATOR
Riverbed Technology, Inc.	10/640,459	7,650,416	8/12/2003	1/19/2010	CONTENT DELIVERY FOR CLIENT-SERVER PROTOCOLS WITH USER AFFINITIES USING CONNECTION END-POINT PROXIES
Riverbed Technology, Inc.	10/640,562	7,318,100	8/12/2003	1/8/2008	COOPERATIVE PROXY AUTO-DISCOVERY AND CONNECTION INTERCEPTION
Riverbed Technology, Inc.	10/701,154	8,504,879	11/3/2003	8/6/2013	Connection Based Anomaly Detection
Riverbed Technology, Inc.	10/701,155	7,827,272	11/3/2003	11/2/2010	Connection Table for Intrusion Detection
Riverbed Technology, Inc.	10/701,157	7,774,839	11/3/2003	8/10/2010	Feedback Mechanism to Minimize False Assertions of a Network Intrusion
Riverbed Technology, Inc.	10/701,346	7,949,737	11/3/2003	5/24/2011	Method and Apparatus for Grouping Nodes Based on Connection Characteristics
Riverbed Technology, Inc.	10/701,356	8,479,057	11/3/2003	7/2/2013	Aggregator for Connection Based Anomaly Detection
Riverbed Technology, Inc.	10/701,376	7,363,656	11/3/2003	4/22/2008	Event Detection/Anomaly Correlation Heuristics
Riverbed Technology, Inc.	10/701,381	8,191,136	11/3/2003	5/29/2012	Role Classification of Hosts within Enterprise Networks Based on Connection Patterns
Riverbed Technology, Inc.	10/701,392	8,090,809	11/3/2003	1/3/2012	Role Grouping

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	10/701,400	7,461,404	11/3/2003	12/22/2008	Detection of Unauthorized Access in a Network
Riverbed Technology, Inc.	10/701,404	7,716,737	11/3/2003	5/11/2010	Connection Based Denial of Service Detection
Riverbed Technology, Inc.	10/702,073	7,664,963	11/3/2003	2/16/2010	Data Collectors in Connection-Based Intrusion Detection
Riverbed Technology, Inc.	10/731,687	6,828,925	12/8/2003	12/7/2004	CONTENT-BASED SEGMENTATION SCHEME FOR DATA COMPRESSION IN STORAGE AND TRANSMISSION INCLUDING HIERARCHICAL SEGMENT REPRESENTATION
Riverbed Technology, Inc.	10/803,167	7,698,730	3/16/2004	4/13/2010	Service Detection
Riverbed Technology, Inc.	10/821,558	7,254,389	4/9/2004	8/7/2007	Wireless Link Simulation with Generic Caching
Riverbed Technology, Inc.	10/845,517	7,848,259	5/14/2004	12/7/2010	System and Methods for Inferring Services on a Network
Riverbed Technology, Inc.	10/880,332		6/28/2004		Rule Based Alerting in Anomaly Detection
Riverbed Technology, Inc.	10/880,333	7,929,534	6/28/2004	4/19/2011	Flow Logging for Connection-Based Anomaly Detection
Riverbed Technology, Inc.	10/903,585	8,010,643	8/2/2004	8/30/2011	System and Methods for Simulating Traffic Generation
Riverbed Technology, Inc.	10/903,586	8,130,661	8/2/2004	3/6/2012	Systems and Methods for Intelligent Probe Testing
Riverbed Technology, Inc.	10/914,603	7,570,669	8/6/2004	8/4/2009	Synchronizing Packet Traces
Riverbed Technology, Inc.	10/923,214	7,469,203	8/20/2004	12/23/2008	Wireless Network Hybrid Simulation
Riverbed Technology, Inc.	10/923,576	7,443,870	8/20/2004	10/28/2008	Method for Prioritizing Grouped Data Reduction
Riverbed Technology, Inc.	10/937,986		9/10/2004		Method and System for Grouping Diagnostic Information
Riverbed Technology, Inc.	10/955,450	7,706,273	9/30/2004	4/27/2010	Port Tracking on Dynamically Negotiated Ports
Riverbed Technology, Inc.	10/957,850	7,764,626	10/4/2004	7/27/2010	Role Grouping of Hosts in Computer Networks
Riverbed Technology, Inc.	10/968,868	6,961,009	10/18/2004	11/1/2005	CONTENT-BASED SEGMENTATION SCHEME FOR DATA COMPRESSION IN STORAGE AND TRANSMISSION INCLUDING HIERARCHICAL SEGMENT REPRESENTATION

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	10/974,386	7,760,653	10/26/2004	7/20/2010	Stackable Aggregation for Connection Based Anomaly Detection
Riverbed Technology, Inc.	11/001,985		12/1/2004		Method for Discovery and Troubleshooting of Network Application Usage and Performance Issues
Riverbed Technology, Inc.	11/061,978	7,519,700	2/18/2005	4/14/2009	Method and System for Topological Navigation of Hierarchical Data Groups
Riverbed Technology, Inc.	11/092,226		3/28/2005		Method and System for Managing a Distributed Network of Network Monitoring Devices
Riverbed Technology, Inc.	11/124,807		5/9/2005		Communicating between a Server and Clients
Riverbed Technology, Inc.	11/124,830		5/9/2005		Managing the Flow of Data Traffic
Riverbed Technology, Inc.	11/124,835	7,523,178	5/9/2005	4/21/2009	Tolerating Failure of Traffic Management Systems
Riverbed Technology, Inc.	11/125,562	8,005,019	5/10/2005	8/23/2011	Fuzzy Routing
Riverbed Technology, Inc.	11/145,201	8,412,685	6/3/2005	4/22/2013	METHOD AND SYSTEM FOR MANAGING DATA
Riverbed Technology, Inc.	11/173,752	7,729,240	6/30/2005	6/1/2010	Method and System for Identifying Duplicate Packets in Flow-Based Network Monitoring System
Riverbed Technology, Inc.	11/173,758	7,593,351	6/30/2005	9/22/2009	Method and System for Collecting and Consolidating Network Traffic Information
Riverbed Technology, Inc.	11/180,878		7/13/2005		Packet Tracing
Riverbed Technology, Inc.	11/180,879	7,729,256	7/13/2005	6/1/2010	Correlating Packets
Riverbed Technology, Inc.	11/180,888		7/13/2005		Network Difference Reporting
Riverbed Technology, Inc.	11/223,789	7,116,249	9/8/2005	10/3/2006	CONTENT-BASED SEGMENTATION SCHEME FOR DATA COMPRESSION IN STORAGE AND TRANSMISSION INCLUDING HIERARCHICAL SEGMENT REPRESENTATION
Riverbed Technology, Inc.	11/229,016	7,428,573	9/15/2005	9/23/2008	TRANSACTION ACCELERATOR FOR CLIENT-SERVER COMMUNICATION SYSTEMS
Riverbed Technology, Inc.	11/242,540		10/3/2005		Peer signaling protocol and system for decentralized traffic management
Riverbed Technology, Inc.	11/243,068	8,364,815	10/3/2005	1/29/2013	RELIABILITY AND AVAILABILITY OF DISTRIBUTED SERVERS

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	11/273,861	7,853,699	11/14/2005	12/14/2010	RULES-BASED TRANSACTION PREFETCHING USING CONNECTION END-POINT PROXIES
Riverbed Technology, Inc.	11/358,536	8,195,443	2/21/2006	6/5/2012	Predictive Modeling and Graphical Editing of Application Logic
Riverbed Technology, Inc.	11/358,538		2/21/2006		Tracking, Analyzing, and Visualizing Application Delay
Riverbed Technology, Inc.	11/387,087		3/21/2006		Email-Based Worm Propagation Properties
Riverbed Technology, Inc.	11/387,092		3/21/2006		Worm Propagation Mitigation
Riverbed Technology, Inc.	11/387,114	8,006,306	3/21/2006	8/23/2011	Exploit-Based Worm Propagation Mitigation
Riverbed Technology, Inc.	11/397,359	7,885,200	4/4/2006	2/8/2011	Application Delay Analysis
Riverbed Technology, Inc.	11/489,414		7/18/2006		SPLIT TERMINATION FOR SECURE COMMUNICATION PROTOCOLS
Riverbed Technology, Inc.	11/490,586		7/21/2006		Automatic Estimation of Node Location Based on Trace Information
Riverbed Technology, Inc.	11/494,025	8,462,624	7/26/2006	6/11/2013	CONGESTION MANAGEMENT OVER LOSSY NETWORK CONNECTIONS
Riverbed Technology, Inc.	11/494,352	8,411,570	7/26/2006	4/2/2013	SERIAL CLUSTER
Riverbed Technology, Inc.	11/494,364	8,204,058	7/26/2006	6/19/2012	AUTOMATIC FRAMING SELECTION
Riverbed Technology, Inc.	11/494,441	8,130,759	7/27/2006	3/6/2012	Routing Validation
Riverbed Technology, Inc.	11/494,692	7,688,743	7/27/2006	3/30/2010	Tracing Routing Differences
Riverbed Technology, Inc.	11/501,388	8,249,094	8/9/2006	8/21/2012	Wireless MAC and Link-Layer Simulation Modeling
Riverbed Technology, Inc.	11/501,389		8/9/2006		Disparate Network Model Synchronization
Riverbed Technology, Inc.	11/503,553	7,693,699	8/11/2006	4/6/2010	Incremental Update of Virtual Devices in a Modeled Network
Riverbed Technology, Inc.	11/503,554	8,230,491	8/11/2006	7/24/2012	Automatic Access to Network Devices Using Various Authentication Schemes
Riverbed Technology, Inc.	11/503,555		8/11/2006		Visualizing a Complex Network Based on a Set of Objects of Interest
Riverbed Technology, Inc.	11/505,171		8/16/2006		Analyzing Security Compliance Within a Network

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	11/505,176		8/16/2006		Capture, Analysis, and Visualization of Concurrent System and Network Behavior of an Application
Riverbed Technology, Inc.	11/505,228	8,493,883	8/16/2006	7/23/2013	A Method for Identifying and Analyzing Network Configuration Differences
Riverbed Technology, Inc.	11/506,648	7,894,369	8/18/2006	2/22/2011	Network Physical Connection Inference for IP Tunnels
Riverbed Technology, Inc.	11/506,650		8/18/2006		Integrated Debugging Environment for a Network Simulation
Riverbed Technology, Inc.	11/506,665	7,730,099	8/18/2006	6/1/2010	Storage and Retrieval of Richly Typed Hierarchical Network Models
Riverbed Technology, Inc.	11/507,114	8,140,665	8/19/2006	3/20/2012	Managing Captured Network Traffic Data
Riverbed Technology, Inc.	11/508,531	7,477,166	8/22/2006	1/13/2009	CONTENT-BASED SEGMENTATION SCHEME FOR DATA COMPRESSION IN STORAGE AND TRANSMISSION INCLUDING HIERARCHICAL SEGMENT REPRESENTATION
Riverbed Technology, Inc.					DATA SEGMENTATION USING SHIFT-VARYING PREDICATE FUNCTION FINGERPRINTING
Riverbed Technology, Inc.	11/618,190	7,733,910	12/29/2006	6/8/2010	DATA SEGMENTATION USING SHIFT-VARYING PREDICATE FUNCTION FINGERPRINTING
Riverbed Technology, Inc.	11/678,595	8,577,956	2/24/2007	11/5/2013	User-Configurable Network Performance Monitors
Riverbed Technology, Inc.	11/683,325	8,447,802	3/7/2007	5/21/2013	ADDRESS MANIPULATION TO PROVIDE FOR THE USE OF NETWORK TOOLS EVEN WHEN TRANSACTION ACCELERATION IS IN USE OVER A NETWORK
Riverbed Technology, Inc.	11/735,474	8,005,945	4/15/2007	8/23/2011	Aggregating Policy Criteria Parameters into Ranges for Efficient Network Analysis
Riverbed Technology, Inc.	11/752,283	7,843,815	5/22/2007	11/30/2010	Estimation of Time-Varying Latency Based on Network Trace Information
Riverbed Technology, Inc.	11/754,940	8,463,843	5/29/2007	6/11/2013	THROTTLING OF PREDICTIVE ACKS IN AN ACCELERATED NETWORK
Riverbed Technology, Inc.	11/755,089	8,095,645	5/30/2007	1/10/2012	COMMUNICATION SYSTEM
					Traffic Flow Inference Based on Link Loads and Gravity Measures



Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	11/755,692	7,769,834	5/30/2007	8/3/2010	A SYSTEM FOR SELECTING A PROXY PAIR BASED ON CONFIGURATIONS OF AUTODISCOVERED
Riverbed Technology, Inc.	11/756,584	7,480,240	5/31/2007	1/20/2009	SERVICE CURVE MAPPING
Riverbed Technology, Inc.	11/762,688	8,462,629	6/13/2007	6/11/2013	COOPERATIVE OPERATION OF NETWORK TRANSPORT AND NETWORK QUALITY OF SERVICE MODULES
Riverbed Technology, Inc.	11/776,708		7/12/2007		Identifying and Reporting Differences in Network Activity Data Files
Riverbed Technology, Inc.	11/776,721		7/12/2007		Assessing Network and Device Compliance with Security Policies
Riverbed Technology, Inc.	11/776,736	7,839,790	7/12/2007	11/23/2010	Network Congestion Analysis
Riverbed Technology, Inc.	11/778,053	7,639,609	7/15/2007	12/29/2009	Controlled Incremental Multi-Protocol Label Switching (MPLS) Traffic Engineering
Riverbed Technology, Inc.	11/779,429	7,889,641	7/18/2007	2/15/2011	Path Flow Formulation for Fast Reroute Bypass Tunnels in MPLS
Riverbed Technology, Inc.	11/829,925	8,089,904	7/29/2007	1/3/2012	Link Inference in Large Networks Based on Incomplete Data
Riverbed Technology, Inc.	11/832,319	7,444,263	8/1/2007	10/28/2008	Performance Metric Collection and Automated Analysis
Riverbed Technology, Inc.	11/832,923	8,195,736	8/2/2007	6/5/2012	Mapping Virtual Internet Protocol Addresses
Riverbed Technology, Inc.	11/834,058	8,135,990	8/6/2007	3/13/2012	Multi-Variate Network Survivability Analysis
Riverbed Technology, Inc.	11/835,130	7,672,238	8/7/2007	3/2/2010	Mapping Off-Network Traffic to an Administered Network
Riverbed Technology, Inc.	11/838,417		8/14/2007		Network Simulation and Analysis Using Operational Forwarding Data
Riverbed Technology, Inc.	11/844,765	8,159,971	8/24/2007	4/17/2012	System and Method for Inferring Connectivity Among Network Segments in the Absence of Configuration Information
Riverbed Technology, Inc.	11/875,900	7,844,423	10/20/2007	11/30/2010	Component-Based Modeling of Wireless MAC Protocols for Efficient Simulations

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	11/941,186		11/16/2007		Modeling and Simulating Flow Propagation in Dynamic Bandwidth Systems
Riverbed Technology, Inc.	12/023,026	8,400,941	8/1/2003	3/19/2013	System and Methods for Inferring Services on a Network
Riverbed Technology, Inc.	12/044,861	8,533,310	3/7/2008	9/10/2013	METHOD AND APPARATUS FOR ACCELERATION BY PREFETCHING ASSOCIATED OBJECTS
Riverbed Technology, Inc.	12/060,271	8,095,649	4/1/2008	1/10/2012	Network Delay Analysis Including Parallel Delay Effects
Riverbed Technology, Inc.	12/098,436	7,813,281	4/6/2008	10/12/2010	Interactive MPLS Traffic Engineering
Riverbed Technology, Inc.	12/106,272	8,458,795	4/19/2008	6/4/2013	Event Detection/Anomaly Correlation Heuristics
Riverbed Technology, Inc.	12/117,629		5/8/2008		HYBRID SEGMENT-ORIENTED FILE SERVER AND WAN ACCELERATOR
Riverbed Technology, Inc.	12/140,184	8,463,941	6/16/2008	6/1/2013	CROSS-SESSION PROTOCOL ACCELERATION AND ITS APPLICATION TO STORAGE AREA NETWORK FILE SYSTEMS
Riverbed Technology, Inc.	12/143,799	8,228,804	6/22/2008	7/24/2012	Tuning Routing Metrics to Reduce Maximum Link Utilization and/or Provide Failure Resiliency
Riverbed Technology, Inc.	12/176,317	8,166,004	7/18/2008	4/24/2012	Verifying Data Consistency Among Multiple Structured Files
Riverbed Technology, Inc.	12/176,325	8,495,577	7/18/2008	7/23/2013	Selective Monitoring of Software Applications
Riverbed Technology, Inc.	12/191,514	8,176,186	8/14/2008	5/8/2012	TRANSACTION ACCELERATOR FOR CLIENT-SERVER COMMUNICATIONS SYSTEMS
Riverbed Technology, Inc.	12/191,805	7,849,134	8/14/2008	12/7/2010	TRANSACTION ACCELERATOR FOR CLIENT-SERVER COMMUNICATIONS SYSTEMS
Riverbed Technology, Inc.	12/192,103	8,165,038	8/14/2008	4/24/2012	Network Physical Connection Inference for IP Tunnels
Riverbed Technology, Inc.	12/195,393	7,843,840	8/20/2008	11/30/2010	Traffic Independent Survivability Analysis
Riverbed Technology, Inc.	12/196,044	8,255,906	8/21/2008	8/28/2012	Modeling Overhead for a Plurality of Virtualization Technologies in a Computer System
Riverbed Technology, Inc.	12/210,087	7,839,781	9/12/2008	11/23/2010	SERVICE CURVE MAPPING

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	12/235,325	8,266,114	9/22/2008	9/11/2012	LOG STRUCTURED CONTENT ADDRESSABLE DEDUPLICATING STORAGE
Riverbed Technology, Inc.	12/266,054		11/6/2008		User Interface For Network Events and Tuning
Riverbed Technology, Inc.	12/266,081	8,472,328	11/6/2008	6/25/2013	Impact Scoring and Reducing False Positives
Riverbed Technology, Inc.	12/266,105		11/6/2008		Detecting Outliers in Network Traffic Time Series
Riverbed Technology, Inc.	12/280,760	8,566,919	10/24/2008	10/22/2013	DISTRIBUTED WEB APPLICATION FIREWALL
Riverbed Technology, Inc.	12/296,062		11/6/2008		METHOD FOR PROVIDING WEB APPLICATION SECURITY
Riverbed Technology, Inc.	12/327,693	8,478,986	12/3/2008	7/2/2013	REDUCING LATENCY OF SPLIT-TERMINATED SECURE COMMUNICATION PROTOCOL SESSIONS
Riverbed Technology, Inc.	12/327,766		12/3/2008		TRANSACTION ACCELERATION USING APPLICATION-SPECIFIC LOCKING
Riverbed Technology, Inc.	12/330,197	7,852,237	12/8/2008	12/14/2010	CONTENT-BASED SEGMENTATION SCHEME FOR DATA COMPRESSION IN STORAGE AND TRANSMISSION INCLUDING HIERARCHICAL SEGMENT REPRESENTATION
Riverbed Technology, Inc.	12/331,257	8,140,690	12/9/2008	3/20/2012	CONNECTION FORWARDING
Riverbed Technology, Inc.	12/391,967	7,953,869	2/24/2009	5/31/2011	COOPERATIVE PROXY AUTO-DISCOVERY AND CONNECTION INTERCEPTION
Riverbed Technology, Inc.	12/396,904		3/3/2009		SPLIT TERMINATION OF SECURE COMMUNICATION SESSIONS WITH MUTUAL CERTIFICATE-BASED AUTHENTICATION
Riverbed Technology, Inc.	12/397,356	7,885,206	04.03.2009	2/8/2011	Method and System for Topological Navigation of Hierarchical Data Groups
Riverbed Technology, Inc.	12/398,898	7,984,160	3/5/2009	7/19/2011	ESTABLISHING A SPLIT-TERMINATED COMMUNICATION CONNECTION THROUGH A STATEFUL FIREWALL WITH NETWORK TRANSPARENCY

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	12/571,430	8,180,902	9/30/2009	5/15/2012	ESTABLISHING NETWORK CONNECTIONS BETWEEN TRANSPARENT NETWORK DEVICES
Riverbed Technology, Inc.	12/571,433	8,181,060	9/30/2009	5/15/2012	PREVENTING DATA CORRUPTION WITH TRANSPARENT NETWORK CONNECTIONS
Riverbed Technology, Inc.	12/615,340		11/10/2009		Traffic Management Apparatus
Riverbed Technology, Inc.	12/623,592	8,493,871	11/23/2009	7/23/2013	End-to-End Analysis of Transactions in Networks with Traffic-Altering Devices
Riverbed Technology, Inc.	12/632,703		12/7/2009		CONTENT DELIVERY FOR CLIENT SERVER PROTOCOLS WITH USER AFFINITIES USING CONNECTION END-POINT PROXIES
Riverbed Technology, Inc.	12/637,476	7,886,218	12/14/2009	2/8/2011	METHODS AND DEVICES FOR POST PROCESSING RENDERED WEB PAGES HANDLING REQUESTS OF POST PROCESSED WEB PAGES
Riverbed Technology, Inc.	12/705,570	8,359,450	2/13/2010	1/22/2013	Memory Utilization Analysis
Riverbed Technology, Inc.	12/729,127		3/22/2010		METHOD AND APPARATUS FOR SCHEDULING A HETEROGENEOUS COMMUNICATION FLOW
Riverbed Technology, Inc.	12/730,185		3/23/2010		VIRTUALIZED DATA STORAGE SYSTEM ARCHITECTURE
Riverbed Technology, Inc.	12/730,192		3/23/2010		VIRTUALIZED DATA STORAGE SYSTEM CACHE MANAGEMENT
Riverbed Technology, Inc.	12/730,198		3/23/2010		VIRTUALIZED DATA STORAGE SYSTEM OPTIMIZATIONS
Riverbed Technology, Inc.	12/818,872	8,504,670	6/18/2010	8/6/2013	VIRTUALIZED DATA STORAGE APPLICATIONS AND OPTIMIZATIONS
Riverbed Technology, Inc.	12/825,296	8,380,825	6/28/2010	2/19/2013	SELECTING PROXIES FROM AMOUNG AUTODISCOVERED PROXIES

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	12/826,430	8,438,628	6/29/2010	12/826,430	METHOD AND APPARATUS FOR SPLIT-TERMINATING A SECURE NETWORK CONNECTION, WITH CLIENT AUTHENTICATION
Riverbed Technology, Inc.	12/843,754	8,473,620	7/26/2010	6/25/2013	INTERCEPTION OF A CLOUD-BASED COMMUNICATION CONNECTION
Riverbed Technology, Inc.	12/853,729		8/10/2010		Managing Client Requests for Data
Riverbed Technology, Inc.	12/861,832	8,296,424	8/24/2010	10/23/2012	Network Capacity Planning
Riverbed Technology, Inc.	12/878,992		9/9/2010		TIERED STORAGE INTERFACE
Riverbed Technology, Inc.	12/893,894		9/29/2010		SYSTEM AND METHOD FOR WARMING AN OPTIMIZATION DEVICE
Riverbed Technology, Inc.	12/894,681		9/30/2010		RULES-BASED TRANSACTIONS PREFETCHING USING CONNECTION END-POINT PROXIES
Riverbed Technology, Inc.	12/895,811		9/30/2010		CLOUD SYNTHETIC BACKUPS
Riverbed Technology, Inc.	12/895,835		9/30/2010		CLOUD-BASED DISASTER RECOVERY OF BACKUP DATA AND METADATA
Riverbed Technology, Inc.	12/900,348		10/7/2010		Network Path Discovery and Analysis
Riverbed Technology, Inc.	12/900,357		10/7/2010		Network Path Discovery and Analysis
Riverbed Technology, Inc.	12/902,964	8,509,070	10/12/2010	8/13/2013	SERVICE CURVE MAPPING
Riverbed Technology, Inc.	12/903,975		10/13/2010		METHOD OF IMPROVING PERFORMANCE OF A DATA STORAGE DEVICE
Riverbed Technology, Inc.	12/907,225		10/19/2010		System and Methods for Inferring Services on a Network
Riverbed Technology, Inc.	12/916,112	8,271,688	10/29/2010	9/18/2012	TRANSACTION ACCELERATOR FOR CLIENT-SERVER COMMUNICATIONS
Riverbed Technology, Inc.	12/918,329		6/14/2013		OPTIMIZING SECURE COMMUNICATIONS
Riverbed Technology, Inc.	12/940,017	8,508,389	11/4/2010	8/13/2013	CONTENT-BASED SEGMENTATION SCHEME FOR DATA COMPRESSION IN STORAGE AND TRANSMISSION INCLUDING HIERARCHICAL SEGMENT REPRESENTATION

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	12/942,991		11/9/2010		WAN-OPTIMIZED LOCAL AND CLOUD SPANNING DEDUPLICATED STORAGE SYSTEM
Riverbed Technology, Inc.	12/963,481		12/8/2010		Web Transaction Analysis
Riverbed Technology, Inc.	12/978,056		12/23/2010		VIRTUAL DATA STORAGE DEVICES AND APPLICATIONS OVER WIDE AREA NETWORKS
Riverbed Technology, Inc.	13/021,709		2/4/2011		Correcting Packet Timestamps in Virtualized Environments
Riverbed Technology, Inc.	13/070,064		3/23/2011		SINGLE-ENDED DEDUPLICATION USING CLOUD STORAGE PROTOCOL
Riverbed Technology, Inc.	13/070,089		3/23/2011		DEDUPLICATING CLOUD STORAGE PROTOCOL
Riverbed Technology, Inc.	13/074,602		3/29/2011		OPTIMIZED FILE CREATION IN WAN-OPTIMIZED STORAGE
Riverbed Technology, Inc.	13/074,923		3/29/2011		QUALITY OF SERVICE FOR INBOUND NETWORK TRAFFIC FLOWS
Riverbed Technology, Inc.	13/082,186	8,316,118	4/7/2011	11/20/2012	COOPERATIVE PROXY AUTO-DISCOVERY AND CONNECTION INTERCEPTION
Riverbed Technology, Inc.	13/115,692		5/25/2011		Apparatus for Routing Requests
Riverbed Technology, Inc.	13/117,105		5/26/2011		Multi-Tier Message Correlation
Riverbed Technology, Inc.	13/152,152	8,255,544	6/2/2011	8/28/2012	ESTABLISHING A SPLIT-TERMINATED COMMUNICATION CONNECTION THROUGH A STATEFUL FIREWALL, WITH NETWORK TRANSPARENCY
Riverbed Technology, Inc.	13/165,589		6/21/2011		Multi-Variate Sales Performance Analysis System
Riverbed Technology, Inc.	13/166,321		6/22/2011		BOOTING DEVICES USING VIRTUAL STORAGE ARRAYS OVER WIDE-AREA NETWORKS

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	13/170,063		6/27/2011		CONNECTING TRANSPARENT NETWORK DEVICES TO OPTIMIZE UNIDIRECTIONAL NETWORK TRAFFIC
Riverbed Technology, Inc.	13/210,351		8/15/2011		Network Path Discovery and Analysis
Riverbed Technology, Inc.	13/218,504		8/26/2011		Monitoring Connections
Riverbed Technology, Inc.	13/249,177	8,549,108	9/29/2011	10/1/2013	OPTIMIZED PREFETCHING OF COMPOUND DATA
Riverbed Technology, Inc.	13/249,195		9/29/2011		CONFIGURING AND AUTHENTICATING WAN OPTIMIZATION DEVICES FOR ACCESSING CONTENT DELIVERY NETWORKS
Riverbed Technology, Inc.	13/249,201	8,516,158	9/29/2011	8/20/2013	INTEGRATING WAN OPTIMIZATION DEVICES WITH CONTENT DELIVERY NETWORKS
Riverbed Technology, Inc.	13/250,200		9/30/2011		Service Network Discovery
Riverbed Technology, Inc.	13/251,148	8,312,101	9/30/2011	11/13/2012	TRANSACTION ACCELERATOR FOR CLIENT-SERVER COMMUNICATIONS SYSTEMS
Riverbed Technology, Inc.	13/282,393		10/26/2011		TRANSPARENT CLIENT-SERVER TRANSACTION ACCELERATOR
Riverbed Technology, Inc.	13/289,377	8,244,691	11/4/2011	8/14/2012	DICTIONARY ARCHITECTURE AND METHODOLOGY FOR REVISION-TOLERANT DATA DE-DUPLICATION
Riverbed Technology, Inc.	13/301,688		11/21/2011		Link Inference in Large Networks Based on Incomplete Data
Riverbed Technology, Inc.	13/315,619		12/9/2011		Policy Aggregation for Computing Network Health
Riverbed Technology, Inc.	13/333,955		12/21/2011		System and Method for Separately Analyzing Protocol and Congestion Delay in Networks
Riverbed Technology, Inc.	13/341,825		12/30/2011		MANAGING DIGITAL CERTIFICATES FOR WAN OPTIMIZATION OVER CONTENT DELIVERY NETWORKS
Riverbed Technology, Inc.	13/346,453	8,312,139	1/9/2012	11/13/2012	Traffic Flow Inference Based on Link Loads and Gravity Measures

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	13/365,484		2/3/2012		Correlating Input and Output Requests between Client and Server Components in a Multi-Tier Application
Riverbed Technology, Inc.	13/365,496		2/3/2012		Overhead Management for Event Tracing Software
Riverbed Technology, Inc.	13/400,973		2/21/2012		Overhead Management for Event Tracing Software
Riverbed Technology, Inc.	13/410,032	8,386,637	3/1/2012	2/26/2013	CONNECTION FORWARDING
Riverbed Technology, Inc.	13/410,689		3/2/2012		METHOD AND SYSTEM FOR TRANSMITTING DATA OVER ONE OR MORE NETWORKS
Riverbed Technology, Inc.	13/412,604		3/5/2012		Routing Validation
Riverbed Technology, Inc.	13/412,615		3/6/2012		Systems and Methods for Intelligent Probe Testing
Riverbed Technology, Inc.	13/412,623		3/6/2012		Multi-Variate Network Survivability Analysis
Riverbed Technology, Inc.	13/415,815		3/8/2012		MULTILEVEL DISTRIBUTED NETWORK MONITORING SYSTEM ARCHITECTURE
Riverbed Technology, Inc.	13/415,819		3/8/2012		DISTRIBUTED NETWORK TRAFFIC DATA COLLECTION AND STORAGE
Riverbed Technology, Inc.	13/415,821		3/8/2012		ACCESSING NETWORK TRAFFIC DATA AT MULTIPLE TIME SCALES AND LEVELS OF DETAIL
Riverbed Technology, Inc.	13/415,823		3/8/2012		IDENTIFYING RELATED NETWORK TRAFFIC DATA FOR MONITORING AND ANALYSIS
Riverbed Technology, Inc.	13/424,005	8,601,122	3/19/2012	11/13/2013	Managing Captured Network Traffic Data
Riverbed Technology, Inc.	13/430,541		3/26/2012		Inferring Connectivity in the Presence of Conflicting Network Data
Riverbed Technology, Inc.	13/436,873		3/31/2012		COOPERATIVE PROXY AUTO-DISCOVERY AND CONNECTION INTERCEPTION THROUGH NETWORK ADDRESS TRANSLATION
Riverbed Technology, Inc.	13/436,874		3/31/2012		MONITORING USAGE OF WAN OPTIMIZATION DEVICES INTEGRATED WITH CONTENT DELIVERY NETWORKS



Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	13/441,681	8,402,085	4/6/2012	3/19/2013	TRANSACTION ACCELERATOR FOR CLIENT-SERVER COMMUNICATIONS SYSTEMS
Riverbed Technology, Inc.	13/444,583		4/11/2012		Assessing Application Performance with an Operational Index
Riverbed Technology, Inc.	13/448,389		4/16/2012		System and Method for Inferring Connectivity Among Network Segments in the Absence of Configuration Information
Riverbed Technology, Inc.	13/453,731		4/23/2012		QUALITY OF SERVICE FOR INBOUND NETWORK TRAFFIC FLOWS DURING SLOW-START PHASES
Riverbed Technology, Inc.	13/454,034		4/23/2012		Network Physical Connection Inference for IP Tunnels
Riverbed Technology, Inc.	13/454,050		4/23/2012		Verifying Data Consistency Among Multiple Structured Files
Riverbed Technology, Inc.	13/459,065	8,321,580	4/27/2012	11/27/2012	TRANSACTION ACCELERATOR FOR CLIENT-SERVER COMMUNICATION SYSTEMS
Riverbed Technology, Inc.	13/460,392		4/30/2012		ESTABLISHING NETWORK CONNECTIONS BETWEEN TRANSPARENT NETWORK DEVICES
Riverbed Technology, Inc.	13/464,713		5/4/2012		ENSURING WRITE OPERATION CONSISTENCY USING RAID STORAGE DEVICES
Riverbed Technology, Inc.	13/464,714		5/4/2012		ENSURING WRITE OPERATION CONSISTENCY USING MULTIPLE STORAGE DEVICES
Riverbed Technology, Inc.	13/471,956		5/15/2012		VIRTUALIZED DATA STORAGE SYSTEM ARCHITECTURE USING PREFETCHING AGENT
Riverbed Technology, Inc.	13/487,863		6/4/2012		Mapping Virtual Internet Protocol Addresses
Riverbed Technology, Inc.	13/487,895		6/4/2012		Predictive Modeling and Graphical Editing of Application Logic
Riverbed Technology, Inc.	13/491,501		6/7/2012		AUTOMATIC FRAMING SELECTION

Officer	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	13/530,740		6/22/2012		Controlling the Operation of Server Computers
Riverbed Technology, Inc.	13/536,770		6/28/2012		METHOD AND APPARATUS FOR LOAD BALANCING BETWEEN WAN OPTIMIZATION DEVICES
Riverbed Technology, Inc.	13/556,174		7/23/2012		Automatic Access to Network Devices Using Various Authentication Schemes
Riverbed Technology, Inc.	13/556,178		7/23/2012		Tuning Routing Metrics to Reduce Maximum Link Utilization and/or Provide Failure Resiliency
Riverbed Technology, Inc.	13/568,988		8/7/2012		Quick Path Discovery
Riverbed Technology, Inc.	13/570,572		8/9/2012		Application Performance Analysis that is Adaptive to Business Activity Patterns
Riverbed Technology, Inc.	13/589,896		8/20/2012		TRANSACTION ACCELERATOR FOR CLIENT-SERVER COMMUNICATIONS SYSTEMS
Riverbed Technology, Inc.	13/590,088		8/20/2012		Methods and System for Modeling Wireless Communications in a Network
Riverbed Technology, Inc.	13/595,372		8/27/2012		Virtualization Planning System
Riverbed Technology, Inc.	13/645,688		10/5/2012		Methods and System for Workflow Management of Sales Opportunities
Riverbed Technology, Inc.	13/650,354		10/12/2012		Routing Network Traffic
Riverbed Technology, Inc.	13/654,859		10/18/2012		Detected IP Link and Connectivity Inference
Riverbed Technology, Inc.	13/657,541		10/22/2012		Unpublished
Riverbed Technology, Inc.	13/669,117		11/5/2012		Incrementally Improved Auto-Discovery of Network Devices
Riverbed Technology, Inc.	13/670,753		11/7/2012		COOPERATIVE PROXY AUTO-DISCOVERY AND CONNECTION INTERCEPTION
Riverbed Technology, Inc.	13/674,874		11/12/2012		Unpublished
Riverbed Technology, Inc.	13/677,283		11/14/2012		Unpublished
Riverbed Technology, Inc.	13/693,165		12/4/2012		Tracking Objects within Dynamic Environments
Riverbed Technology, Inc.	13/715,381		12/14/2012		Methods and Systems for Efficient Updating of Time-Aligned Graphs in a Monitoring System

Owner	Application Number	Patent Number	Filing Date	Issue Date	Title
Riverbed Technology, Inc.	13/725,926		12/21/2012		RELIABILITY AND AVAILABILITY OF DISTRIBUTED SERVERS
Riverbed Technology, Inc.	13/744,364		1/17/2013		SYSTEM FOR SELECTING A PROXY PAIR BASED ON CONFIGURATIONS OF AUTODISCOVERED PROXIES ON A NETWORK
Riverbed Technology, Inc.	13/745,055		1/18/2013		Using Routing Information and Inter-layer Relationships to Determine Utilization in a Transport Network
Riverbed Technology, Inc.	13/746,273		1/21/2013		Unpublished
Riverbed Technology, Inc.	13/766,703		2/13/2013		TRANSACTION ACCELERATION FOR CLIENT-SERVER COMMUNICATION SYSTEMS
Riverbed Technology, Inc.	13/772,011		2/20/2013		Event Detection/Anomaly Correlation Heuristics
Riverbed Technology, Inc.	13/778,628		2/27/2013		SERIAL CLUSTERING
Riverbed Technology, Inc.	13/867,499		4/22/2013		ADDRESS MANIPULATION TO PROVIDE FOR THE USE OF NETWORK TOOLS EVEN WHEN TRANSACTION ACCELERATION IS IN USE OVER A NETWORK
Riverbed Technology, Inc.	13/874,044		4/30/2013		METHOD AND APPARATUS FOR A DURABLE, PORTABLE AND DETERMINISTIC MULTI-PART RESOURCE
Riverbed Technology, Inc.	13/949,162		7/23/2013		Unpublished
Riverbed Technology, Inc.	13/949,163		7/23/2013		Unpublished
Riverbed Technology, Inc.	13/965,605		8/13/2013		Unpublished
Riverbed Technology, Inc.	13/975,049		8/23/2013		OPTIMIZING COMMUNICATIONS USING CLIENT-SIDE RECONSTRUCTION SCRIPTING
Riverbed Technology, Inc.	14/042,863		10/1/2013		Unpublished
Riverbed Technology, Inc.	14/060,271		10/22/2013		Unpublished
Riverbed Technology, Inc.	14/062,489		10/24/2013		Unpublished

PATENT SECURITY AGREEMENT

This PATENT SECURITY AGREEMENT, dated as of December 20, 2013 ("Patent Security Agreement"), made by RIVERBED TECHNOLOGY, INC., a Delaware corporation, located at 199 Fremont Street, San Francisco, CA 94105 (the "Grantors"), is in favor of JPMORGAN CHASE BANK, N.A., as collateral agent (in such capacity, the "Collateral Agent") for the Secured Parties.

WITNESSETH:

WHEREAS, the Grantor is party to a Guarantee and Collateral Agreement dated as of December 20, 2013 (the "Guarantee and Collateral Agreement") in favor of the Collateral Agent and JPMORGAN CHASE BANK, N.A., as administrative agent (in such capacity, the "Administrative Agent") pursuant to which the Grantor is required to execute and deliver this Patent Security Agreement (capitalized terms used but not otherwise defined herein shall have the meanings given to them in the Guarantee and Collateral Agreement);

WHEREAS, pursuant to the terms of the Guarantee and Collateral Agreement, each Grantor has created in favor of the Collateral Agent a security interest in the Patent Collateral (as defined below);

NOW, THEREFORE, in consideration of the premises and to induce the Agents and the Lenders to enter into the Credit Agreement and to induce Lenders to make their respective extensions of credit to the Borrower thereunder and to induce the Qualified Counterparties to enter into the Specified Hedge Agreements and the Specified Cash Management Agreements and provide financial accommodation, each Grantor hereby agrees with the Collateral Agent, for the benefit of the Secured Parties, as follows:

Each Grantor hereby grants to the Collateral Agent, for the benefit of the Secured Parties, a security interest in all of the following property now owned or at any time hereafter acquired by such Grantor or in which such Grantor now has or at any time in the future may acquire any right, title or interest (collectively, the "Patent Collateral"), as collateral security for the complete payment and performance when due (whether at the stated maturity, by acceleration or otherwise) of all Secured Obligations:

- (a) the registered and applied-for Patents of such Grantor listed on Schedule 1 attached hereto; and
- (b) all Proceeds of any of the foregoing;

provided, that (i) this Patent Security Agreement shall not constitute a grant of a security interest in any property to the extent that and for as long as such property is excluded as Collateral by the terms of the Guarantee and Collateral Agreement; and (ii) the security interest granted hereby (A) shall attach at all times to all proceeds of such property, (B) shall attach to such property immediately and automatically (without need for any further grant or act) at such time as the condition described in clause (i) ceases to exist and (C) to the extent severable, shall, in any event, attach to all rights in respect of such property that are not subject to the applicable condition described in clause (i).

The security interest granted pursuant to this Patent Security Agreement is granted concurrently and in conjunction with security interest granted to the Collateral Agent pursuant to

the Guarantee and Collateral Agreement and the Grantor hereby acknowledges and affirms that the rights and remedies of the Collateral Agent with respect to the security interest in the Patents made and granted hereby are more fully set forth in the Guarantee and Collateral Agreement. In the event that any provision of this Patent Security Agreement is deemed to conflict with the Guarantee and Collateral Agreement, the provisions of the Guarantee and Collateral Agreement shall govern.

The term of this Patent Security Agreement shall be coterminous with the Guarantee and Collateral Agreement.

Each Grantor hereby authorizes and requests that the Commissioner of Patents and Trademarks record this Patent Security Agreement.

**THIS PATENT SECURITY AGREEMENT AND THE RIGHTS AND OBLIGATIONS OF THE PARTIES UNDER THIS PATENT SECURITY AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED AND INTERPRETED IN ACCORDANCE WITH, THE LAW OF THE STATE OF NEW YORK.**

This Patent Security Agreement may be executed by one or more of the parties to this Patent Security Agreement on any number of separate counterparts, and all of said counterparts taken together shall be deemed to constitute one and the same instrument. Delivery of an executed signature page of this Patent Security Agreement by facsimile transmission or electronic transmission (in PDF format) shall be effective as delivery of a manually executed counterpart hereof. A set of the copies of this Patent Security Agreement signed by all the parties shall be lodged with the Borrower, the Administrative Agent and the Collateral Agent.

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IN WITNESS WHEREOF, each Grantor has caused this PATENT SECURITY AGREEMENT to be executed and delivered by its duly authorized officer as of the date first above written.

RIVERBED TECHNOLOGY, INC.,  
as Grantor

By: \_\_\_\_\_

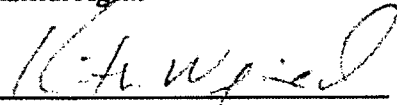
Name: Jerry M. Kennelly  
Title: Chief Executive Officer

[Signature Page to Patent Security Agreement]

PATENT  
REEL: 032421 FRAME: 0183

Accepted and Agreed:

JPMORGAN CHASE BANK, N.A.,  
as Collateral Agent

By: 

Name: Keith Winzenried  
Title: Credit Executive

[Signature Page to Patent Security Agreement]

PATENT  
REEL: 032421 FRAME: 0184

## Patent Assignment Abstract of Title

**NOTE: Results display only for issued patents and published applications.  
For pending or abandoned applications please consult USPTO staff.**

### Total Assignments: 5

Patent #: 5945933

Issue Dt: 08/31/1999

Application #: 09013980

Filing Dt: 01/27/1998

Inventor: NIR KALKSTEIN

Title: ADAPTIVE PACKET COMPRESSION APPARATUS AND METHOD

### Assignment: 1

Reel/Frame: 008963/0847

Recorded: 01/27/1998

Pages: 2

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

Assignor: KALKSTEIN, NIR

Exec Dt: 01/13/1998

Assignee: INFIT LTD.

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KFAR SABA, ISRAEL 44425

Correspondent: MARK M. FRIEDMAN

C/O ANTHONY CASTORINA

2001 JEFFERSON DAVIS HIGHWAY, SUITE 207

ARLINGTON, VA 22202

### Assignment: 2

Reel/Frame: 023679/0931

Recorded: 12/22/2009

Pages: 5

Conveyance: CHANGE OF NAME (SEE DOCUMENT FOR DETAILS).

Assignor: INFIT LTD.

Exec Dt: 03/08/1999

Assignee: EXPAND NETWORKS LTD.

HANECHOSHET 6

TEL AVIV, ISRAEL 20772

Correspondent: MARK FRIEDMAN

C/O POLKINGHORN, 9003 FLORIN WAY

UPPER MARLBORO, MD 20772

### Assignment: 3

Reel/Frame: 027660/0562

Recorded: 02/06/2012

Pages: 3

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

Assignor: EXPAND NETWORKS LTD.

Exec Dt: 01/10/2012

Assignee: RIVERBED TECHNOLOGY, INC.

199 FREMONT STREET

SAN FRANCISCO, CALIFORNIA 94105

Correspondent: BARRY CHAPIN, CHAPIN IP LAW, LLC

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1700 WEST PARK DRIVE, SUITE 280

WESTBOROUGH, MA 01581

### Assignment: 4

Reel/Frame: 029646/0060

Recorded: 12/20/2012

Pages: 45

Conveyance: SECURITY AGREEMENT

Assignors: RIVERBED TECHNOLOGY, INC.

Exec Dt: 12/18/2012

OPNET TECHNOLOGIES, INC.

Exec Dt: 12/18/2012

Assignee: MORGAN STANLEY & CO. LLC

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BALTIMORE, MARYLAND USA 21231

Correspondent: THOMAS FAHEY

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WASHINGTON, D.C. 20005

**Assignment: 5**

**Reel/Frame:** 032113/0425

**Recorded:** 12/26/2013

**Pages:** 28

**Conveyance:** RELEASE OF PATENT SECURITY INTEREST

**Assignor:** MORGAN STANLEY & CO. LLC, AS COLLATERAL AGENT

**Exec Dt:** 12/20/2013

**Assignee:** RIVERBED TECHNOLOGY, INC.

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SAN FRANCISCO, CALIFORNIA 94105

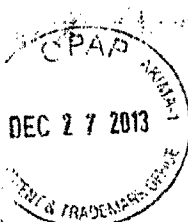
**Correspondent:** THOMAS FAHEY

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Form PTO-1595 (Rev. 03-09)  
OMB No. 0851-0027 (exp. 03/31/2009)

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**4. Application or patent number(s):**

☐ This document is being filed together with a new application.

A. Patent Application No.(s)

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Please see attached schedules.

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**5. Name and address to whom correspondence concerning document should be mailed:**

Name: Thomas Fahey

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**6. Total number of applications and patents involved:** 304

**7. Total fee (37 CFR 1.21(h) & 3.41) \$** 12,160

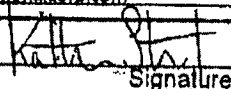
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