

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

VALTRUS INNOVATIONS LTD. and KEY
PATENT INNOVATIONS LTD.,

Plaintiffs,

v.

THE HOME DEPOT, INC. and HOME DEPOT
U.S.A., INC.,

Defendants.

Case No. 2:25-CV-00081-JRG

JURY TRIAL DEMANDED

**DEFENDANTS THE HOME DEPOT, INC., AND HOME DEPOT U.S.A., INC.'S
INVALIDITY CONTENTIONS, SUBJECT MATTER ELIGIBILITY CONTENTIONS,
AND PATENT RULE 3-4 ACCOMPANYING DOCUMENT PRODUCTION**

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I. INTRODUCTION

Pursuant to the Court’s June 9, 2025 Second Amended Docket Control Order [Dkt. 54], P.R. 3-3 and 3-4, and the Court’s Standing Order Regarding Subject Matter Eligibility Contentions, Defendants The Home Depot, Inc.¹ (“THD”) and Home Depot U.S.A., Inc. (“HDUSA”) (collectively, “Defendants” or “Home Depot”) serve their Invalidity and Subject Matter Eligibility Contentions (“Invalidity Contentions”) on Plaintiffs Valtrus Innovations Ltd. (“Valtrus”) and Key Patent Innovations Ltd. (“KPI”) (collectively, “Valtrus” or “Plaintiffs”). The Invalidity Contentions address the following claims (the “Asserted Claims”) of U.S. Patent Nos. 7,904,686 (the “’686 patent”), 7,640,332 (the “’332 patent”), 7,068,597 (the “’597 patent”), 7,120,832 (the “’832 patent”), and 7,107,326 (the “’326 patent”) (collectively, the “Asserted Patents”):

Asserted Patent No.	Asserted Claims
’686 patent	1-9 ²
’332 patent	1-9 ³
’597 patent	1-18 and 20
’832 patent	1-11 and 25-26
’326 patent	1-18

Valtrus’s Infringement Contentions are deemed to be its final contentions pursuant to Patent Local Rule 3-6. Should the Court allow Valtrus to later assert infringement of additional claims not asserted in Valtrus’s Infringement Contentions or additional infringement theories

¹ The Home Depot, Inc. is an improperly named holding company, which does not manufacture, use, offer for sale, or sell any product or service accused of infringement in this case or operate Home Depot’s online presence or retail stores, and should accordingly be dismissed from this case. Dkt. No. 38 at 6-7.

² Valtrus stated in its contentions cover pleading that claims 1-9 are asserted, but did not provide an infringement contention chart for claim 9. As such, claim 9 is not properly asserted. Nonetheless, Home Depot addresses claim 9 in these contentions.

³ Valtrus stated in its contentions cover pleading that claims 1-9 are asserted, but did not provide an infringement contention chart for claim 9. As such, claim 9 is not properly asserted. Nonetheless, Home Depot addresses claim 9 in these contentions.

with respect to the asserted claims, Defendants reserve the right to supplement their Invalidity Contentions to assert invalidity of those additional claims and/or to assert invalidity based on the additional infringement theories. Defendants also reserve the right to supplement their Invalidity Contentions in response to information learned in fact or expert discovery, including identification of additional prior art.

II. RESERVATIONS OF RIGHTS

Defendants reserve their right to amend, modify, and/or supplement this disclosure and their Invalidity Contentions. Specifically, Defendants reserve the right to amend based upon the Court's claim construction. Defendants additionally reserve the right to amend their Contentions if Plaintiffs later provide any information that they failed to provide in their Infringement Contentions and/or their accompanying document production, or if Plaintiffs amend or alter their Infringement Contentions in any way. Further, these Invalidity Contentions are based on information obtained by Defendants to date. Discovery in this case is on-going. In particular, fact discovery is not complete, the Asserted Claims have not been construed, and expert discovery has not begun. Defendants intend to seek discovery from Plaintiffs and third parties regarding public use and/or the on-sale bar under AIA 35 U.S.C. § 102, additional prior art under AIA 35 U.S.C. §§ 102 and 103, applicant's failure to comply with 35 U.S.C. §§ 112 and 101, and/or other grounds of invalidity and/or unenforceability. Based on discovery, Defendants may identify additional prior art and invalidity arguments, and the Court's construction of one or more terms from any Asserted Claim may require that Defendants supplement or amend these Contentions. Accordingly, Defendants reserve the right to revise and/or supplement these Contentions as this case proceeds. Moreover, Defendants reserve the right to supplement and/or amend these Contentions based on any findings as to the priority date of the Asserted Claims, and/or positions that Plaintiffs or their expert witnesses may take concerning claim

interpretation, infringement, and/or invalidity issues. In addition, none of these Contentions constitutes an admission concerning the proper construction of the claims or that the claims have been infringed. Moreover, discovery is ongoing and Defendants reserves the right to pursue all other defenses that may be available to them, including but not limited to defenses that the Patents-in-Suit are unenforceable based on inequitable conduct, patent misuse, laches, estoppel, waiver, acquiescence, patent exhaustion, unfair competition, unclean hands, express or implied license, or any other grounds.

Defendants further contend that Plaintiffs appear to be pursuing overly broad constructions of the Asserted Claims in an effort to piece together an infringement claim where none exists and to accuse products that do not practice the claims as properly construed. At the same time, Plaintiffs' Preliminary Infringement Contentions are in many places too general and vague to discern exactly how Plaintiffs contend the Accused Instrumentalities practice each element of the Asserted Claims. June 21, 2025 Letter to Plaintiffs at 1-25. Accordingly, these Invalidity Contentions are not intended to be, and are not, an admission that the Asserted Claims are infringed by any of Defendants' products or technology, that any particular feature or aspect of the Accused Products practices any elements of the Asserted Claims, or that any of Plaintiffs' apparent constructions are supportable or proper. To the extent that any of the prior art references disclose the same functionality or feature of any of the Accused Products, Defendants reserve the right to argue that said feature or functionality does not practice any element of any of the Asserted Claims, and to argue, in the alternative, that if said feature or functionality is found to practice any element of any of the Asserted Claims, then the prior art reference demonstrates that that element is not novel, is obvious, or is not patentable.

Attached hereto as Exhibit Nos. 686-1 to 686-34, 332-1 to 332-30, 597-1 to 597-18, 832-1 to 832-18, 326-1 to 326-23 are representative claim charts that demonstrate how the Asserted Claims are invalid in view of certain prior art. The references cited in the attached claim charts may disclose the limitations of the Asserted Claims expressly and/or inherently. Moreover, the suggested obviousness combinations are in the alternative to Defendants' contentions regarding anticipation. These obviousness combinations should not be construed to suggest that any reference included in any combination is not anticipatory in its own right.

In their Preliminary Infringement Contentions, Plaintiffs purport to provide doctrine of equivalents arguments. Those conclusory statements regarding doctrine of equivalents are insufficient to provide notice as to Plaintiffs' theories of infringement. June 23, 2025 Letter to Plaintiffs at 25-26. Defendants reserve the right to modify, amend, supplement or otherwise alter their Invalidity Contentions in the event Plaintiffs modify, amend, supplement, or clarify their infringement contentions with respect to direct infringement (literal and under the doctrine of equivalents).

Prior art not included in this disclosure, whether known or unknown to Defendants, may become relevant. In particular, Defendants are currently unaware of the extent, if any, to which Plaintiffs will contend that limitations of the Asserted Claims are not disclosed in the prior art that Defendants identified or will contend that any of the identified references do not qualify as prior art under AIA 35 U.S.C. § 102. The identification of any patents and/or patent publications as prior art shall be deemed to refer to the application that was submitted for the same and to include identification of any foreign counterpart patents and applications as well as international applications. To the extent that such an issue arises, Defendants reserve the right to identify additional teachings in the same references or in other references that anticipate or would have

rendered the addition of the allegedly missing limitation to the device or method obvious. Defendants' claim charts submitted as part of these Initial Invalidity Contentions cite to particular teachings and disclosures of the prior art as applied to features of the Asserted Claims. Persons having ordinary skill in the art, however, may view an item of prior art generally in the context of other publications, literature, products, and understanding. Accordingly, the cited portions are only examples, and Defendants reserve the right to rely on uncited portions of the prior art references and on other publications and expert testimony as aids in understanding and interpreting the cited portions, as providing context thereto, and as additional evidence that a claim limitation is known or disclosed. Where Defendants cite to a particular figure in a reference, the citation should be understood to encompass the caption and description of the figure and any text in the reference relating to the figure. Similarly, where Defendants cite to particular text referring to a figure, the citation should be understood to include the figure and caption as well. Where Defendants cite to portions of a reference with respect to an element of a dependent claim, these citations should be understood to include the relevant citations provided in the claim(s) from which that dependent claim depends, and vice versa. Defendants further reserve the right to rely on uncited portions of the prior art references, other publications, and testimony to establish bases for combinations of certain cited references that render the Asserted Claims obvious. Further, for any combination, Defendants reserve the right to rely additionally on information generally known to those skilled in the art and/or common sense.

The references discussed in the claim charts identified above or elsewhere may disclose the elements of the Asserted Claims explicitly and/or inherently, and/or they may be relied upon to show the state of the art in the relevant time frame. Defendants further reserve the right to rely on additional publications, materials, and testimony that are not yet currently identified for

purposes other than as prior art, including but not limited to background, state of the art in the relevant time frame, level of ordinary skill in the art, and motivation to combine. The suggested obviousness combinations below are provided in the alternative to Defendants' anticipation contentions and are not to be construed to suggest that any reference included in the combinations is not by itself anticipatory.

Defendants reserve the right to modify, amend, or supplement these disclosures as additional information becomes available, and as their discovery and investigation proceed.

III. IDENTIFICATION OF PRIOR ART PURSUANT TO P.R. 3-3(A)⁴

Home Depot identifies the following items of prior art that anticipate each asserted claim or render it obvious.

A. The '686 Patent

1. Prior Art Patents and Published Applications

Patent/Publication No.	Country	Filing/Priority Date	Issue/Publication date
5,832,527 ("Kawaguchi '527")	US	Feb. 6, 1996	Nov. 3, 1998
6,029,168 ("Frey '168")	US	Jan. 23, 1998	Feb. 22, 2000
6,353,837 ("Blumenau '837")	US	Jun. 30, 1998	Mar. 5, 2002
6,651,147 ("Burns '147")	US	May 8, 2001	Nov. 18, 2003
6,857,001 ("Hitz '001")	US	June 7, 2002	Feb. 15, 2005
7,076,622 ("Hsu '622")	US	Sept. 30, 2003	July 11, 2006
7,099,900 ("Bromley '900")	US	Sept. 13, 2001	Aug. 29, 2006
7,162,486 ("Patel '486")	US	Sept. 8, 2003	Jan. 9, 2007
7,383,294 ("Tamer '294")	US	July 28, 2005	June 3, 2008
7,430,571 ("Edwards '571")	US	Apr. 30, 2004	Sept. 30, 2008
7,430,585 ("Sibert '585")	US	Sept. 27, 2006	Sept. 30, 2008
7,437,530 ("Rajan '530")	US	Apr. 24, 2003	Oct. 14, 2008
7,546,307 ("Terrell II '307")	US	Sept. 28, 2006	June 9, 2009
7,565,697 ("LeVine '697")	US	Sept. 21, 2001	July 21, 2009
7,752,455 ("Maheshhwari '455")	US	Jan. 25, 2006	July 6, 2010

⁴ To the extent one or more prior art patents or publications are identified in the claim charts attached to this document but are not included in the tables and lists in this section, those prior art patents or publications should also be considered as prior art for their respective Asserted Patents.

Patent/Publication No.	Country	Filing/Priority Date	Issue/Publication date
7,904,686 (“Iyengar ’686”)	US	May 13, 2008	Mar. 8, 2011
8,069,192 (“Rogers ’192”)	US	Dec. 1, 2004	Nov. 29, 2011
8,533,410 (“Corbett ’410”)	US	Mar. 29, 2007	Sept. 10, 2013
2003/0018878 (“Dorward ’878”)	US	July 18, 2002	Jan. 23, 2003
2003/0120938 (“Mullor ’938”)	US	Nov. 21, 2002	June 26, 2003
2004/0153718 (“Shen ’718”)	US	June 11, 2003	Aug. 5, 2004
2004/0221125 (“Ananthanarayanan ’125”)	US	Apr. 29, 2003	Nov. 4, 2004
2004/0268084 (“Longerbeam ’084”)	US	June 30, 2003	Dec. 30, 2004
2005/0013441 (“Klein ’441”)	US	July 14, 2004	Jan. 20, 2005
2005/0240635 (“Kapoor ’635”)	US	June 7, 2005	Oct. 27, 2005
2006/0074922 (“Nishimura ’922”)	US	Nov. 25, 2003	Apr. 6, 2006
2006/0080520 (“Dickenson ’520”)	US	Oct. 7, 2004	Apr. 13, 2006
2006/0089936 (“Chalker ’936”)	US	Oct. 24, 2005	Apr. 27, 2006
2006/0233367 (“Birell ’367”)	US	Feb. 15, 2005	Oct. 19, 2006
2006/0242212 (“Brinkman ’212”)	US	May 8, 2003	Oct. 26, 2006
2007/0028121 (“Hseih ’121”)	US	Jul. 21, 2006	Feb. 1, 2007
2007/0067332 (“Gallagher ’332”)	US	Mar. 14, 2006	Mar. 22, 2007
2007/0106865 (“Moore ’865”)	US	Apr. 20, 2006	May 10, 2007
2007/0136548 (“Mane ’548”)	US	Dec. 13, 2005	June 14, 2007
2007/0250719 (“Lai ’719”)	US	June 18, 2007	Oct. 25, 2007
2008/0022396 (“Kado ’396”)	US	May 25, 2007	Jan. 24, 2008
2008/0034264 (“Kaabouch ’264”)	US	July 12, 2006	Feb. 7, 2008
2009/0006792 (“Federwisch ’792”)	US	June 28, 2007	Jan. 1, 2009

2. Prior Art Non-Patent Publications

Title	Date of Publication	Author(s)	Publisher(s)
The Hadoop Distributed File System: Architecture and Design (“Borthakur 2005”)	2005	Dhruba Borthakur	The Apache Software Foundation
The Hadoop Distributed File System: Architecture and Design (“Borthakur 2007”)	2007	Dhruba Borthakur	The Apache Software Foundation

Title	Date of Publication	Author(s)	Publisher(s)
Efficient Management for Large-Scale Flash-Memory Storage Systems with Resource Conservation (Vol. 1, No. 4, Pages 381-418) ("Chang 2005")	Nov. 2005	Li-Pin Chang, Tei-Wei Kuo	ACM Translations on Storage
System Software for Flash Memory: A Survey (Pages 394-404) ("Chung 2006")	2006	Tae-Sun Chung, Dong-Joo Park, Sangwon Park, Dong-Ho Lee, Sang-Won Lee, Ha-Joo Song	IFIP International Federation for Information Processing,
Wide-area Cooperative Storage with CFS ("Dabek 2001")	2001	Frank Dabek, M. Frans Kaashoek, David Karger, Robert Morris, Ion Stoica	ACM ISBN
The Logical Disk: A New Approach to Improving File Systems ("De Jonge 1993")	1993	Wiebren de Jonge, M. Frans Kaashoek, Wilson C. Hsieh	ACM
Algorithms and Data Structures for Flash Memories (Vol. 37, No. 2, Pages 138-163) ("Gal 2005")	June 2005	Eran Gal, Sivan Toledo	ACM Computing Surveys
A Superblock-based Flash Translation Layer for NAND Flash Memory ("Kang 2006")	Oct. 2006	Jeong-Uk Kang, Heeseung Jo, Jin-Soo Kim, Joonwon Lee	ACM
A Space-Efficient Flash Translation Layer for CompactFlash Systems (Vo. 48, No. 2) ("Kim 2002")	May 2002	Jesung Kim, Jong Min Kim, Sam H. Noh, Sang Lyul Min, Yookun Cho	IEEE Transactions on Consumer Electronics
Hashing Directory Scheme for NAND Flash File System ("Lim 2007")	Feb. 2007	Seung-Ho Lim, Chul Lee, Kyu-Ho Park	Computer Engineering Research Laboratory Department of Electrical Engineering and Computer Science Korea Advanced Institute of Science and Technology, Daejeon Korea

Title	Date of Publication	Author(s)	Publisher(s)
Building Secure File Systems Out of Byzantine Storage (“Mazieres 2002”)	2002	David Mazieres, Dennis Shasha	ACM
Conference: FAST: File and Storage Technologies – Fast’05: Proceedings of the 4 th conference on USENIX Conference on File and Storage Technologies – Volume 4 (“Peterson 2005”)	Dec. 13, 2005	Zachary N.J. Peterson, Randal Burns, Joe Herring, Adam Stubblefield, Aviel D. Rubin	USENIX Association
Improving Storage System Availability With D-GRAID (Vol. 1, Pages 133-170) (“Sivanthanu 2005”)	May 2005	Muthian Sivathanu, Vijayan Prabhakaran, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau	ACM Transactions on Storage
Chord: A Scalable Peer-to-Peer Lookup Protocol for Internet Applications (“Stoica 2003”)	Feb. 2003	Ion Stoica, Robert Morris, David Liben-Nowell, David R. Karger, M. Frans Kaashoek, Frank Dabek, Hari Balakrishnan	IEEE/ACM Transactions on Networking
Improving Query I/O Performance by Permuting and Refining Block Request Sequences (“Wang 2006”)	2006	Xiaoyu Wang, Mitch Cherniack	ACM
Ceph: A Scalable, High-Performance Distributed File System (“Weil 2006”)	Nov. 2006	Sage A. Weil, Scott A. Brandt, Ethan L. Miller, Darrell D. E. Long, Carlos Maltzahn	USENIX Association
An Adaptive Two-Level Management for the Flash Translation Layer in Embedded Systems (“Wu 2006”)	Nov. 2006	Chin-Hsien Wu, Tei-Wei Kuo	ACM
The LFS Storage Manager (“Mendel 1991”)	May 1, 1991	Mendel Rosenblum, John K. Ousterhout	University of California

B. Prior Art Offered for Sale and/or Publicly Used or Known

Item Offered for Sale or Publicly Used or the Information Known	Date the Offer or Use Took Place or the Information Became Known	Identity of the Person or Entity Which Made the Use or Which Made and Received the Offer, or the Person or Entity Which Made the Information Known or to Whom It Was Made Known
Hadoop Distributed Fileshare System (HDFS)	2006	Apache Software Foundation
EXT2	1993	R��my Card
EXT3	2001	Stephen Tweedie
Linear Congruential Generator, a Pseudo Random Number Generator	At least 1951	Derrick Henry Lehmer
UNIX	At least 1973	Ken Thompson, Dennis Ritchie, Brian Kernighan, Douglas McIlroy, Joy Ossanna, Bell Labs
Logical Disk	At least 1993	Wiebren de Jonge, M. Frans Kaashoek, and Wilson C. Hsieh
SUNDR	At least 2002	Jinyuan Li, Maxwell Krohn, David Mazieres, Dennis Shasha
LFS Storage Manager	At least 1990	Mendel Rosenblum, John K. Ousterhout
D-GRAID	At least 2005	Muthian Sivathanu, Viajayan Prabhakaran, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau
Cooperative File System (CFS)_	At least 2001	Frank Dabek, M. Frans Kaashoek, David Karger, Robert Morris, Ion Stoica
DHash	At least 2001	Frank Dabek, M. Frans Kaashoek, David Karger, Robert Morris, Ion Stoica
Chord	At least 2003	Ion Stoica, Robert Morris, David Liben-Nowell, David R. Karger, M. Frans Kaashoek, Frank Dabek, and Hari Balkrishan
Ceph	At least 2006	Sage A. Weil, Scott A. Brandt, Ethan L. Miller, Darrell D. E. Long, Carlos Maltzahn
AFTL	At least 2006	Chin-Hsien Wu, Tei-Wei Kuo

Item Offered for Sale or Publicly Used or the Information Known	Date the Offer or Use Took Place or the Information Became Known	Identity of the Person or Entity Which Made the Use or Which Made and Received the Offer, or the Person or Entity Which Made the Information Known or to Whom It Was Made Known
VMWare Workstation	At least 1999	Broadcom Inc. and/or its subsidiaries
Bochs	At least 1994	The Bochs Project
Virtual Box	At least January 2007	Oracle Corporation

C. The '332 Patent

1. Prior Art Patents and Published Applications

Patent/Publication No.	Country	Filing/Priority Date	Issue/Publication date
5,999,740 ("Rowley '740")	US	Sep. 29, 1997	Dec. 7, 1999
6,123,737 ("Sadowsky '737")	US	May 21, 1997	Sep.26, 2000
7,370,322 ("Matena '332")	US	Apr. 11, 2001	May 6, 2008
7,861,243 ("Narayanaswamy '243")	US	Feb. 20, 2004	Dec. 28, 2010
2002/0100035 (Kenyon '035)	US	Jan. 23. 2001	Jul. 25, 2002
2003/015894 ("Ichikawa '894")	JP	Jun. 28, 2001	Jan. 17, 2003
2003/0066065 ("Larkin '065")	US	Oct. 2, 2001	Apr. 3, 2003
2003/0074426 ("Dervin '426")	US	Oct. 11, 2001	Apr. 17, 2003
2004/0122937 ("Huang '937")	US	Dec. 18, 2002	Jun. 24, 2004
2004/0148184 ("Sadiq '184")	US	Jan. 23, 2003	Jul. 29, 2004
2004/0177352 ("Narayanaswamy '352")	US	Mar. 3, 2003	Sep. 9, 2004
2004/0177358 ("Narayanaswamy '358")	US	Mar. 3, 2003	Sep. 9, 2004
2004/0210888 ("Bergen '888")	US	Apr. 18, 2003	Oct. 21, 2004
2004/0024853 ("Cates '853")	US	Jun. 17,2002	Feb. 5, 2004

2005/0138618 (“Gebhart ’618”)	US	Dec. 17, 2003	Jun. 23, 2005
2005/0027846 (“Wolfe ’846”)	US	Apr. 24, 2003	Feb. 3, 2005
2006/0026591 (“Backhouse ’591”)	US	Aug. 2, 2004	Feb. 2, 2006
2006/089411 (“Chevette ’411”)	WO	Feb. 22, 2005	Aug. 31, 2006
2007/0100957 (“Bhogal ’957”)	US	Oct. 13, 2005	May 3, 2007
2009/0007098 (“Chevette ’098”)	US	Fed. 21, 2006	Jan. 1, 2009

2. Prior Art Non-Patent Publications

Title	Date of Publication	Author(s)	Publisher(s)
A Web-Services-Based Deployment Framework In Grid Computing Environment (“Web Services in Grid”)	May 2, 2002	Zongwei Luo et. al	IBM Research Division
Altiris Agent 6.1 SP1 For Unix, Linux & Mac Product Guide (“Altiris”)	December 13, 2005	Altiris	Altiris
Altiris Patch Management Solution 6.1 For Windows Help (“Altiris”)	March 25, 2005	Altiris	Altiris
CROWN Node Server: An Enhanced Grid Service Container Based on GT4 WSRF Core (“CROWN”)	2006	Hailong Sun et al.	IEEE
Deployment Guide Series IBM Tivoli Provisioning Manager Express V4.1 for Software Distribution (“Tivoli”)	May 2006	Vasfi Gucer et al.	IBM / Redbooks
Design and implementation of an enterprise grid (“Enterprise Grid”)	2004	D. S. Meliksetian et al.	IBM
Hot Service Deployment in an Ad Hoc Grid Environment (“Hot Service”)	Nov. 2004	Thomas Friese et al.	ACM
Opsware Server Automation System 6 (“Opsware”)	Aug. 1, 2006	Opsware	Opsware

Title	Date of Publication	Author(s)	Publisher(s)
Opsware System 4.0 Solutions Guide (“Opsware”)	2004	Opsware	Opsware
Patching Windows Environments Using Microsoft Software Update Services (SUS) (“MS Update”)	February 19, 2003	Ihaab Dais	SANS Institute, 2003
Patchlink Update™ v6.2 User Guide (“Patchlink”)	2005	Patchlink	Patchlink
WebSphere Application Server V6 System Management and Configuration Handbook (“WebSphere”)	February 2005	Carla Sadtler et al.	IBM / Redbooks

3. Prior Art Offered for Sale and/or Publicly Used or Known

Item Offered for Sale or Publicly Used or the Information Known	Date the Offer or Use Took Place or the Information Became Known	Identity of the Person or Entity Which Made the Use or Which Made and Received the Offer, or the Person or Entity Which Made the Information Known or to Whom It Was Made Known
Altiris Agent / Patch Management Solution (“Altiris”)	2005	Altiris
CROWN Node Server (“CROWN”)	2006	Hailong Sun, Wantao Liu, Tianyu Wo, and Chunming Hu
intraGrid	2004	IBM
Microsoft Software Update Services (“MS Update”)	2002	Microsoft
Opsware System / Server Automation System (“Opsware”)	2004	Opsware
Patchlink Update (“Patchlink”)	2005	Patchlink
Tivoli Provisioning Manager (“Tivoli”)	2006	IBM
WebSphere Application Server (“WebSphere”)	2005	IBM

D. The '597 Patent

1. Prior Art Patents and Published Applications

Patent/Publication No.	Country	Filing/Priority Date	Issue/Publication date
H2065 (“Hong ’065”)	US	Dec. 28, 1998	May 6, 2003
6,006,264 (“Colby ’264”)	US	Aug. 1, 1997	Dec. 21, 1999
6,067,545 (“Wolff ’545”)	US	Aug. 2, 1996	May 23, 2000
6,070,192 (“Holt ’192”)	US	May 30, 1997	May 30, 2000
6,108,337 (“Sherman ’337”)	US	Jan. 7, 1998	Aug. 22, 2000
6,154,839 (“Arrow ’849”)	US	Apr. 23, 1998	Nov. 28, 2000
6,249,801 (“Zisapel ’801”)	US	Jul. 15, 1998	Jun. 19, 2001
6,345,041 (“Kimball ’041”)	US	Oct. 24, 1996	Fed. 5, 2002
6,389,448 (“Primak ’448”)	US	Dec. 6, 1999	May 14, 2002
6,466,986 (“Sawyer ’986”)	US	Dec. 30, 1999	Oct. 15, 2002
6,546,423 (“Dutta ’423”)	US	Oct. 22, 1998	Apr. 8, 2003
6,560,630 (“Vepa ’630”)	US	Mar. 18, 1999	May 6, 2003
6,578,068 (“Bowman-Amuah ’068”)	US	Aug. 31, 1999	Jun. 10, 2003
6,603,758 (“Schmuelling ’758”)	US	Oct. 1, 1999	Aug. 5, 2003
6,687,735 (“Logston ’735”)	US	May 30, 2000	Feb. 3, 2004
6,765,925 (“Sawyer ’925”)	US	Sep. 28, 2000	Jul. 20, 2004
6,892,229 (“Karadogan ’229”)	US	Sep. 30, 1998	May 10, 2005
6,970,913 (“Albert ’913”)	US	Jul. 2, 1999	Nov. 29, 2005
6,976,066 (“Mouhanna ’066”)	US	May 22, 2000	Dec. 13, 2005
7,062,571 (“Dale ’571”)	US	Jun. 30, 2000	Jun. 13, 2006
7,739,398 (“Shabtay ’398”)	US	Nov. 21, 2000	Jun. 15, 2010
2002/0099854 (“Jorgensen ’854”)	US	Jul. 10, 1998	Jul. 25, 2002

2. Prior Art Non-Patent Publications

Title	Date of Publication	Author(s)	Publisher(s)
Addition of Device Class to Agent Options (“Jones 2000”)	Nov. 2000	D. Jones et al.	Internet Engineering Task Force
DHC load balancing algorithm (“Volz 2000”)	June 2000	Bernie Volz et al.	Internet Engineering Task Force
DHCP Relay Agent Information Option (“Patrick 2000”)	July 13, 2000	Michael Patrick	Internet Engineering Task Force
Differentiated Services over Cable Networks (“Golmie 1999”)	1999	Nuda Golmie et al.	Global Telecommunications

Title	Date of Publication	Author(s)	Publisher(s)
			Conference - Globecom'99
DOCSIS 1.1 (“DOCSIS”)	1999	Cable Television Laboratories, Inc.	Cable Television Laboratories, Inc.
IBM WebSphere Performance Pack: Load Balancing with IBM SecureWay Network Dispatcher (“WebSphere”)	October 1999	Marco Pistoia et al.	IBM
IP Over Cable Data Network Service (“Ahmed 1996”)	October 1, 1996	Masuma Ahmed et al.	Internet Engineering Task Force
MAC Architecture for Broadband Satellite Access Systems (“Elshabrawy 2000”)	April 2000	Tallal O. Elshabrawy	Bell & Howell Information and Learning
Policy-Based Network Load Management (“Hossain 1999”)	1999	Ashfaq Hossain et al.	Lucent Technologies Inc.
QoS Support for Integrated Services over CATV (“Rabbat 1999”)	1999	Richard Rabbat et al.	IEEE
The CHOICE Network: Broadband Wireless Internet Access In Public Places (“CHOICE”)	February 2000	Victor Bahl et al.	Microsoft Research
The CHOICE Network: Dynamic Host Configuration for Managing Mobility between Public and Private Networks (“CHOICE”)	August 2000	Allen Miu et al.	Microsoft Research
The Cisco Content Delivery Network Solution for the Enterprise (“Cisco Content Delivery Network”)	2000	Cisco Systems	Cisco Systems

3. Prior Art Offered for Sale and/or Publicly Used or Known

Item Offered for Sale or Publicly Used or the Information Known	Date the Offer or Use Took Place or the Information Became Known	Identity of the Person or Entity Which Made the Use or Which Made and Received the Offer, or the Person or Entity Which Made the Information Known or to Whom It Was Made Known
Cisco Content Delivery Network	2000	Cisco Systems
IBM WebSphere ("WebSphere")	1999	IBM
Lucent's Cajun P550 Gigabit Routing Switch for Gigabit Ethernet ("Lucent Cajun")	1999	Lucent Technologies Inc.
The CHOICE Network ("CHOICE")	2000	Microsoft Corporation

E. The '832 Patent

1. Prior Art Patents and Published Applications

Patent/Publication No.	Country	Filing/Priority Date	Issue/Publication date
5,142,670 ("Stone '670")	US	July 26, 1988	Aug. 25, 1992
5,287,363 ("Wolf '363")	US	July 1, 1991	Feb. 15, 1994
5,367,473 ("Chu '473")	US	Nov. 26, 1991	Nov. 22, 1994
5,506,955 ("Chen '955")	US	Dec. 1, 1994	Apr. 9, 1996
5,566,317 ("Treiber '317")	US	June 14, 1994	Oct. 15, 1996
5,684,945 ("Chen '945")	US	Apr. 16, 1996	Nov. 4, 1997
5,802,069 ("Coulson '069")	US	Mar. 28, 1996	Sept. 1, 1998
5,802,593 ("Grimsrud '593")	US	Sept. 6, 1996	Sept. 1, 1998
5,809,303 ("Senator '303")	US	Oct. 18, 1995	Sept. 15, 1998
5,832,515 ("Ledain '515")	US	Sept. 12, 1996	Nov. 3, 1998
5,859,823 ("Yamamuro '823")	US	Mar. 24, 1997	Jan. 12, 1999
5,956,750 ("Yamamoto '750")	US	Apr. 4, 1997	Sept. 21, 1999
6,035,306 ("Lowenthal '306")	US	Nov. 24, 1997	Mar. 7, 2000
6,101,619 ("Shin '619")	US	Dec. 31, 1997	Aug. 8, 2000
6,223,252 ("Bandera '252")	US	May 4, 1998	Apr. 24, 2001
6,249,887 ("Gray '887")	US	Sept. 21, 1998	June 19, 2001
6,289,484 ("Rothberg '484")	US	May 19, 1999	Sept. 11, 2001
6,324,620 ("Christenson '620")	US	July 23, 1998	Nov. 27, 2001

Patent/Publication No.	Country	Filing/Priority Date	Issue/Publication date
6,327,106 (“Rothberg ’106”)	US	Aug. 21, 1998	Dec. 4, 2001
6,341,317 (“D’Errico ’317”)	US	Dec. 30, 1998	Jan. 22, 2002
6,401,214 (“Li ’214”)	US	Mar. 4, 1999	June 4, 2002
6,408,406 (“Parris ’406”)	US	Aug. 31, 1999	June 18, 2002
6,412,089 (“Lenny ’089”)	US	Feb. 26, 1999	June 25, 2002
6,460,151 (“Warwick ’151”)	US	July 26, 1999	Oct. 1, 2002
6,571,257 (“Duggan ’257”)	US	June 7, 2000	May 27, 2003
6,571,354 (“Parks ’354”)	US	Dec. 15, 1999	May 27, 2003
2002/0184580 (“Archibald ’580”)	US	June 1, 2001	Dec. 5, 2002
WO 99/23562 (“Mahmoud ’562”)		Nov. 3, 1997	May 14, 1999

2. Prior Art Non-Patent Publications

Title	Date of Publication	Author(s)	Publisher(s)
Adaptive Prefetching and Storage Reorganization in A Log-Structured Storage System (“Chee 1998”)	Sept. 1998	Chye Lin Chee, Hongjun Lu, Hong Tang, C.V. Ramamoorthy	IEEE Transactions on Knowledge and Data Engineering
Informatica – An International Journal of Computing and Informatics; Special Issue: Database, Web and Cooperative Systems (Volume 24, Number 1) (“Akiyama 2000”)	Mar. 2000	Toyokazu Akiyama, Takahiro Hara, Kaname Harumoto, Masahiko Tsukamoto, Shojiro Nishio	The Slovene Society Informatika
Experimental Evaluation of Dynamic Data Allocation Strategies in a Distributed Database with Changing Workloads (“Brunstrom 1995”)	1995	Anna Brunstrom, Scott T. Leutenegger, Rahul Simha	ACM
CLUMP: Improving File System Performance Through Adaptive Optimizations (“Eaton 1999”)	Dec. 13, 1999	Patrick R Eaton, Dennis Geels, Greg Mori	Berkeley
Dynamic File Allocation in Disk Arrays (“Weikum 1991”)	1991	Gerhard Weikum, Peter Zabback, Peter Scheuermann	ACM

Title	Date of Publication	Author(s)	Publisher(s)
A System for Adaptive Disk Rearrangement (“Vongsathorn 1990”)	1990	Paul Vongsathorn, Scott D. Carson	John Wiley & Sons, Ltd.
Veritas Volume Manager (VxVM) System Administrator’s Guide (“Veritas VM 1995”)	Apr. 15, 1995		Concurrent Computer Corporation
PCI Storage Device Management System SDMS 4.0 User’s Guide (“PCI User’s Guide 2001”)	Sept. 15, 2001		LSI Logic Corporation
A Methodology for Database System Performance Evaluation (“Boral 2001”)	Jan. 31, 2001	Haran Boral, David J. DeWitt	
Data Lifeguard Online Diagnostics S.M.A.R.T. Test (“Data Lifeguard 2000”)	Sept. 28, 2000		Western Digital Corporation
Efficient, Real-Time Management of Storage Resources, Hewlett-Packard Docket No. 10001649 Patent; Appl. No. 09/589,144 (“Duggan 2000”)	June 7, 2000	Gerald P. Duggan, Ronald E. Poppen-Chambers	Hewlett-Packard
Hard Disk Drives (“Hard Disk 2001”)	Sept. 17, 2001		IBM
Information Brief, Self-Monitoring, Analysis and Reporting Technology (“Information Brief 1998”)	1998		IBM
Making Sure Disk Performance Statistics are Collected (“Making Sure 2000”)	2000		Microsoft
Monitoring Hard Disk Performance (“Monitoring Hard Disk 2001”)	2001		Dublin, Ireland
Seagate Technology White Papers: Playing it S.M.A.R.T. (“Ottem 1995”)	June 1995	Erik Ottem, Judy Plummer	Seagate Technology
Pre-Failure Alerting (“Pre-Failure 2001”)	April 9, 2001		Dell Computer Corporation
S.M.A.R.T. Advanced Drive Diagnostics (“SMART Advanced Drive 1998”)	1998		Quantum
Using the Performance Monitor (“Using the Performance 2000”)	Aug. 7, 2000		Microsoft
Andrew File System (AFS) Administration Guide (“AFS Guide 2000”)	April 2000		International Business Machines Corporation (IBM)

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Item Offered for Sale or Publicly Used or the Information Known	Date the Offer or Use Took Place or the Information Became Known	Identity of the Person or Entity Which Made the Use or Which Made and Received the Offer, or the Person or Entity Which Made the Information Known or to Whom It Was Made Known
SMART (Self-Monitoring, Analysis and Reporting Technology)	At least 1992	International Business Machines Corporation (IBM)
Clump	At least 1999	Patrick R. Eaton, Dannis Geels, Greg Mori
VERITAS Volume Manager (VxVM)	At least 1995	Concurrent Computer Corporation
Andrew File System (OpenAFS)	At least 2000	International Business Machines Corporation (IBM); The OpenAFS Foundation

F. The '326 Patent

1. Prior Art Patents and Published Applications

Patent/Publication No.	Country	Filing/Priority Date	Issue/Publication date
5,978,373 ("Hoff '373")	US	Jul. 11, 1997	Nov. 2, 1999
6,023,464 ("Woundy '464")	US	Dec. 23, 1997	Feb. 8, 2000
6,038,664 ("Schumacher '664")	US	Jun. 10, 1996	Mar. 14, 2000
6,091,737 ("Hong '737")	US	Nov. 15, 1996	Jul. 18, 2000
6,128,279 ("O'Neil '279")	US	Oct. 6, 1997	Oct. 3, 2000
6,167,445 ("Gai '445")	US	Oct. 26, 1998	Dec. 26, 2000
6,170,008 ("Bahlmann '008")	US	Dec. 7, 1998	Jan. 2, 2001
6,466,986 ("Sawyer '986")	US	Dec. 30, 1999	Oct. 15, 2002
6,587,866 ("Modi '866")	US	Jan. 10, 2000	Jul. 1, 2003
6,598,057 ("Synnestvedt '057")	US	Dec. 22, 1999	Jul. 22, 2003
6,603,758 ("Schmuelling '758")	US	Oct. 1, 1999	Aug. 5, 2003
6,691,165 ("Bruck '165")	US	Nov. 10, 1998	Feb. 10, 2004
6,715,075 ("Loukinov '075")	US	Jul. 8, 1999	Mar. 30, 2004
6,888,797 ("Cao '797")	US	May 5, 1999	May 3, 2005
7,340,532 ("Swildens '532")	US	Mar. 10, 2000	Mar. 4, 2008
8,186,569 ("Ami '569")	JP	Dec. 27, 1994	Jul. 16, 1996

8,713,641 (“Pagan ’641”)	US	Dec. 8, 1998	Apr. 29, 2014
01/19080 (“Novi ’584”)	WO	Sep. 3, 1999	Mar. 15, 2001
96/39769 (“Rodwin ’769”)	WO	Jun. 5, 1995	Dec. 12, 1996
98/26530 (“Patrick ’530”)	WO	Dec. 9, 1996	Jun. 18, 1998
2003/0039237 (“Forslow ’237”)	US	Sep. 25, 1997	Feb. 27, 2003

2. Prior Art Non-Patent Publications

Title	Date of Publication	Author(s)	Publisher(s)
A Framework for the Integration of Legacy Devices into a Jini Management Federation (“Aschemann 1999”)	October 1999	Gerd Aschemann et al.	IEEE
Agent-Based Schemes for Plug-and-Play Network Components (“Bieszczad 1998”)	1998	Andrzej Bieszczad et al.	IATA
Architectures for Broadband Residential IP Services Over CATV Networks (“Hernandez-Valencia 1997”)	1997	Enrique J. Hernandez-Valencia	IEEE
Automated Configuration Of TCP/IP With DHCP (“Droms 1999”)	1999	Ralph Droms	IEEE
Broadband to the Home: A Bell Atlantic Perspective (“McManus 1997”)	1997	Jean McManus et al.	IEEE
Control software for data/HFC systems (“Abe 1996”)	November 1996	George Abe	Society of Photo-Optical Instrumentation Engineers (SPIE)
Data-Over-Cable Interface Specifications	1997	MCNS Holdings	MCNS Holdings
DHCP Relay Agent Information Option (“Patrick 2000”)	July 13, 2000	Michael Patrick	Internet Engineering Task Force
DOCSIS 1.1 (“DOCSIS”)	1999	Cable Television Laboratories, Inc.	Cable Television Laboratories, Inc.
IP/ATM Integrated Services over Broadband Access Copper Technologies (“Azcorra 1999”)	May 1999	Arturo Azcorra et al.	IEEE

1. Prior Art Offered for Sale and/or Publicly Used or Known

Item Offered for Sale or Publicly Used or the Information Known	Date the Offer or Use Took Place or the Information Became Known	Identity of the Person or Entity Which Made the Use or Which Made and Received the Offer, or the Person or Entity Which Made the Information Known or to Whom It Was Made Known
PPP Terminated Aggregation (“PTA”)	1999	Cisco Systems
Universal Subscriber Gateway Device (“Nomadix”)	1999	Nomadix, Inc.

IV. PRIOR ART UNDER 35 U.S.C. §§ 102 AND/OR 103 THAT ANTICIPATES AND/OR RENDERS OBVIOUS THE CLAIMS OF THE ASSERTED PATENT (P.R. 3-3(B))

Each of the Asserted Claims is invalid because it fails to meet one or more requirements for patentability. The individual bases for invalidity, including whether and how each item of prior art anticipates each Asserted Claim or renders it obvious, are provided in the charts identified below pursuant to P.R. 3-3(c).

A. Anticipation

Some or all of the Asserted Claims are invalid as anticipated under 35 U.S.C. § 102 under the prior art references identified above and in the claim charts identified below pursuant to P.R. 3-3(c), which identify specific examples of where each limitation of the Asserted Claims is found in the prior art references. The cited portions of prior art references identified in the attached claim charts are exemplary only and representative of the content and teaching of the prior art references, and should be understood in the context of the reference as a whole and as they would be understood by a person of ordinary skill in the art.

B. Obviousness

Each anticipatory prior art reference, either alone or in combination with other prior art, also renders the asserted claims obvious to one of ordinary skill in the art. To the extent any

limitation is deemed not to be exactly met, either explicitly or inherently, by an item of prior art listed above and in the charts identified below pursuant to P.R. 3-3(c), then any purported differences are such that the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art, as shown in Section IV(D). In particular, each anticipatory prior art reference on its own renders obvious the claimed inventions and also may be combined with (i) information known to persons skilled in the art at the time of the alleged invention and/or (ii) any of the other anticipatory prior art references. The item of prior art would, therefore, render the relevant claims invalid for obviousness under 35 U.S.C. § 103(a).

The Supreme Court clarified the standard for what types of inventions are patentable. *See KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1731 (2007) (“[T]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”). In particular, the Supreme Court emphasized that inventions arising from ordinary innovation, ordinary skill or common sense should not be patentable. *See id.* at 1732, 1738-39, 1742-43, 1746. Because the asserted patents simply combine elements well known in the art in a straightforward fashion to achieve a well-known and obvious result and thus yield no more than one skilled in the art would expect from such combinations, the claims of those patents are obvious. The asserted claims are therefore invalid under 35 U.S.C. § 103 because they do nothing more than combine known techniques and apparatuses according to their known and ordinary uses to yield predictable results.

The Supreme Court further held that “[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars

its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill” *Id.* at 1740. Accordingly, a person of skill in the art would have been motivated to combine or adapt known or familiar methods in the art, especially where market forces prompt such variations.

In view of *KSR*, the United States Patent and Trademark Office issued a set of new Examination Guidelines. See Examination Guidelines for Determining Obviousness Under 35 U.S.C. § 103, 72 Fed. Reg. 57526 (Oct. 10, 2007). These Guidelines identify various rationales under *KSR* for finding a claim obvious at the time of the filing of the application for this patent, including those based on other precedents, including but not limited to:

- (A) Combining prior art elements according to known methods to yield predictable results;
- (B) Simple substitution of one known element for another to obtain predictable results;
- (C) Use of known techniques to improve similar devices (methods, or products) in the same way;
- (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- (E) “Obvious to try” – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art;

(G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. See 72 Fed. Reg. 57529.

These rationales apply in rendering obvious the asserted claims of the asserted patents. Here, the state of the art at the relevant time expressly taught and suggested using application virtualization to allow for multiple application/operating system images to co-exist on a single compute platform. Further, the state of the art at the relevant time expressly taught and suggested utilizing shared libraries to allow computing systems to efficiently run multiple software applications without conflicts or performance issues. As a result, one skilled in the art would have known to combine or modify references that described known systems and methods which one of skill in the art would have recognized as offering improvements to solutions at that time. Each of the prior art references identified herein described systems and methods that were known to offer such improvements, and, accordingly, one of skill in the art would have been motivated to combine or modify the references as described herein.

In light of the various reasons to combine discussed in detail below, invalidity under 35 U.S.C. § 103 can be based on one or more references disclosed herein. If and to the extent Plaintiffs argue that one or more of these references, combined with the knowledge of persons of ordinary skill in the art at the relevant time, fails to disclose one or more specific elements of an asserted claim, Home Depot reserves the right to rely on the combination of one or more of the references disclosed herein, with one or more other references disclosed herein. Further, to the extent Plaintiffs argue that claim elements that are not disclosed in the specifications of the asserted patents and/or related applications were enabled, Home Depot reserves the right to rely on the

combination of one or more of the references disclosed herein with one or more other references disclosed herein.

Reasons exist to combine one or more of the references included in these Invalidity Contentions with each other. Generally, reasons to combine any of these references with others exist within the references themselves, as well as within the knowledge of those of ordinary skill in the art at the relevant time. For example, many of these references identify and address the same issues and suggest very similar solutions to those issues in the field of systems for application virtualization and resource sharing in multi-application environments. If and to the extent that Plaintiffs challenge the correspondence of any of these references with respect to particular elements of the Asserted Claims, Home Depot reserves the right to supplement these Invalidity Contentions to identify additional motivations to combine particular references with one another to the extent necessary. Home Depot may rely upon a subset of the references or all of the references, depending upon further investigation. Home Depot's contentions that the references in this section, in various combinations, render the Asserted Claims obvious under 35 U.S.C. § 103 are in no way an admission or suggestion that each reference does not independently anticipate the Asserted Claims under 35 U.S.C. § 102. Any of the references disclosed herein may be combined with other references disclosed herein to render obvious, and therefore invalid, each of the Asserted Claims.

With respect to the prior art references disclosed in the attached exhibits, a person of ordinary skill in the art would have been motivated to combine any of them for a number of reasons, including the reasons set forth in the attached exhibits and/or as described herein.

C. Secondary Considerations of Non-Obviousness

Plaintiffs have failed to present any facts supporting secondary considerations of non-obviousness for the Asserted Patents, such as evidence of commercial success, long-felt but

unsolved needs, failure of others, industry praise, or unexpected results. There are no secondary considerations of non-obviousness evidencing the validity of any of the Asserted Claims. Secondary considerations of non-obviousness, also referred to as objective indicia of non-obviousness, “can include copying, long felt but unsolved need, failure of others, commercial success, unexpected results created by the claimed invention, unexpected properties of the claimed invention, licenses showing industry respect for the invention, awards or other industry praise for the invention, and skepticism of skilled artisans before the invention.” *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 711 F.3d 1348, 1368 (Fed. Cir. 2013). “A nexus between the merits of the claimed invention and evidence of secondary considerations is required in order for the evidence to be given substantial weight in an obviousness decision.” *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 668 (Fed. Cir. 2000). Moreover, even if a nexus exists, secondary considerations of non-obviousness “simply cannot overcome [a] strong prima facie showing of obviousness.” *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1368 (Fed. Cir. 2008). Plaintiffs have not asserted, nor established, the existence of any objective indicia of non-obviousness or secondary considerations related to the Asserted Claims. Defendants reserve the right to supplement their contentions to respond to any such evidence should Plaintiffs be permitted to raise them in the future. While discovery in this case is ongoing, and Defendants’ investigation continues (which will include expert discovery), to the extent Plaintiffs contend that one or more asserted claims are not obvious based on secondary considerations recognized by relevant authority, Defendants contend such allegations are without merit.

For example, there is no evidence of copying of the purported inventions of the Asserted Claims. Similarly, there is no evidence of any failure of others to realize any purported inventions of the asserted claims, or any evidence of any long-felt but unsolved need solved by the purported

inventions of the asserted claims. Plaintiffs also have not identified any evidence that the purported inventions of the asserted claims have enjoyed any commercial success. To the extent that Plaintiffs claim that sales of any products that practice the Asserted Claims constitute commercial success, Plaintiffs have not identified any evidence of any nexus between the claimed invention and such alleged commercial success. There is also no evidence of unexpected results or unexpected properties in the purported inventions of the Asserted Claims. There is no evidence of any licenses showing industry respect for the purported inventions of the asserted claims, and also no evidence of any awards or other industry praise for any purported inventions of the asserted claims. There is no evidence of any skepticism of skilled artisans prior to purported inventions of the Asserted Claims; to the contrary, the prior art identified herein establishes not only a lack of skepticism but an appreciation that the purported inventions of the asserted claims were known to those of skill in the art. Finally, Plaintiffs are required to show a nexus between any secondary consideration and the claimed features of the asserted claims that is unknown in the art. As established herein, the Asserted Claims do not include any novel elements, but are at best an obvious combination of preexisting, well-known elements associated with online advertising, precluding any showing of a nexus between a secondary consideration and the Asserted Claims.

D. Invalidity Rationale Regarding the Asserted Patents

1. '686 Patent

The '686 patent is purportedly directed to “an apparatus and method for providing data security for use with a file system.” '686 patent, Abstract. The steps performed include: “applying a mapping function to data block numbers that are associated with a file; and obtaining mapped data block numbers after applying the mapping function, wherein the mapped data block numbers are addresses of data of the file in a storage device.” *Id.*

The '686 patent acknowledges that it is understood that an operating system (OS) includes “known modules for performing OS management operations.” '686 patent, 2:6-7. And further, that a virtual file system, like its file systems 110, “is typically included in an operating system kernel layer [which] allows client applications ... to transparently access the different types of files systems 110 (e.g., Unix file systems, Windows® file systems, Mac® OS file systems) that may be implemented in kernel 102.” *Id.* at 2:7-12.

The '686 patent further discloses:

As known to those skilled in the art, an inode (index node) is a data structure that contains information about a file, directory, or other object in a file system. The file can be, for example, a software application, or other types of data such as a WORD® document. The inode data structure is used in, for example, a Unix file system or other types of file systems.

Id. at 2:15- 20. Further, the '686 patent acknowledges that aspects of its alleged invention can be implemented in software by using “standard programming languages (e.g., C, C++, Pascal) and can be programmed by use of standard programming techniques that are known to those skilled in the art.” *Id.* at 2:66-3:1.

It would have at least been obvious to a POSITA to combine the teachings of any of the references identified in III.A.1 with one another and/or the knowledge of a POSITA. Each of these references is analogous to the '686 patent as each is directed to mapping data in, and/or providing data security for use with a file system. For example:⁵

- Lai '719 is directed to “a data protecting method and apparatus for protecting digital information, which can prevent unauthorized access to digital information. Lai '719, ¶3. Lai '719 also teaches file storage mapping techniques using a mapping table. *Id.*, ¶¶32-35.

⁵ These citations are merely exemplary. Defendants reserve the right to rely on any teachings disclosed in the references charted.

- Ananthanarayanan '125 is directed “generally to filesystem data management within a computer environment[.]” Ananthanarayanan '125, ¶1.
- Corbett '410 is directed “to file systems and, more specifically, to maintenance of snapshot and active file system metadata in an on-disk structure of a file system.” Corbett '410, 1:16-18. Corbett '410 further discloses that each file in its file system “has a hierarchal tree structure of metadata (indirect blocks) that is rooted at an inode 410 from an entry 322 of the inode table 320.” *Id.*, 7:49-67.
- Hsieh '121 is directed to “a method of protecting confidential data using a non-sequential hidden bock mechanism[.]” Hsieh '121, Abstract.
- Frey '168 is directed “generally to file systems in a distributed computing environment and, in particular, to a method of decentralized control of the mapping of filed to disk space striped across shared networked storage units....” Frey '168, Abstract.
- Klein '441 is directed “generally to the protection of stored data in a remote and unsafe location,” and more specifically, “a method for securing data by performing block level encryption” that further includes a mapping function. Klein '441, ¶¶2, 10, 15.
- Patel '486 “relates to file systems and ... to a system and method for representing named data streams within an on-disk structure of a file system.” Patel '486, 1:20-22.
- Weil 2006 is directed to “a distributed file system.” Abstract a pg. 306.
- Kado '396 is directed to “a memory data protection device capable of protecting security data.” Kado '396, ¶9.
- Kapoor '635 is directed to “methods and systems of snapshot management of a file system in a data storage system” which involves, in part, “maintaining an index table that contains an entry for ... the active file system.” Kappor '635, Abstract, ¶10.
- LeVine '697 is directed to “the field of protecting digital information from being copied, modified, or used by unauthorized parties.” LeVine '697, 1:18–26. LeVine '697 is further directed to “a system and method for storing encrypted data” in a data storage location “chosen by a mapping process.” *See id.*, 2:39-3:3.
- Longerbeam '084 is directed to “computing systems protecting filesystem data from corruption by errant writes in an operating system or kernel.” Longerbeam '084, ¶1.
- Bluemenau '837 is directed “generally to the storage of data in mass storage systems, and in particular the ability to access data in mass storage system from different facilities using different, and often incompatible, filesystem formats.” Bluemenau '837, 1:7–10. Bleamenau also discloses an “INODE, in one particular embodiment, [which] can include ... the nature of protection for the file....” *Id.*, 3:19–41.
- Brinkmann '212 is directed to “a method and an arrangement for randomly storing data on storage networks and/or an intranet and/or the Internet as well as a suitable computer program product and a suitable computer readable storage medium” Brinkmann '212, ¶1.
- Bromley '900 is directed to, in part, “mapping logical files to application host disks in data backup systems.” Bromley '900, 1:16–19.

- Chalker '936 is directed “generally to computers and computer security.” Chalker '936, ¶1.
- Chung 2006 is directed to “using the logical to physical address mapping table” to protect blocks from being erased per overwrite. *See* Chung 394-395.
- Dorward '878 is directed “generally to data storage techniques, and more particularly to data storage techniques that are suitable for use in managing archival data in a network storage system.” Dorward '878, ¶1.
- Edwards '571 is directed to “file systems, and more specifically, to write allocation in a write anywhere file system.” Edwards '571, 1:14–16.
- Federwisch '792 is directed to “computer data storage operations” and more specifically, “rapidly identifying data blocks that have changed between two storage system states.” Federwisch '792, ¶1.
- Ghallager '332 is directed “generally to file storage systems. More particularly, the present invention relates to a distributed file storage system with the ability to implement user access control.” Ghallager '332, ¶2.
- Hitz '001 is directed to “[m]aintenance of plural active file systems, wherein each of the active file systems initially access data shared with another of the active file systems, and wherein changes made to each of the active file systems are not reflected in other active file systems.” Hitz '001, Abstract.
- Mane '548 is directed “generally to computer data storage, and more particularly to the organization and use of files, volumes, and file systems.” Mane '548, ¶1.
- Mazieres 2002 is directed to “implement[ing] a trusted network file system on an untrusted server.” Mazieres 2002, Abstract at pg. 107.
- Nishimura '922 is directed to “a file management device that manages file access to a plurality of storage devices with different storage media, storage methods, access speeds and storage capacities, and in particular to a technique for maintaining the security by restricting the file access.” Nishimura '922, ¶1.
- Peterson 2005 is directed to, “federally compliant storage; it is designed to eliminate data after a mandatory retention period.” Peterson 2005, 143. It further teaches, “two methods for secure deletion that use a combination of authenticated encryption and secure overwriting.” *Id.*
- Rajan '520 is directed to, “storage systems and, in particular, to mapping file block numbers to logical block addresses.” Rajan '520, 1:7-9
- Rosenblum 1990 is directed to a storage manager, specifically a “log-structured file system.” Rosenblum 1990, 1
- Shen '718 is directed to, “computer systems. More particularly, the present invention relates to systems and methods for preserving prior states of protected memory to which computer systems can be restored.” Shen '718, ¶2

- Sibert '585 is directed to, “systems and methods for information and data processing. More specifically, the present invention relates to systems and methods for creating and operating a secure processing unit and/or a secure processing environment.” Sibert '585, 1:25-29.
- Tamer '294 is directed to, “data storage systems. More particularly, the present invention is directed to a method and apparatus for manipulating logical objects in a data storage system.” Tamer '294, 1:15-18; *see also id.*, 6:64-7:4.
- Stoica 2003 is directed to the Chord protocol, a peer-to-peer system which performs the operation, “given a key it maps the key onto a node.” Stoica 2003, 17. It further teaches “a distributed public key database for secure name resolution.” *Id.* at 18.
- Wu 2006 is directed to, “flash-memory storage systems,” specifically to “provide good performance in address mapping and space utilization.” Wu 2006, 601.
- Moore '865 is directed to, “a method for writing a logical block into a storage pool.” Moore '865, ¶10. Moore '865 also teaches that, “the invention relates to a computer readable medium.” *Id.* at ¶11.
- Kaabouch '264 is directed to “protection of data in computer systems.” Kaabouch '264, ¶17.
- Kawaguchi '527 is directed to, “a file management system that improves disk space efficiency and simplifies file management.” Kawaguchi '527, 1:51-53. It is also directed to managing “security data.” *Id.* at 2:40.
- Burns '147 is directed to, “electronic storage space for data storage.” Burns '147, 1:7-8.
- Hsu '622 is directed to, “data storage within a storage area network, and more particularly to a read/write object storage system that manages data storage based on the information content across data blocks within the system.” Hsu '622, 1:8-11.
- Terrell, II '307 is directed to, “a system to map block-level accesses in a virtual file system to the storage media in an actual physical file system.” Terrell '307, 2:29-30. It further teaches, “providing security is often a concern in modern data storage systems and the inventive filesystem translator **100** can handle this as well.” *Id.* at 5:8-10.
- Maheshwari '455 is directed to, “systems and methods for securing electronic data for storage in potentially untrusted environments.” Maheshwari '455, 1:25-27.
- Rogers '192 is directed to, “computing devices in general, but especially to a computing device with a relatively limited storage space.” Rogers '192, 1:14-16. It also teaches, “a computing device and the operating/file system thereof, and especially with regard to performing file system operations in a relatively safe and efficient manner.” Rogers '192, 1:20-23.
- Chang 2005 is directed to, “how to efficiently translate logical addresses into flash-memory (physical) addresses.” Chang 2005, 382.
- Gal 2005 is directed to, “sophisticated data structures and algorithms [that] are required to effectively use flash memories.” Gal 2005, 138.

- Dabek 2001 is directed to a “a new peer-to-peer read-only storage system that provides provable guarantees for the efficiency, robustness, and load-balance of file storage and retrieval.” Dabek 2001, 202. It additionally teaches that, “CRS provides simple but protection against a single attacker.” *Id.* at 214.
- De Jonge 1993 is directed to, “a new interface to disk storage that separates file management and disk management by using logical block numbers and block lists.” De Jonge 1993, 15.
- Kang 2006 is directed to “NAND flash-based storage systems,” specifically, “a novel superblock-based FTL [flash translation layer] scheme, which combines a set of adjacent logical blocks into a superblock.” Kang 2006, 161.
- Kim 2002 is directed to flash memory, specifically “a novel FTL [flash translation layer] design that combines the two different granularities is address translation.” Kim 2002, 366.
- Lim 2007 is directed to, “an efficient metadata management scheme of flash file system for giga scale flash memory. Specifically, we design the hashing directory structure for directory management, and two level index structure for file index management.” Lim 2007, 273.
- Sivathanu 2005 is directed to, “D-GRAID, a gracefully degrading and quickly recovering RAID storage system. D-GRAID ensures that most files within the file system remain available even when an unexpectedly high number of faults occur.” Sivathanu 2005, 133.
- Wang 2006 is directed to, “improving query I/O performance by permuting and refining block request sequences of plan operations based on the combined management policies of the DB buffer and the file system.” Wang 2006, 660.

A POSITA would have also found that the teachings of these references could be predictably interchanged by simple substitution, at least because of the predictability of the art and the known interchangeability of the various elements. For example:

- Lai '719 at ¶99 provides that “it is noted that although the digital information protecting method is realized in the form of a computer program software adapted to be stored in a computer system, the method of the present invention can also be implemented using an integrated circuit, an electronic circuit, or a once-programmable electronic circuit (or logic circuit) that may or may not include a central processor, and that has logical computations capability.” *See also* ¶101 (“the address conversion rule, the address conversion table, or the conversion code generated in the above-described embodiments can be stored in a readable (or writable) storage medium that utilizes a magnetic property, optics, integrated circuit, electronic circuit, or electromagnetic waves, such as a magnetic card, CD, DVD, Smart Card, RamDisk, chip card, RF device, and IRED device.”)
- Hsieh '121 provides “The mass storage device **100** and the random LUT **200** of the present invention are not limited to any specific type. For example, the random LUT **200** can be an application program pre-installed in an electronic host, such as a

personal computer, a notebook computer, a personal digital assistant, a tablet computer, a card reader, or a driver or data conversion application program stored in other portable mass storage device, including DVD, DVD-RW, CD, CD-RW, hard disk, flash memory card, and so on.” Hsieh ’121, ¶30.

- Bromley ’900 provides that “[a]lthough the present invention has been described in reference to a file system, volume, file system manager 208, and volume manager 209, any organization of memory having a corresponding memory organization manager can be used in addition to or in place of the file system, volume, file system manager 208, and volume manager 209 in application host 108.” Bromley ’900, 14:64–15:3.
- Dorward ’878 provides that “it should be understood, however, that the invention is not limited to use with any particular type of storage system or storage system configuration, but is instead more generally applicable to any data storage application in which it is desirable to provide improved efficiency for storage and retrieval of data blocks. Moreover, although illustrated below in the context of archival data storage, the invention can also be used in primary storage applications.” Dorward ’878, ¶16.
- Edwards ’571 provides that is “[i]t is expressly contemplated that the various processes, architectures and procedures described herein can be implemented in hardware, firmware or software.” Edwards ’571, 10:53–56. Edwards further provides that “the teachings of this invention can be implemented as software, including a computer-readable medium having program instructions executing on a computer, hardware, firmware, or a combination thereof.” *Id.*, 20:45–49.
- Hitz ’001 provides that “those skilled in the art would recognize, after perusal of this application, that embodiments of the invention may be implemented using one or more general purpose processors or special purpose processors adapted to particular process steps and data structures operating under program control, that such process steps and data structures can be embodied as information stored in or transmitted to and from memories (e.g., fixed memories such as DRAMs, SRAMs, hard disks, caches, etc., and removable memories such as floppy disks, CD-ROMs, data tapes, etc.) including instructions executable by such processors (e.g., object code that is directly executable, source code that is executable after compilation, code that is executable through interpretation, etc.), and that implementation of the preferred process steps and data structures described herein using such equipment would not require undue experimentation or further invention.” Hitz ’001, 9:9–25.
- Peterson 2005 provides that the technology, “applies to any storage system that shares data between files, most notably versioning file systems.” Peterson 2005, 143.
- Rajan ’520 provides that, “it is expressly contemplated that the teachings of this invention can be implemented as software, including a computer-readable medium having program instructions executing on a computer, hardware, firmware, or a combination thereof.” Rajan ’520, 10:3-7.
- Shen ’718 provides that, “[t]he sector management system may be comprised of various components or modules that perform the functionality as described in detail below. The components or modules may comprise various software sub-routines, procedures, definitional statements and macros. Each of the components or modules are typically

separately compiled and linked into a single executable program. . . Thus, the processes that are undergone by each of the components or modules may be arbitrarily redistributed to one of the other components or modules, combined together in a single components or module, or made available in, for example, a shareable dynamic link library.” Shen ’718, ¶54.

- Sibert ’585 provides that, “[i]t should be appreciated that the present invention can be implemented in numerous ways, including as a process, an apparatus, a system, a device, a method, a computer readable medium, or as a combination thereof.” Sibert ’585, 1:66-2:13. *See also id.* at 4:6-23.
- Tamer ’294 provides that, “each mapping routine can be implemented in software that is stored on any form of computer readable medium, such as a diskette, a tape, a CD ROM, etc. Alternatively, the software can be copied from the computer readable medium to the host computer 110, where it can be loaded into the memory 130 (FIG. 1) and executed on the processor 120 of the host computer 110.” Tamer ’294, 30:56-62.
- Stoica 2003 provides that, “[a] review of the features of recent peer-to-peer applications yields a long list: redundant storage, permanence, selection of nearby servers, anonymity, search, authentication, and hierarchical naming. Despite this rich set of features, the core operation in most peer-to-peer systems is efficient location of data items.” Stoica 2003, 17.
- Moore ’865 provides that, “[t]he invention may be implemented on virtually any type of computer regardless of the platform being used.” Moore ’865, ¶47.
- Burns ’147 provides that, “[t]he invention can also be embodied as an article of manufacture—a machine component—that is used by a digital processing apparatus and which tangibly embodies a program of instructions that are executable by the digital processing apparatus to execute the present logic. This invention is realized in a critical machine component that causes a digital processing apparatus to perform the inventive method steps herein. The invention can be implemented by a computer system including a data storage system having and a processor associated with a data storage system.” Burns ’147, 2:5-15.
- Maheshwari ’455 provides that, “[e]mbodiments of the present invention facilitate the storage of sensitive data in digital rights management and other systems. It should be appreciated that the present invention can be implemented in numerous ways, including as a process, an apparatus, a system, a device, a method, or a computer readable medium.” Maheshwari ’455, 2:11-16.
- Rogers ’192 provides that, “it should be appreciated that the invention and/or portions thereof may be practiced with other computer system configurations, including hand-held devices, multi-processor systems, microprocessor-based or programmable consumer electronics, network PCs, minicomputers, mainframe computers and the like. The invention may also be practiced in distributed computing environments where tasks are performed by remote processing devices that are linked through a communications network. In a distributed computing environment, program modules may be located in both local and remote memory storage devices.” 4:59-5:9.

- Gal 2005 provides that flash memories are, “used to store files and other persistent objects in handheld computers, mobile phones, digital cameras, portable music players, and many other computer systems in which magnetic disks are inappropriate.” Gal 2005, 138.
- *See also, e.g.*, Kaabouch ’264, ¶17; Kawaguchi ’527, 15:55-16:4; Hsu ’622 10:44-47; Chang 2005, 381; Terrell, II ’307, 5:40-45; Bluemenau ’837, 1:11-31; Brinkmann ’212, ¶104, Federwisch ’792, ¶¶45-47, Mane ’548, ¶28; Ananthanarayanan ’125, ¶¶172-174; Corbett ’410, 14:44-60; Patel ’486, 15:36-54; Longerbeam ’084, ¶67.

A POSITA would have also been motivated to combine, and would have a reasonable expectation of success in combining, the charted references, at least because the references use known variations of existing technologies, including known operating systems and file systems, to solve routine and well understood problems (including the mapping and securing digital information on a storage device) in predictable ways. Further, these modifications or combinations would be of only routine skill in the art because, for example, doing so would have at least involved using known programming techniques.

Additional discussion of the motivations to combine various references can be found in Exs. 686-1 through 686-34.

Defendants additionally identify the following specific prior art combinations, as well as the claims that those combinations render obvious. Such combinations are not an admission that the individual references alone do not anticipate any of the claims. Indeed and as recited in Defendants’ claim charts, the recited references either anticipate the claims outright or render the claims obvious when combined with the knowledge of a person of skill in the art. Moreover, Defendants note that Plaintiffs have interpreted multiple claim elements overly broadly and/or improperly in an effort to manufacture an infringement case where none exists. Defendants cannot plausibly recite combinations that would cover all the various claim scopes should the Court agree with Plaintiffs’ apparent constructions on some claim limitations but agree with

Defendants' constructions on others. Defendants accordingly reserve the right to identify additional combinations that accord with the Court's specific claim construction orders.

Prior Art Combinations	Cl. 1	Cl. 2	Cl. 3	Cl. 4	Cl. 5	Cl. 6	Cl. 7	Cl. 8	Cl. 9
Anathanaryanan '125 + Frey '168	X	X	X	X	X		X	X	X
Anathanaryanan '125 + (Frey '168 and/or Federwisch '792)	X	X	X	X	X		X	X	X
Anathanaryanan '125 + Frey '168 + (Edwards '571 and/or LeVine '697)	X	X	X	X	X	X	X	X	X
Anathanaryanan '125 + Federwisch '792 + (Edwards '571 and/or LeVine '697)	X	X	X	X	X	X	X	X	X
Anathanaryanan '125 + Frey '168 + (Sibert '585 and/or Tamer '294)	X	X	X	X	X	X	X	X	X
Hsieh '121 + Klein '441	X	X	X	X		X		X	X
Hsieh '121 + Klein '441 + Anathanaryanan '125	X	X	X	X	X	X	X	X	X
Hsieh '121 + Klein '441 + Dorward '878	X	X	X	X	X	X	X	X	X
Corbett '410 + Klein '441	X	X	X	X	X			X	X
Corbett '410 + Lai '719	X	X	X	X	X	X		X	X
Corbett '410 + Lai '719, + (Chalker '936 and/or Dorward '878)	X	X	X	X	X	X	X	X	X
Corbett '410 + Klein '441, + (Chalker '936 and/or Dorward '878)	X	X	X	X	X	X	X	X	X
Weil 2006 + Klein '441 + (Edwards '571 and/or LeVine '697)	X	X	X	X	X	X	X	X	X
Weil 2006 + Anathanaryanan '125 + (Edwards '571 and/or LeVine '697)	X	X	X	X	X	X	X	X	X
Patel '486 + Frey '168 and/or Federwisch '792	X	X	X	X	X		X		X
Patel '486 + Frey '168 + (Edwards '571 and/or LeVine '697)	X	X	X	X	X	X	X	X	X

Prior Art Combinations	Cl. 1	Cl. 2	Cl. 3	Cl. 4	Cl. 5	Cl. 6	Cl. 7	Cl. 8	Cl. 9
Patel '486 + Federwisch '792 + (Edwards '571 and/or LeVine '697)	X	X	X	X	X	X	X	X	X
Patel '486 + Hsieh '121 + Klein '441 + Anathanaryanan '125	X	X	X	X	X	X	X	X	X
Patel '486 + Corbett '410 + Klein '441	X	X	X	X	X	X	X	X	X
Borthakur 2005 + Anathanaryanan '125 + (Edwards '571 and/or LeVine '697)	X	X	X	X	X	X	X	X	X
Borthakur 2005 + Lai '719, + (Chalker '936 and/or Dorward '878)	X	X	X	X	X	X	X	X	X
Borthakur 2005 + Hsieh '121 + Klein '441	X	X	X	X	X	X	X	X	X
Lai '719 + Edwards '571	X	X	X	X	X	X	X	X	X
Lai '719 + Anathanarayanan '125	X	X	X	X	X	X	X	X	X
Lai '719 + Klein '441 + Doward '486	X	X	X	X	X	X	X	X	X
Lai '719 + Klein '441 + Moore '865	X	X	X	X	X	X		X	X

2. '332 Patent

The '332 acknowledges that “Grid computing is touted as one of the most important and promising paradigms for applications that require long computing times or large storage spaces” that “is attracting a growing number of users to develop larger scale distributed software applications than ever before.” 1:12-16. Grid computing systems pool heterogeneous computational resources from multiple entities and make them available for discrete tasks. *See, e.g.,* Andrew S. Grimshaw et al., “From Legion to Avaki: the persistence of vision”, *Grid Computing: Making the Global Infrastructure a Reality* (Fran Berman et al. ed., 2003) at 266-26; *Grid Computing – GRID 2000; First IEEE/ACM International Workshop* (Rajkumar Buyya et al.

ed., 2000) at v; Ian Foster et al., “The physiology of the Grid”, *Grid Computing: Making the Global Infrastructure a Reality* (Fran Berman et al. ed., 2003) at 220; *Grid Computing – GRID 2000; First IEEE/ACM International Workshop* (Rajkumar Buyya et al. ed., 2000) at v-vi.; Wolfgang Gentzsch, “DOT-COMing the GRID: Using grids for Business”, *Grid Computing – GRID 2000; First IEEE/ACM International Workshop* (Rajkumar Buyya et al. ed., 2000) at 1; Rajkumar Buyya et al., “Architectural Models for Resource Management in the Grid”, *Grid Computing – GRID 2000; First IEEE/ACM International Workshop* (Rajkumar Buyya et al. ed., 2000) at 18; Daniel Minoli, *A Network Approach to Grid Computing* (2005) at 1-3. To the extent a network computing system is not already used grid computing, it would be obvious to do so because grid computing was a well-known and increasingly popular manner of organizing computational resources.

The '332 patent also discusses hot deployment, which “refers to a process of deploying/redeploying an application without having to shutdown/restart an application container” and “is commonly used in containers that run in standalone mode or homogenous cluster environment where every new application change is propagated to all the servers connected in the environment.” 1:39-45. The patent explains that hot deployment “is a very desirable feature as it would not impact running of other applications residing in the system” (1:38-39) and is already supported by existing systems such as J2EE. 1:37. Thus to the extent a networking system does not support hot deployment / redeployment, it would be obvious to a person of skill in the art to do so, as hot deployment is “a very desirable feature” that “is commonly used” and supported by existing systems.

The '332 patent also explains due to the heterogenous nature of computing resources available within a grid computing environment, “the application containers may be running on

different platforms as described above and can require different data transfer mechanisms for hot deployment/redeployment.” 1:53-57. For instance, deploying or hot deploying an application to a Windows server may involve a different data transfer mechanism than deploying an application to a Linux server. Moreover, deploying an application to two servers running the same operating system may nonetheless require different data transfer mechanisms, *e.g.* if one server has disabled FTP connections. *See* 2:40-45. Since deploying or hot deploying an application in a grid computing system may require different data transfer protocols for different servers, it would be obvious to a person of skill in the art to specify the data transfer protocol to be used when hot deploying. Doing so would enable the deployment or hot deployment to use the appropriate data transfer protocol for each target server.

Additional discussion of the motivations to combine various references can be found in Exs. 332-1 through 332-30.

Defendants additionally identify the following specific prior art combinations, as well as the claims that those combinations render obvious. Such combinations are not an admission that the individual references alone do not anticipate any of the claims. Indeed and as recited in Defendants claim charts, the recited references either anticipate the claims outright or render the claims obvious when combined with the knowledge of a person of skill in the art. Moreover, Defendants note that Plaintiffs have interpreted multiple claim elements overly broadly and/or improperly in an effort to manufacture an infringement case where none exists. Defendants cannot plausibly recite combinations that would cover all the various claim scopes should the Court agree with Plaintiffs’ apparent constructions on some claim limitations but agree with Defendants constructions on others. Defendants accordingly reserve the right to identify additional combinations that accord with the Court’s specific claim construction orders.

	Claims								
Prior Art Combination	1	2	3	4	5	6	7	8	9
Altiris + Larkin 065	x	x	x	x	x	x	x	x	x
Altiris + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Altiris + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Altiris + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Bergen 888 + Larkin 065	x	x	x	x	x	x	x	x	x
Bergen 888 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Bergen 888 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Bergen 888 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Bhogal 957 + Larkin 065	x	x	x	x	x	x	x	x	x
Bhogal 957 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Bhogal 957 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Bhogal 957 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Cates 853 + Larkin 065	x	x	x	x	x	x	x	x	x
Cates 853 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Cates 853 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Cates 853 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Chevrette 098 + Larkin 065	x	x	x	x	x	x	x	x	x
Chevrette 098 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Chevrette 098 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Chevrette 098 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Chevrette 411 + Larkin 065	x	x	x	x	x	x	x	x	x
Chevrette 411 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Chevrette 411 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x

Chevrette 411 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
CROWN + Larkin 065	x	x	x	x	x	x	x	x	x
CROWN + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
CROWN + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Dervin 426 + Larkin 065	x	x	x	x	x	x	x	x	x
Dervin 426 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Dervin 426 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Dervin 426 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Enterprise Grid + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Enterprise Grid + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Gebhart 618 + Larkin 065	x	x	x	x	x	x	x	x	x
Gebhart 618 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Gebhart 618 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Hot service + Larkin 065	x	x	x	x	x	x	x	x	x
Hot service + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Hot service + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Huang 937 + Larkin 065	x	x	x	x	x	x	x	x	x
Huang 937 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Huang 937 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Huang 937 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Ichikawa 894 + Larkin 065	x	x	x	x	x	x	x	x	x
Ichikawa 894 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Ichikawa 894 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Ichikawa 894 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Kenyon 035 + Larkin 065	x	x	x	x	x	x	x	x	x

Kenyon 035 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Kenyon 035 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Kenyon 035 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Larkin 065 + Enterprise Grid	x	x	x	x	x	x	x	x	x
Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Matena 322 + Larkin 065	x	x	x	x	x	x	x	x	x
Matena 322 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Matena 322 + Larkin 065 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
MS Update + Larkin 065	x	x	x	x	x	x	x	x	x
MS Update + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
MS Update + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
MS Update + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Narayanaswamy 243 + Larkin 065	x	x	x	x	x	x	x	x	x
Narayanaswamy 243 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Narayanaswamy 243 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Narayanaswamy 243 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Narayanaswamy 352 + Larkin 065	x	x	x	x	x	x	x	x	x
Narayanaswamy 352 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Narayanaswamy 352 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Narayanaswamy 358 + Larkin 065	x	x	x	x	x	x	x	x	x
Narayanaswamy 358 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Narayanaswamy 358 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Narayanaswamy 358 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x

Opsware System + Larkin 065	x	x	x	x	x	x	x	x	x
Opsware System + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Opsware System + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Opsware System + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Patchlink + Larkin 065	x	x	x	x	x	x	x	x	x
Patchlink + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Patchlink + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Patchlink + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Rowley 740 + Larkin 065	x	x	x	x	x	x	x	x	x
Rowley 740 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Rowley 740 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Rowley 740 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Sadiq 184 + Larkin 065	x	x	x	x	x	x	x	x	x
Sadiq 184 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Sadiq 184 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Sadiq 184 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Sadowsky 737 + Larkin 065	x	x	x	x	x	x	x	x	x
Sadowsky 737 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Sadowsky 737 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Sadowsky 737 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Tivoli + Larkin 065	x	x	x	x	x	x	x	x	x
Tivoli + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Tivoli + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Tivoli + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Web Services in Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Web Services in Grid + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x

Web Services in Grid + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
WebSphere + Larkin 065	x	x	x	x	x	x	x	x	x
WebSphere + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
WebSphere + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
WebSphere + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x
Wolfe 846 + Larkin 065	x	x	x	x	x	x	x	x	x
Wolfe 846 + Enterprise Grid + Larkin 065	x	x	x	x	x	x	x	x	x
Wolfe 846 + Larkin 065 + Matera 322	x	x	x	x	x	x	x	x	x
Wolfe 846 + Larkin 065 + Matera 322 + Narayanaswamy 352	x	x	x	x	x	x	x	x	x

3. '597 Patent

The '597 patent acknowledges that “[w]ith the explosive growth of the Internet, many customers have desired to use the larger bandwidth of a cable television network to connect to the Internet and other computer networks,” because “cable modems currently support a data connection to the Internet and other computer networks via a cable television network with a data rate of up to 30+ Mbps, which is a much larger data rate than can be supported by a modem used over a serial telephone line.” 1:35-49. Thus to the extent a reference does not disclose operating over a data-on-cable network, it would be obvious to a person of skill in the art to do so because data-on-cable networks were popular at the time of the claim invention, and because they were further increasing in their popularity.

The '597 patent also explains that “[i]n a bi-directional cable system, when the cable modem termination system receives data packets from the data network, the cable modem termination system transmits received data packets downstream via the cable television network to a cable modem attached to the customer premises equipment entity. The customer premises

equipment entity sends response data packets to the cable modem, which sends the response data packets upstream via the cable network.” 2:25-34. Accordingly, “[t]he primary function of the cable modem is to transport high-speed digital data from the cable network to and from users on a cable network.” Albert Azzam et al, *Broadband Access Technologies* (1999) at 167-168. “At the channel level, the cable modem in the downstream direction must tune its receiver to a 6 MHz band with 450 to 750 MHz to receive data digital signals.” *Id.* “In the upstream direction, the cable modem performs the transmitter function, transferring information to the headend using a 6 MHz band between 5 and 42 MHz.” Accordingly there are many more downstream channels available to a cable modem than upstream channels. *See also id.* at 118-120. The ’597 patent also discusses existing telephone return systems, where “the cable modem [] sends response data packets upstream via the public switched telephone network to the telephone remote access concentrator.” 2:36-45. Thus to the extent a reference does not disclose initializing data channels or channel pairs, it would be obvious to a person of skill to do so because a cable modem must be assigned channel pairs to function properly. Absent such an assignment, two cable modems might interfere with each other’s transmissions by using the same channel pairs at the same time.

At the time of the claimed invention, load balancing in the context of network systems was well known. *See, e.g.*, Shabtay-398 at Abstract (disclosing a “method of accelerating the operation of a load balancer”); Zisapel-801 at Abstract (disclosing a “method for load balancing requests on a network”); Albert-913 at Abstract (“A system and method are described for selecting a server to handle a connection.”). The intuition behind load balancing on a network is the same as the intuition of a shopper headed to the shortest checkout line: one can obtain faster service by directing a request to the resource with the greatest availability. To the extent a

reference does not disclose load balancing the assignment of channel pairs, it would be obvious to a person of skill in the art to add load balancing to ensure that newly initialized cable modems are assigned channel pairs with greater availability / bandwidth.

Additional discussion of the motivations to combine various references can be found in Exs. 597-1 through 597-18.

Defendants additionally identify the following specific prior art combinations, as well as the claims that those combinations render obvious. Such combinations are not an admission that the individual references alone do not anticipate any of the claims. Indeed and as recited in Defendants claim charts, the recited references either anticipate the claims outright or render the claims obvious when combined with the knowledge of a person of skill in the art. Moreover, Defendants note that Plaintiffs have interpreted multiple claim elements overly broadly and/or improperly in an effort to manufacture an infringement case where none exists. Defendants cannot plausibly recite combinations that would cover all the various claim scopes should the Court agree with Plaintiffs' apparent constructions on some claim limitations but agree with Defendants constructions on others. Defendants accordingly reserve the right to identify additional combinations that accord with the Court's specific claim construction orders.

	Claims																			
Prior Art Combination	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Albert 913 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Albert 913 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Albert 913 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Ahmed 1996 + Colby 264 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Ahmed 1996 + Colby 264 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Ahmed 1996 + Colby 264 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Arrow 839 + Colby 264 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Arrow 839 + Colby 264 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Arrow 839 + Colby 264 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CHOICE + Colby 264 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CHOICE + Colby 264 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CHOICE + Colby 264 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Colby 264 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Colby 264 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Colby 264 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Dutta 423 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Dutta 423 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Dutta 423 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Elshabrawy 2000 + Colby 264 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Elshabrawy 2000 + Colby 264 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Elshabrawy 2000 + Colby 264 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Hong 065 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Hong 065 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Hong 065 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Kimball 041 + Colby 264 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Kimball 041 + Colby 264 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Kimball 041 + Colby 264 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Logston 735 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Logston 735 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Logston 735 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Primak 448 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Primak 448 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Primak 448 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Sawyer 925 + Colby 264	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Sawyer 925 + Colby 264 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Sawyer 925 + Colby 264 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Sawyer 986 + Colby 264	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Sawyer 986 + Colby 264 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Sawyer 986 + Colby 264 + Sawyer 925 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Schmuelling 758 + Colby 264	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Schmuelling 758 + Colby 264 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Schmuelling 758 + Colby 264 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Sherman 337 + Colby 264 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Sherman 337 + Colby 264 + Sawyer 925 +	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Sawyer 986																				
Sherman 337 + Colby 264 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Vepa 630 + Colby 264 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Vepa 630 + Colby 264 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Vepa 630 + Colby 264 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Wolff 545 + Colby 264 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Wolff 545 + Colby 264 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Wolff 545 + Colby 264 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Zisapel 801 + Colby 264 + Sawyer 925	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Zisapel 801 + Colby 264 + Sawyer 925 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Zisapel 801 + Colby 264 + Sawyer 925 + Sawyer 986 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

4. '832 Patent

The '832 patent is purportedly directed to “an apparatus and method for monitoring performance of a storage device.” '832 patent, Abstract. The steps performed include: “intercept[ing] communications between a computer system and the storage device, wherein the communications are compared to a threshold value and/or a predicted failure of the storage device” and “respond[ing] to a decline in the performance of the storage device based on the analyzed communications, and preferably prior to the predicted failure thereof. '832 patent, Abstract.

The '832 patent acknowledges that it is understood that computers routinely access storage devices. '832 patent, 1:13-27. And further, that these communications take the form of read/write commands, which include typical commands such as “‘open’, ‘close’, ‘read’, ‘write’, ‘file creation’, ‘error’, etc.” '832 patent, 4:6-9. The '832 patent acknowledges that aspects of its alleged invention can be implemented in “program code for intercepting the communications” or “[m]echanisms that allow applications to intercept such calls may be provided for use with operating systems, such as, Unix and Microsoft WINDOWS® operating systems.” '832 patent, 4:9-12.

It would have at least been obvious to a POSITA to combine the teachings of any of the references identified in III.I.1 with one another and/or the knowledge of a POSITA. Each of these references is analogous to the '686 patent as each is directed to monitoring a performance of a storage device. For example:⁶

- Wolf '363 is directed to “a system...which has a memory resident part that monitors data retrieval from a peripheral storage medium concurrently with the normal operation of the computer.” Wolf '363, 3:22-29.
- Christenson '620 is directed to “[m]ethod and apparatus for managing data on DASD units to improve system performance” by “monitoring portions of data on a plurality of DASD units. Christenson '620, Abstract.
- Chee 1998 is directed to “a storage management system that has the ability to adapt to the data access characteristics of the application that uses it based on collection and analysis of runtime statistics.” Chee 1998, 824.
- D'Errico '317 is directed to a “method and apparatus for managing a log of information in a computer system including a host computer and a storage system that stores data accessed by the host computer.” D'Errico, Abstract. D'Errico '317 further teaches that “accesses to a hot spot within a logical volume are monitored to determine if the hot spot overflows the amount of cache storage designated for the logical volume.” D'Errico '317, 6:23-28.

⁶ These citations are merely exemplary. Defendants reserve the right to rely on any teachings disclosed in the references charted.

- Ledain '515 is directed to “a multi-tasking computer system employing a log device to support a log structured filesystem paradigm over an independent filesystem and the operation of the log device to dynamically balance filesystem I/O transactions.” Ledain '515, 1:6-12.
- Stone '670 is directed to a “mechanism within a disk controller that computes the number of unites of storage space accessed as a function of...time.” Stone, '670, Abstract.
- Grimsrud '593 is directed to an “apparatus...programmed with a plurality of programming instructions for generating...an alternative disk block allocation for a current disk block allocation that will yield improved overall access times for a sequence of disk accesses.” Grimsrud '593, Abstract.
- Andrew File System Administration Guide 2000 is directed to a file system. Andrew file System Administration Guide 2000 further disclose a BOS server that “reduces the demands on system administrators by constantly monitoring the processes running on its file server machine. Andrew File System Administration Guide 2000, 12.
- Li '214 is directed to “a method and system for taking corrective action to prevent a failure” when detecting “an imminent hard disk drive failure.” Li '214, 1:11-13.

A POSITA would have also found that the teachings of these references could be predictably interchanged by simple substitution, at least because of the predictability of the art and the known interchangeability of the various elements. For example:

- Wolf '363 provides that “[a]lthough the preferred embodiment described herein includes a computer program operating on a personal computer, such as an IBM PC-compatible computer using DOS as its operating system, a computer program according to the present invention may be made to operate on other types of computers and with other operating systems, as well.” Wolf '363, 4:60-66, 5:4-8 (“Instructions directing such a computer to perform useful work are contained in a computer programs, which may be stored in an "external" medium such as on the hard disk 104, or internally in a read-only memory (ROM) 106”).
- Christenson '620 provides that “the various embodiments of the invention are capable of being distributed as a program product in a variety of forms, and that the invention applies equally regardless of the particular type of signal bearing media used to actually carry out the distribution.” Christenson '620 5:38-42. Christenson '620 further provides that “[e]xamples of signal bearing media include, but are not limited to, recordable-type media such as volatile and non-volatile memory devices, floppy and other removable disks, hard disk drives, optical disks (e.g., CD-ROMS, DVD;s, et.) among others, and transmission-type

media such as digital and analog communication links.” Christenson ’620, 5:43-47.

- Chee 1998 provides that its “storage management system is intended to act as a basic storage management system for database systems” and that “it can be adapted for use for a wide range of applications.” Chee 1998, 837. is directed to “a storage management system that has the ability to adapt to the data access characteristics of the application that uses it based on collection and analysis of runtime statistics.” Chee 1998, 824.
- D’Errico ’317 provides that “detection of a hot spot that overflows the cache slots dedicated to a logical volume can be implemented in any of numerous ways, and the present invention is not limited to any particular detection technique.” D’Errico ’317, 7:47-50, 15:35-38 (“It should further be appreciated that this aspect of the present invention can be implemented in any of numerous ways, and that the present invention is not limited to any particular manner of implementation”).
- Ledain ’515 provides that “many modifications and variations of the present invention are possible in light of the above description of the preferred embodiments.” Ledain ’515, 31:24-26, 8:46-55.
- Stone ’670 provides that “clock counter logic block 6 has a counter dedicated to each footprint function that is being calculated” and that the “logic block can be implemented as a conventional memory.” Stone ’670, 4:34-39, 3:65-67 (“Logic block 4 is a memory dedicated to the recording of the footprint function. It can be implemented as a conventional random-access computer memory.”), 3:52-57.
- Grimsrud ’593 provides “a computer system suitable for programming in accordance with the teachings of the present invention” that includes “elements [that] perform their conventional functions known in the art.” Grimsrud, 7:16-31, 4:6-10 (“While for ease of explanation, disk block reallocator 36 is illustrated as a ‘separate block’ from application 32, as will be appreciated by those skilled in the art, disk block reallocator 36 may be implemented as an integral part of application 32 or separate from application 32”), 4:10-23.
- Andrew File System Administration Guide 2000 provides that “AFS incorporates special features on server machines and client machines that help make it efficient and reliable.” Andrew File Administration Guide 2000, 2.
- Li ’214 provides that “the method and system of the present invention may also be implemented within computer systems that have multiple CPUs, and to computer systems that have multiple buses that each perform different functions in different ways. Li ’214, 4:28-31.

A POSITA would have also been motivated to combine, and would have a reasonable expectation of success in combining, the charted references, at least because the references use known variations of existing technologies, including known operating systems and file systems, to solve routine and well understood problems (including monitoring storage devices) in predictable ways. Further, these modifications or combinations would be of only routine skill in the art because, for example, doing so would have at least involved using known programming techniques.

Additional discussion of the motivations to combine various references can be found in Exs. 832-1 through 832-18.

Defendants additionally identify the following specific prior art combinations, as well as the claims that those combinations render obvious. Such combinations are not an admission that the individual references alone do not anticipate any of the claims. Indeed and as recited in Defendants' claim charts, the recited references either anticipate the claims outright or render the claims obvious when combined with the knowledge of a person of skill in the art. Moreover, Defendants note that Plaintiffs have interpreted multiple claim elements overly broadly and/or improperly in an effort to manufacture an infringement case where none exists. Defendants cannot plausibly recite combinations that would cover all the various claim scopes should the Court agree with Plaintiffs' apparent constructions on some claim limitations but agree with Defendants' constructions on others. Defendants accordingly reserve the right to identify additional combinations that accord with the Court's specific claim construction orders.

Prior Art Combination	Cl. 1	Cl. 2	Cl. 3	Cl. 4	Cl. 5	Cl. 6	Cl. 7	Cl. 8	Cl. 9	Cl. 10	Cl. 11	Cl. 25	Cl. 26
Wolf '363 + Christenson '620	X	X	X	X	X	X	X	X	X	X		X	X
Wolf '363 + Christenson '620 + Eaton 1999	X	X	X	X	X	X	X	X	X	X	X	X	X

Prior Art Combination	Cl. 1	Cl. 2	Cl. 3	Cl. 4	Cl. 5	Cl. 6	Cl. 7	Cl. 8	Cl. 9	Cl. 10	Cl. 11	Cl. 25	Cl. 26
Wolf '363 + Christenson '620 + Grimsrud '593	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + Christenson '620 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + Christenson '620 + Chee 1998	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + Christenson '620 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + Christenson '620 + D'Errico '317	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + Chee 1998	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + D'Errico '317	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + Stone '670	X	X	X	X	X	X	X	X	X	X		X	X
Wolf '363 + Stone '670 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + Stone '670 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + Stone '670 + D'Errico '317	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + Stone '670 + Grimsrud '593	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + Stone '670 + Eaton 1999	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + Stone '670 + Chee 1998	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + Grimsrud '593	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X		X	X
Wolf '363 + AFS Guide 2000 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + AFS Guide 2000 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + AFS Guide 2000 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + AFS Guide 2000 + D'Errico '317	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + AFS Guide 2000 + Grimsrud '593	a	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + AFS Guide 2000 + Chee 1998	X	X	X	X	X	X	X	X	X	X	X	X	X
Wolf '363 + AFS Guide 2000 + Eaton 1999	X	X	X	X	X	X	X	X	X	X	X	X	X

Prior Art Combination	Cl. 1	Cl. 2	Cl. 3	Cl. 4	Cl. 5	Cl. 6	Cl. 7	Cl. 8	Cl. 9	Cl. 10	Cl. 11	Cl. 25	Cl. 26
Christenson '620 + D'Errico '317	X	X		X	X	X	X	X	X	X	X	X	X
Christenson '620 + D'Errico '317 + Stone '670	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + D'Errico '317 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + D'Errico '317 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + D'Errico '317 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + Chee 1998	X	X			X	X	X	X		X	X	X	X
Christenson '620 + Chee 1998 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + Chee 1998 + Stone '670	X	X	X		X	X	X	X		X	X	X	X
Christenson '620 + Chee 1998 + D'Errico '317	X	X		X	X	X	X	X	X	X	X	X	X
Christenson '620 + Chee 1998 + Li '214	X	X		X	X	X	X	X		X	X	X	X
Christenson '620 + Chee 1998 + Archibald '580	X	X		X	X	X	X	X		X	X	X	X
Christenson '620 + Chee 1998 + Grimsrud '593	X	X			X	X	X	X	X	X	X	X	X
Christenson '620 + Chee 1998 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + Chee 1998 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + Chee 1998 + Assaf '562	X	X		X	X	X	X	X	X	X	X	X	X
Christenson '620 + Chee 1998 + Senator '303	X	X		X	X	X	X	X		X	X	X	X
Christenson '620 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + Stone '670	X	X	X		X	X	X	X		X		X	X
Christenson '620 + Stone '670 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + Stone '670 + D'Errico '317	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + Stone '670 + Li '214	X	X	X	X	X	X	X	X		X		X	X

Prior Art Combination	Cl. 1	Cl. 2	Cl. 3	Cl. 4	Cl. 5	Cl. 6	Cl. 7	Cl. 8	Cl. 9	Cl. 10	Cl. 11	Cl. 25	Cl. 26
Christenson '620 + Stone '670 + Archibald '580	X	X	X	X	X	X	X	X		X		X	X
Christenson '620 + Stone '670 + Senator '303	X	X	X	X	X	X	X	X		X		X	X
Christenson '620 + Stone '670 + Grimsrud '593	X	X	X		X	X	X	X	X	X	X	X	X
Christenson '620 + Stone '670 + Chu '473	X	X	X		X	X	X	X	X	X	X	X	X
Christenson '620 + Stone '670 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X		X	X
Christenson '620 + Stone '670 + Assaf '562	X	X	X	X	X	X	X	X	X	X		X	X
Christenson '620 + Stone '670 + Eaton 1999	X	X	X		X	X	X	X		X	X	X	X
Christenson '620 + Stone '670 + Chee 1998	X	X	X		X	X	X	X		X	X	X	X
Christenson '620 + Li '214	X	X		X	X	X	X	X		X		X	X
Christenson '620 + Li '214+ Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + Li '214 + Stone '670	X	X	X	X	X	X	X	X		X		X	X
Christenson '620 + Li '214 + D'Errico '317	X	X		X	X	X	X	X	X	X	X	X	X
Christenson '620 + Li '214 + Grimsrud '593	X	X		X	X	X	X	X	X	X	X	X	X
Christenson '620 + Li '214 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + Li '214 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X		X	X
Christenson '620 + Li '214 + Assaf '562	X	X		X	X	X	X	X	X	X		X	X
Christenson '620 + Li '214 + Eaton 1999	X	X		X	X	X	X	X		X	X	X	X
Christenson '620 + Li '214 + Chee 1998	X	X		X	X	X	X	X		X	X	X	X
Christenson '620 + Grimsrud '593	X	X			X	X	X	X	X	X	X	X	X
Christenson '620 + Grimsrud '593 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + Grimsrud '593 + Stone '670	X	X	X		X	X	X	X	X	X	X	X	X

Prior Art Combination	Cl. 1	Cl. 2	Cl. 3	Cl. 4	Cl. 5	Cl. 6	Cl. 7	Cl. 8	Cl. 9	Cl. 10	Cl. 11	Cl. 25	Cl. 26
Christenson '620 + Grimsrud '593 + D'Errico '317	X	X		X	X	X	X	X	X	X	X	X	X
Christenson '620 + Grimsrud '593 + Li '214	X	X		X	X	X	X	X	X	X	X	X	X
Christenson '620 + Grimsrud '593 + Archibald '580	X	X		X	X	X	X	X	X	X	X	X	X
Christenson '620 + Grimsrud '593 + Senator '303	X	X		X	X	X	X	X	X	X	X	X	X
Christenson '620 + Grimsrud '593 + Asaaf '562	X	X		X	X	X	X	X	X	X	X	X	X
Christenson '620 + Grimsrud '593 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + Grimsrud '593 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X		X	X
Christenson '620 + AFS Guide 2000 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + AFS Guide 2000 + D'Errico '317	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + AFS Guide 2000 + Grimsrud '593	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + AFS Guide 2000 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + AFS Guide 2000 + Eaton 1999	X	X	X	X	X	X	X	X	X	X	X	X	X
Christenson '620 + AFS Guide 2000 + Chee 1998	X	X	X	X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Chee 1998	X	X		X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Chee 1998 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Chee 1998 + Stone '670	X	X	X	X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Chee 1998 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Chee 1998 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X

Prior Art Combination	Cl. 1	Cl. 2	Cl. 3	Cl. 4	Cl. 5	Cl. 6	Cl. 7	Cl. 8	Cl. 9	Cl. 10	Cl. 11	Cl. 25	Cl. 26
D'Errico '317 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Stone '670	X	X	X	X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Grimsrud '593	X	X		X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Grimsrud '593 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Grimsrud '593 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Grimsrud '593 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Grimsrud '593 + Stone '670	X	X	X	X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Li '214	X	X		X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Li '214 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Li '214 + Stone '670	X	X	X	X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Li '214 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X	X	X	X
D'Errico '317 + Li '214 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
D'Errico '317 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X	X	X	X
Ledain '515 + Chee 1998	X	X	X	X	X	X	X	X	X	X	X	X	X
Ledain '515 + Stone '670	X	X	X	X	X	X	X	X	X	X	X	X	X
Ledain '515 + Grimsrud '593	X	X	X	X	X	X	X		X	X	X	X	X
Ledain '515 + Grimsrud '593 + Wolf '363	X	X	X	X	X	X	X	X	X	X	X	X	X
Ledain '515 + Grimsrud '593 + D'Errico '317	X	X	X	X	X	X	X	X	X	X	X	X	X
Ledain '515 + Grimsrud '593 + Stone '670	X	X	X	X	X	X	X	X	X	X	X	X	X
Ledain '515 + Grimsrud '593 + Chee 1998	X	X	X	X	X	X	X	X	X	X	X	X	X
Ledain '515 + Grimsrud '593 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X	X	X	X
Ledain '515 + Grimsrud '593 + Stone '670	X	X	X	X	X	X	X	X	X	X	X	X	X

Prior Art Combination	Cl. 1	Cl. 2	Cl. 3	Cl. 4	Cl. 5	Cl. 6	Cl. 7	Cl. 8	Cl. 9	Cl. 10	Cl. 11	Cl. 25	Cl. 26
Ledain '515 + Grimsrud '593 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
Ledain '515 + Grimsrud '593 + Eaton 1999	X	X	X	X	X	X	X	X	X	X	X	X	X
Ledain '515 + Grimsrud '593 + Parris '406	X	X	X	X	X	X	X	X	X	X	X	X	X
Stone '670 + Grimsrud '593	X	X	X		X	X	X	X	X	X	X	X	X
Stone '670 + Grimsrud '593 + Wolf '363	X	X	X	X	X	X	X	X	X	X	X	X	X
Stone '670 + Grimsrud '593 + D'Errico '317	X	X	X	X	X	X	X	X	X	X	X	X	X
Stone '670 + Grimsrud '593 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X	X	X	X
Stone '670 + Grimsrud '593 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
Stone '670 + Grimsrud '593 + Senator '303	X	X	X	X	X	X	X	X	X	X	X	X	X
Stone '670 + Grimsrud '593 + Assaf '562	X	X	X	X	X	X	X	X	X	X	X	X	X
Stone '670 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X		X	X
Stone '670 + AFS Guide 2000 + D'Errico '317	X	X	X	X	X	X	X	X	X	X	X	X	X
Stone '670 + AFS Guide 2000 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
Stone '670 + AFS Guide 2000 + Chee 1998	X	X	X	X	X	X	X	X	X	X	X	X	X
Stone '670 + AFS Guide 2000 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
Stone '670 + AFS Guide 2000 + Eaton 1999	X	X	X	X	X	X	X	X	X	X	X	X	X
Grimsrud '593 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X	X	X	X
Grimsrud '593 + Chee 1998	X	X			X	X	X	X	X	X	X	X	X
Grimsrud '593 + Chee 1998 + Wolf '363	X	X	X	X	X	X	X	X	X	X	X	X	X
Grimsrud '593 + Chee 1998 + Stone '670	X	X	X		X	X	X	X	X	X	X	X	X
Grimsrud '593 + Chee 1998 + Ledain '515	X	X	X	X	X	X	X	X	X	X	X	X	X
Grimsrud '593 + Chee 1998 + AFS Guide 2000	X	X	X	X	X	X	X	X	X	X	X	X	X
Grimsrud '593 + Chee 1998 + Chu '473	X	X	X	X	X	X	X	X	X	X	X	X	X
Grimsrud '593 + Chee 1998 + D'Errico '317	X	X		X	X	X	X	X	X	X	X	X	X

Prior Art Combination	Cl. 1	Cl. 2	Cl. 3	Cl. 4	Cl. 5	Cl. 6	Cl. 7	Cl. 8	Cl. 9	Cl. 10	Cl. 11	Cl. 25	Cl. 26
Grimsrud '593 + Chee 1998 + Li '214	X	X			X	X	X	X	X	X	X	X	X
Grimsrud '593 + Chee 1998 + Archibald '580	X	X		X	X	X	X	X	X	X	X	X	X
Grimsrud '593 + Chee 1998 + Senator '303	X	X		X	X	X	X	X	X	X	X	X	X
Grimsrud '593 + Chee 1998 + Asaaf '562	X	X		X	X	X	X	X	X	X	X	X	X

5. '326 Patent

The '326 patent acknowledges that “[w]ith the explosive growth of the Internet, many customers have desired to use the larger bandwidth of a cable television network to connect to the Internet and other computer networks,” because “cable modems currently support a data connection to the Internet and other computer networks via a cable television network with a data rate of up to 30+ Mbps, which is a much larger data rate than can be supported by a modem used over a serial telephone line.” 1:41-55. Thus to the extent a reference does not disclose operating over a data-on-cable network, it would be obvious to a person of skill in the art to do so because data-on-cable networks were popular at the time of the claim invention, and because they were further increasing in their popularity.

The '326 patent likewise explains that a cable modem connecting to a new data-over-cable system needs to be initialized. 2:55-61. “[U]pon initialization, the cable modem receives a configuration file (a boot file) from a configuration server via a trivial file-transfer protocol (‘TFTP’) exchange.” 2:61-64. “The configuration file may comprise a plurality of Class-of-Service (‘CoS’) and Quality-of-Service (‘QoS’) parameters” such as “maximum allowed rates, minimum reserved rate, maximum latency” and “parameters defining delays expected to deliver data to a specific destination, the level of protection from unauthorized monitoring or modification of data, expected residual error probability, relative priority associated with data,”

respectively. 2:65-3:10. Thus to the extent a reference does not disclose receiving a configuration file containing Class-of-Service and/or Quality-of-Service parameters, it would be obvious to a person of skill in the art that such receiving is needed in the context of a data-over-cable system.

Additional discussion of the motivations to combine various references can be found in Exs. 326-1 through 326-23.

Defendants additionally identify the following specific prior art combinations, as well as the claims that those combinations render obvious. Such combinations are not an admission that the individual references alone do not anticipate any of the claims. Indeed and as recited in Defendants claim charts, the recited references either anticipate the claims outright or render the claims obvious when combined with the knowledge of a person of skill in the art. Moreover, Defendants note that Plaintiffs have interpreted multiple claim elements overly broadly and/or improperly in an effort to manufacture an infringement case where none exists. Defendants cannot plausibly recite combinations that would cover all the various claim scopes should the Court agree with Plaintiffs' apparent constructions on some claim limitations but agree with Defendants constructions on others. Defendants accordingly reserve the right to identify additional combinations that accord with the Court's specific claim construction orders.

	Claims																	
Prior Art Combination	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Abe 1996 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Abe 1996 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Abe 1996 + Schmuelling 758 +	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Synnestvedt 057 + Rodwin 769 + Sawyer 986																			
Ami 569 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Ami 569 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Ami 569 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Aschemann 1999 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Aschemann 1999 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Aschemann 1999 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Azcorra 1999 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Azcorra 1999 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Azcorra 1999 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bahlmann 008 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bahlmann 008 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bahlmann 008 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bieszczad 1998 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bieszczad 1998 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bieszczad 1998 + Schmuelling 758 +	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Synnestvedt 057 + Rodwin 769 + Sawyer 986																			
Cao 797 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Cao 797 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Cao 797 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Forslow 237 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Forslow 237 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Forslow 237 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Gai 445 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Gai 445 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Gai 445 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Hernandez-Valencia 1997 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Hernandez-Valencia 1997 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Hernandez-Valencia 1997 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Hong 737 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Hong 737 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Hong 737 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

986																			
McManus 1997 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
McManus 1997 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
McManus 1997 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Modi 886 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Modi 886 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Modi 886 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Novi 584 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Novi 584 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Novi 584 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Pagan 641 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Pagan 641 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Pagan 641 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Patrick 530 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Patrick 530 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Patrick 530 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

986																			
Rodwin 769 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Rodwin 769 + Schmuelling 758 + Synnestvedt 057 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Sawyer 986 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Sawyer 986 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Synnestvedt 057 + Schmuelling 758	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Synnestvedt 057 + Schmuelling 758 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Synnestvedt 057 + Schmuelling 758 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Woundy 464 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Woundy 464 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Woundy 464 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
DOCSIS + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
DOCSIS + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Loukianov 075 + Schmuelling 758 + Synnestvedt 057	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Loukianov 075 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Loukianov 075 + Schmuelling 758 + Synnestvedt 057 + Rodwin 769 + Sawyer 986	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

V. PRIOR ART CLAIM CHARTS (P.R. 3-3(C))

The claim charts attached as Exhibit Nos. 686-1 to 686-34, 332-1 to 332-30, 597-1 to 597-18, 832-1 to 832-18, 326-1 to 326-23, specify where the limitations of the Asserted Claims are disclosed in the prior art. The obviousness combinations are disclosed in Section IV(D). This identification is based on Home Depot's current understanding of Plaintiffs' apparent interpretation of the Asserted Claims as reflected in its infringement contentions. These Invalidity Contentions shall not be construed as an admission of or acquiescence to Plaintiffs' proffered or apparent claim constructions and interpretations or of other positions advanced by Plaintiffs during the course of this litigation. Furthermore, they shall not prevent Home Depot from advancing its claim construction and/or noninfringement positions.

These Invalidity Contentions are also intended to be exemplary in nature rather than exhaustive. Home Depot has endeavored to identify the most relevant portions of the prior art references. The references, however, may contain additional support for a particular claim limitation. Home Depot may rely on uncited portions of the prior art references, other documents, fact witness testimony, Plaintiffs' testimony, and expert testimony to provide context or to aid in understanding the cited portions of the references. Where Home Depot cites to a particular figure in a reference, the citation should be understood to encompass the caption, related description of the figure, and any text relating to the figure. Conversely, where Home Depot cites to particular text referring to a figure, the citation should be understood to include the figure as well. Home

Depot reserves the right to rely on any portion of each reference in this chart, cited or not, to show that the asserted claims are invalid.

A. '686 Patent

Exhibit No.	Exhibit Title (charts explaining bases for invalidity)⁷
686-1	Iyengar '686
686-2	Borthakur 2005
686-3	Ananthanarayanan '125
686-4	Frey '168
686-5	Corbett '410
686-6	Hsieh '121
686-7	Klein '441
686-8	Lai '719
686-9	Patel '486
686-10	Weil 2006
686-11	Dorward '878
686-12	Edwards '571
686-13	Chalker '936
686-14	Gallagher '332
686-15	Stoica 2003
686-16	Federwisch '792
686-17	Tamer '294
686-18	Peterson 2005
686-19	Rajan '530
686-20	Rosenblum 1990
686-21	Shen '718
686-22	Chung 2006
686-23	Wu 2006
686-24	Longerbeam '084
686-25	Mazieres 2002
686-26	Bromley '900
686-27	Nishimura '922
686-28	Kapoor '635
686-29	Mane '548
686-30	Brinkman '212
686-31	Blumenau '837
686-32	LeVine '697
686-33	Kado '396

⁷ An identification of a prior art reference for purposes of identifying an exhibit should be understood to mean that the chart discloses not only bases for invalidity based on that reference, but also that reference in combination with other references identified or referred to in the chart.

686-34	Hitz '001
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B. '332 Patent:

Exhibit No.	Exhibit Title (charts explaining bases for invalidity)
332-1	A Web-Services-Based Deployment Framework in Grid Computing Environment ("Web Services in Grid")
332-2	Altiris Patch Management System ("Altiris")
332-3	Bergen 888
332-4	Bhogal 957
332-5	Cates 853
332-6	Chevrette 098
332-7	Chevrette 411
332-8	CROWN Node Server An Enhanced Grid Service Container Based on GT4 WSRF Core ("CROWN")
332-9	Dervin 426
332-10	Design and Implementation of an Enterprise Grid ("Enterprise Grid")
332-11	Gebhart 618
332-12	Hot Service Deployment in an Ad Hoc Grid Environment ("Hot service")
332-13	Huang 937
332-14	Ichikawa 894
332-15	Kenyon 035
332-16	Larkin 065
332-17	Matena 322
332-18	Microsoft Software Update Services System ("MS Update")
332-19	Narayanaswamy 243
332-20	Narayanaswamy 352
332-21	Narayanaswamy 358
332-22	Opware System
332-23	PatchLink UPDATE System ("Patchlink")
332-24	Rowley 740
332-25	Sadiq 184
332-26	Sadowsky 737
332-27	Tivoli Provisioning Manager Express Version 4.1 ("Tivoli")
332-28	[INTENTIONALLY SKIPPED]
332-29	WebSphere Application Server Handbook ("WebSphere")
332-30	Wolfe 846

C. '597 Patent:

Exhibit No.	Exhibit Title (charts explaining bases for invalidity)
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597-1	Ahmed 1996
597-2	Albert 913
597-3	Arrow 839
597-4	The CHOICE Network (“CHOICE”)
597-5	Colby 264
597-6	Dutta 423
597-7	Elshabrawy 2000
597-8	Hong 065
597-9	Kimball 041
597-10	Longston 735
597-11	Sawyer 925
597-12	Sawyer 986
597-13	Schmuelling 758
597-14	Sherman 337
597-15	Vepa 630
597-16	Wolff 545
597-17	Primak 448
597-18	Zisapel 801

D. ’832 Patent

Exhibit No.	Exhibit Title (charts explaining bases for invalidity)
832-1	Wolf ’363
832-2	Christenson ’620
832-3	D’Errico ’317
832-4	Chee 1998
832-5	Ledain ’515
832-6	Li ’214
832-7	AFS Guide 2000
832-8	Stone ’670
832-9	Grimsrud ’593
832-10	Archibald ’580
832-11	Chu ’473
832-12	Senator ’303
832-13	Parris ’406
832-14	Duggan ’257
832-15	Assaf ’562
832-16	Easton 1999
832-17	VERITAS VM 1995
832-18	Weikum 1991

E. '326 Patent:

Exhibit No.	Exhibit Title (charts explaining bases for invalidity)
326-1	Abe 1996
326-2	Ami 569
326-3	Aschemann 1999
326-4	Azcorra 1999
326-5	Bahlmann 008
326-6	Bieszczad 1998
326-7	Cao 797
326-8	Forslow 237
326-9	Gai 445
326-10	Hernandez-Valencia 1997
326-11	Hong 737
326-12	McManus 1997
326-13	Modi 886
326-14	Novi 584
326-15	Pagan 641
326-16	Patrick 530
326-17	Rodwin 769
326-18	Sawyer 986
326-19	Schmuelling 758
326-20	Synnestvedt 057
326-21	Woundy 464
326-22	DOCSIS-v1.0-I01 (“DOCSIS”)
326-23	Loukianov 075

Home Depot’s attached charts and tables provide citations to certain prior art references where information that anticipates and/or renders obvious the claimed inventions may be found, either expressly or inherently. There may, however, be additional support in the cited references or other grounds for Home Depot’s contentions that such prior art meets a particular claim element, and Home Depot reserves the right to supplement these Invalidity Contentions with such information. For example, persons of ordinary skill in the art at the time of the filing of the Patents-in-Suit knew to read prior art references as a whole (as opposed to excerpts in isolation), and in the context of other publications and literature as well as the general knowledge in the field. Home

Depot may rely on all such information, including uncited portions of the prior art references listed herein, and on other publications and testimony, to provide context and as aids to understanding and interpreting the listed references, or to establish that a person of ordinary skill in the art would have been motivated to modify or combine any of the cited references so as to render the claims obvious.

Some of the references on which Home Depot relies are prior art systems that were known, sold, and/or used prior to the priority date of the Patents-in-Suit. Home Depot is continuing to collect documentation, software, and source code regarding these prior art systems, including through third-party discovery. Home Depot reserves the right to supplement its contentions to include any further information obtained in discovery.

VI. INVALIDITY UNDER 35 U.S.C. § 112 (P.R. 3-3(D))

Home Depot identifies the following additional grounds for invalidity of the Asserted Claims based on 35 U.S.C. § 112 ¶¶ 1-2. Home Depot notes that its investigation is continuing, and fact discovery has not yet begun. Home Depot therefore is identifying those issues under 35 U.S.C. § 112 ¶¶ 1-2 of which it is currently aware. Home Depot reserves the right to supplement and/or amend its contentions if Plaintiffs change their infringement contentions or allegations in any way.

Home Depot's contentions regarding 35 U.S.C. § 112 ¶¶ 1-2 shall not be construed as an admission that any claim construction advanced by Home Depot in this case is in any way inconsistent, flawed, or erroneous. Nor should these contentions prevent Home Depot from advancing any claim construction and/or noninfringement positions. Further, these contentions shall not be construed as an admission of or acquiescence to Plaintiffs' apparent claim construction and interpretations or of other positions advanced by Plaintiffs during the course of this litigation.

Home Depot contends that one or more of the Asserted Claims are invalid as indefinite under 35 U.S.C. § 112 ¶ 2 requires that a patent “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112, ¶ 2. This “definiteness standard” requires “‘clear notice of what is claimed, thereby appris[ing] the public of what is still open to them.’” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370 (Fed. Cir. 2014) (quoting *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2128–29 (2014)). The “statute requires . . . ‘that a patent’s claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty.’” *Id.* (quoting *Nautilus*, 134 S. Ct. at 2129).

Home Depot contends that one or more of the Asserted Claims are invalid for failure to comply with the enablement and written description requirements under 35 U.S.C. § 112 ¶ 1. “To be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation.” *Trs. of Bos. Univ. v. Everlight Elecs. Co.*, 896 F.3d 1357, 1362 (Fed. Cir. 2018). Further, a specification has to “enable the full scope of the claimed invention.” *Id.* at 1364. Although a patent does not need to disclose everything that is well known in the art, reliance on what is known “cannot substitute for a basic enabling disclosure.” *Id.*

Further, the written description, drawings, and claims in a patent must clearly allow a person of ordinary skill in the art to understand and recognize that the patentee invented what is claimed. *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479 (Fed. Cir. 1998). In this regard, the patent must demonstrate by disclosure in the specification to those skilled in the art that the patentee had “possession” of what is now asserted to be the claimed invention. *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1561 (Fed. Cir. 1991). The written description must actually or

inherently disclose every claim element. *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306-07 (Fed. Cir. 2008). It is not enough to say that undisclosed subject matter would have been obvious or within the normal skill set of a person of ordinary skill. *ICU Medical, Inc. v. Alaris Medical Sys., Inc.*, 558 F.3d 1368, 1377 (Fed. Cir. 2009). A written description that discloses only a certain method does not “necessarily support a broad claim as to every possible type of [method], no matter how different in structure or operation from the inventor’s [discussion].” *LizardTech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 1346 (Fed. Cir. 2005). That is, an inventor’s description of one type of method does not entitle the inventor to claim “any and all means for achieving that objective.” *Id.*; see also *ICU Medical*, 558 F.3d at 1377–79.

A. ’686 Patent

The following claim limitations of the Asserted Claims are indefinite and are therefore invalid:

- Claim 1: “associated with a file”; “associated with said file”; “obtaining mapped data block numbers after applying the mapping function”
- Claim 2: “a mapping of the data block numbers and the mapped data block numbers”
- Claim 3: “based on the mapping function that is applied to the data block numbers”; “reading the data in the mapped data block numbers in the storage device”
- Claim 4: “allocating data block numbers”; “linking the data block numbers”; “applying the mapping function to the data block numbers in order to obtain the mapped data block numbers”

- Claim 5: “an equation that is applied to each data block number of the file”
- Claim 6: “selecting a complexity level of the mapping function in order to set a security level and efficiency of the mapping function”
- Claim 7: “if the mapping function is not applied to the data block numbers”
- Claim 8: “the mapping function prevents copying of data of the file in the storage device”
- Claim 9: “associated with a file”; “associated with said file”; “obtain mapped data block numbers after applying the mapping function”

The following claim limitations of the Asserted Claims lack enablement and/or written description and are therefore invalid:

- Claim 1: “applying a mapping function”; “obtaining mapped data block numbers after applying the mapping function, wherein the mapped data block numbers are addresses of data of the file in a storage device”
- Claim 3: “obtaining the mapped data block numbers of the file based on the mapping function that is applied to the data block numbers”
- Claim 4: “allocating data block numbers of free data blocks in the storage device”; “linking the data block numbers to a file name of the file”
- Claim 5: “ the mapping function is an equation that is applied to each data block number of the file”
- Claim 6: “selecting a complexity level of the mapping function in order to set a security level and efficiency of the mapping function”
- Claim 8: “the mapping function prevents copying of data of the file in the storage device”

- Claim 9: “apply a mapping function”; “obtain mapped data block numbers after applying the mapping function; wherein the mapped data block numbers are addresses of data of the file in a storage device”

B. '332 Patent

The following claim limitations of the Asserted Claims are indefinite and are therefore invalid:

- Claim 1: “running an application”; “determining by a discovery services module which of the one or more grid nodes are running an application associated with the added new version of the application release bundle”; “client application manager”; “hot deploying/redeploying the new version of the application release bundle on running one or more application servers”
- Claim 2: “client application manager”; “hot deploying/redeploying the new version of the application release bundle on running one or more application servers”
- Claim 3: “client application manager”; “hot deploying/redeploying the new version of the application release bundle on running one or more application servers”
- Claim 5: “the repository sewer”
- Claim 6: “client application manager”
- Claim 7: “the group consisting of ftp, http, gridftp, tcp, and udp”
- Claim 8: “the group consisting of Web containers, Web service containers, and EJB containers”

- Claim 9: “running an application”; “the one or more grid nodes”; “determining by a discovery services module which of the one or more grid nodes are running an application associated with the added new version of the application release bundle”; “client application manager”; “hot deploying/redeploying the new version of the application release bundle on running one or more application servers”

The following claim limitations of the Asserted Claims lack enablement and/or written description and are therefore invalid:

- Claim 1: “hot deployment and/or redeployment”; “grid computing environment”; “grid nodes” / “grid node”; “a type of data transfer protocol to use”; “hot deploying/redeploying”; “hot deployment plug-in”
- Claim 2: “hot deploying/redeploying”; “grid node”; “hot deployment plug-in”
- Claim 3: “hot deploying/redeploying”; “hot deployment plug-in”
- Claim 4: “grid nodes”
- Claim 5: “repository server”
- Claim 6: “grid nodes”
- Claim 8: “grid node”
- Claim 9: “grid computing environment”; “grid nodes” / “grid node”; “a type of data transfer protocol to use”; “hot deploying/redeploying”; “hot deployment plug-in”

C. '597 Patent

The following claim limitations of the Asserted Claims are indefinite and are therefore invalid:

- Claim 1: “intercepting the first message on a third network device prior to at least one first protocol server receiving the first message”; “one first protocol server”; “channel pairs” / “channel pair”; “predetermined resources”; “predetermined capabilities”; “determining capabilities of the second network device”; “the capabilities of the second network device”
- Claim 6: “one first protocol server”
- Claim 7: “provisioning-access manager network device”
- Claim 8: “capabilities of network devices”; “at least one predetermined channel pair”; “predetermined load factor”; “predetermined capacity”
- Claim 9: “predetermined type of network devices”
- Claim 10: “predetermined version of network devices”
- Claim 11: “predetermined type of customer premises equipment”
- Claim 12: “channel pairs”
- Claim 13: “the capabilities of the second network device”
- Claim 14: “channel pairs”
- Claim 16: “channel pairs”; “predetermined service area”
- Claim 20: “the capabilities of the second network device”

The following claim limitations of the Asserted Claims lack enablement and/or written description and are therefore invalid:

- Claim 1: “marking the first message with an identifier of a network access device”; “intercepting the first message on a third network device prior to at least one first protocol server receiving the first message”; “channel pairs”; “determining capabilities of the second network device”; “an assignment of the

second network device to one of the channel pairs”; “a load factor associated with the channel pair”; “a threshold value defining a capacity of the channel pair”; “capabilities of the second network device”

- Claim 4: “Medium Access Control address”
- Claim 5: “the first message comprises a Dynamic Host Configuration Protocol message”
- Claim 6: “the at least one first protocol server comprises at least one Dynamic Host Configuration Protocol server”
- Claim 7: “the third network device comprises a provisioning-access manager network device”
- Claim 8: “at least one condition associated with capabilities of network devices”; “channel pair”; “at least one predetermined channel pair having a predetermined load factor and a predetermined capacity”
- Claim 9: “a predetermined type of network devices”
- Claim 10: “a predetermined version of network devices”
- Claim 11: “a predetermined type of customer premises equipment associated with the second network device”
- Claim 12: “channel pairs”; “comparing the determined capabilities of the second network device with the at least one condition of each rule”; “a load factor of each pair type associated with the rule”; “a capacity of each pair type having the valid conditions”; “capabilities of the second network device”
- Claim 13: “examining the first message for parameters associated with the capabilities of the second network device”; “determine whether a configuration

information record exists in a database associated with the third network device”;
“capabilities of the second network device”

- Claim 14: “channel pairs”
- Claim 15: “channel pair”; “threshold value defining the capacity of the channel pair”; “the threshold value defining the capacity of the channel pair defines the maximum number of requests for the channel pair”
- Claim 16: “channel pairs”; “assigning the second network device to a predetermined service area based on the channel pair assigned to the second network device”; “the predetermined service area comprises a plurality of channel pairs compatible with the channel pair associated with the second network device”
- Claim 17: “an assignment of the second network device to one of the plurality of second protocol servers”; “Trivial File Transfer Protocol servers”
- Claim 20: “channel pair”; “capabilities of the second network device”; “load factor associated with the channel pair”; “threshold value defining the capacity of the channel pair”

D. '832 Patent

The following claim limitations of the Asserted Claims are indefinite and are therefore invalid:

- Claim 1: “relative to a threshold value for the performance”; “responding to a decline”; “based on said analyzed intercepted communications”; “by automatically reallocating at least some data on said storage device”; “to enhance continued operation of the storage device”

- Claim 2: “access time”
- Claim 3: “correcting said measured access time for system overhead”
- Claim 4: “intercepting an error reported by said storage device”
- Claim 5: “determining an access location on said storage device and an access frequency”
- Claim 6: “determining an access location on said storage device and an access duration”
- Claim 7: “said communications”
- Claim 8: “deriving said threshold value based on said logged communications”
- Claim 10: “usage patterns”; “based on usage patterns of said data”
- Claim 11: “defragmenting at least a portion of said storage device”
- Claim 25: “reallocating at least some of said data on said storage device to enhance the performance of said storage device based on said analyzed communications”
- Claims 25-26: “said data”

The following claim limitations of the Asserted Claims lack enablement and/or written description and are therefore invalid:

- Claim 1: “analyzing . . . relative to a threshold value for the performance”; “by automatically reallocating at least some data on said storage device”
- Claim 3: “correcting said measured access time for system overhead”
- Claim 5: “determining an access location on said storage device and an access frequency for data stored thereon”

- Claim 6: “determining an access location on said storage device and an access duration for data stored thereon”
- Claim 8: “deriving said threshold value based on said logged communications”
- Claim 9: “automatically backing-up data stored on said storage device”
- Claim 10: “usage patterns”; “based on usage patterns of said data”
- Claim 25: “reallocating at least some of said data on said storage device to enhance the performance of said storage device based on said analyzed communications”
- Claim 26: “determining access location, access frequency, and access duration for said data on said storage device”

E. '326 Patent

The following claim limitations of the Asserted Claims are indefinite and are therefore invalid:

- Claim 1: “the second network device intercepting the incoming message prior to at least one first protocol server receives the incoming message”; “a plurality of configuration settings”; “a plurality of configuration information settings”; “service level agreement”
- Claim 10: “class of service parameter”
- Claim 11: “class of service parameter”

The following claim limitations of the Asserted Claims lack enablement and/or written description and are therefore invalid:

- Claim 1: “marking an incoming message with an identifier of a network access device”; “intercepting the incoming message prior to at least one first protocol server receives the incoming message”; “managing an assignment of a plurality of configuration settings based on the identifier”; “configuration information records”; “configuration information settings”; “service level agreement”
- Claim 4: “Dynamic Host Configuration Protocol message”; “the incoming message comprises a Dynamic Host Configuration Protocol message”
- Claim 5: “the at least one first protocol server comprises at least one Dynamic Host Configuration Protocol server”
- Claim 6: “service provider identifier”
- Claim 7: “service provider identifier”; “forward the incoming message to a service provider associated with the identifier, the service provider comprising a Dynamic Host Configuration Protocol server”
- Claim 8: “configuration file identifier”
- Claim 9: “configuration file identifier”; “configuration file”; “Trivial File Transfer Protocol server”; “inserts the path of the configuration file into the incoming message”
- Claim 10: “class of service parameter”
- Claim 11: “class of service parameter”; “assign an Internet Protocol address to a network device”; “Internet Protocol address pool associated with the class of service parameter”
- Claim 13: “the data-over-cable system”; “a record of partial identifiers associated with network access devices that have an access to the data-over-cable system”

- Claim 14: “the data-over-cable system”; “determine whether the network access device has an access in the data-over-cable system”
- Claim 15: “Medium Access Control network address”
- Claim 16: “configuration information records”; “global server configuration options for network devices”

VII. PATENT INELIGIBILITY UNDER 35 U.S.C. § 101

Pursuant to the Court’s Standing Order Regarding Subject Matter Eligibility Contentions, Home Depot provides its contentions that all Asserted Claims are invalid as being directed to a patent ineligible abstract idea without an inventive concept that would transform the claim into patent eligible subject matter, in contravention of the requirements of 35 U.S.C. § 101. *See generally Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 134 S. Ct. 2347 (2014).

The Asserted Claims are directed to ineligible subject matter, namely, an abstract idea. In the first step of a § 101 analysis under *Alice*, “the claims are considered in their entirety to ascertain whether their character as a whole is directed to excluded subject *matter*.” *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015). While the Supreme Court has not “delimit[ed] the precise contours of the ‘abstract ideas’ category” (*Alice*, 134 S. Ct. at 2357), “courts have generally sought to ‘compare claims at issue to those claims already found to be directed to an abstract idea in previous cases.’” *D&M Holdings Inc. v. Sonos, Inc.*, No. 16-141-RGA, 2017 WL 1395603, at *3 (D. Del. Apr. 18, 2017), quoting *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016).

The Asserted Claims fail the second step of the *Alice* test because they do not contain an “inventive concept.” They merely recite an abstract idea (discussed above) implemented using generic computing or Internet technology to “perform well-understood, routine, and conventional

activities commonly used in the industry.” *Content Extraction & Transmission LLC v. Wells Fargo Bank, NA*, 776 F.3d 1343, 1348 (Fed. Cir. 2014). The Asserted Patents contain no inventive concept amounting to “significantly more” than the claimed abstract idea itself. See *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 72-73 (2012). The elements of the Asserted Claims, whether taken together or individually, are well-understood, routine, and conventional for purposes of subject matter eligibility and use admittedly technology-agnostic and generic hardware, software and firmware. See Section IV (above); Exhibits 686-E, 332-E, 597-E, 832-E, and 326-E; see generally Plaintiffs Infringement Contentions. These steps provide no inventive concept because “the function performed by the computer at each step of the process” of the Asserted Patent is “[p]urely conventional.” *Alice*, 134 S. Ct. at 2359 (quoting *Mayo*, 566 U.S. at 72-73) (alteration in original); see also *Alice*, 134 S. Ct. at 2357 (explaining that conventional steps specified at a high level of generality are insufficient to supply an “inventive concept”).

The following chart identifies Home Depot’s position and references Exhibits 686-E, 332-E, 597-E, 832-E, and 326-E for additional information.

Patent	Claims	Representative Claim(s)	Exception to Eligibility	Factual and Legal Basis/Industry Description/Element by Element Description
'686 patent	1-9	1	Abstract Idea	Defendants incorporate by reference Exhibit 686-E.
'332 patent	1-9	1	Abstract Idea	Defendants incorporate by reference Exhibit 332-E.
'597 patent	1-18, 20	1	Abstract Idea	Defendants incorporate by reference Exhibit 597-E.
'832 patent	1-11 and 25-26	1	Abstract Idea	Defendants incorporate by reference Exhibit 832-E.
'326 patent	1-18	1	Abstract Idea	Defendants incorporate by reference Exhibit 326-E.

VIII. DISCLOSURES PURSUANT TO P.R. 3-4

The accused products are software provided by third parties and, for that reason, it is Home Depot's understanding that source code relevant to those accused products will be in the possession, custody, or control of such third parties, not Home Depot. Nonetheless, Home Depot is providing a P.R. 3-4(a) production at HD-VALTRUS-0007854 – HD-VALTRUS-0011102. Further, pursuant to P.R. 3-4(b) and the Court's Standing Order for Eligibility Contentions, Home Depot is producing herewith copies of the prior art referenced in their Preliminary Invalidity Contentions and Eligibility Contentions at HD-VALTRUS-0000001 – HD-VALTRUS-0007853.

Home Depot reserves the right to supplement this production as the case progresses, including but not limited to, producing or making additional documents available for inspection.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on July 11, 2025, a true and correct copy of the foregoing document was caused to be served on all counsel of record who are deemed to have consented to electronic service via email pursuant Local Rule CV-5(d).

/s/ Michael Strapp
Michael Strapp