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

CROGA INNOVATIONS LTD., Plaintiff, v. CISCO SYSTEMS, INC., Defendant.	Case No. 2:24-cv-00065-JRG (Lead Case) **JURY TRIAL DEMANDED**
CROGA INNOVATIONS LTD., Plaintiff, v. FORTINET, INC., Defendant.	Case No. 2:24-cv-00206-JRG (Member Case) **JURY TRIAL DEMANDED**
CROGA INNOVATIONS LTD., Plaintiff, v. PALO ALTO NETWORKS, INC., Defendant.	Case No. 2:24-cv-00208-JRG (Member Case) **JURY TRIAL DEMANDED**

DEFENDANTS' PRELIMINARY INVALIDITY CONTENTIONS

Pursuant to Local Patent Rules 3-3 and 3-4 and the Court's First Amended Docket Control Order (Dkt. No. 53) Defendants Cisco Systems, Inc. ("Cisco"), Fortinet, Inc. ("Fortinet"), and Palo Alto Networks, Inc. ("PAN") (collectively, "Defendants") hereby set forth their Preliminary Invalidity Contentions concerning U.S. Patent No. 7,738,368 (the "'368 Patent"), U.S. Patent No.

10,601,780 (the "'780 Patent"), and U.S. Patent No. 11,223,601 (the "'601 Patent") (collectively, the "Asserted Patents").

For Cisco, Plaintiff Croga Innovations Ltd. ("Croga") asserts that Cisco infringes claim 1 of the '368 Patent, claims 1, 3, 9, 10, 11, 13, 19, 20 of the '780 Patent, and claims 1, 2, 4, 5, 6, 7, 9, 10, 12, 13, 14, 15 of the '601 Patent (collectively, the "Cisco Asserted Claims"). Cisco contends that each of the Cisco Asserted Claims is invalid under at least one or more of 35 U.S.C. §§ 101, 102, 103, and 112.

For Fortinet, Croga asserts that Fortinet infringes claims 11, 13, 14, and 20 of the '780 Patent (collectively, "Fortinet Asserted Claims"). Fortinet contends that each of the Fortinet Asserted Claims is invalid under at least one or more of 35 U.S.C. §§ 102, 103, and 112.

For PAN, Croga asserts that PAN infringes claims 1, 2, 4, 5, 6, 7, 9, 10, 12, 13, 14, 15 of the '601 Patent (collectively, "PAN Asserted Claims") (collectively the Cisco Asserted Claims, Fortinet Asserted Claims, and PAN Asserted Claims are the "Asserted Claims"). PAN contends that each of the PAN Asserted Claims is invalid under at least one or more of 35 U.S.C. §§ 102, 103, and 112.

These Preliminary Invalidity Contentions: (i) identify each prior art reference that Defendants are currently aware of that either anticipates or renders obvious one or more of the Asserted Claims; (ii) specify whether each such reference anticipates or renders obvious the applicable claims, and in the event a combination with one or more other such references renders obvious the applicable claims, identify each such combination and the motivation to combine such references; (iii) include charts, for illustrative prior art references, citing exemplary disclosures in those references that anticipate or render obvious each of the elements of the applicable claims; and (iv) identify grounds for invalidating asserted claims based on lack of patentable subject matter

under 35 U.S.C. § 101, or indefiniteness, enablement, or written description under 35 U.S.C. § 112. These contentions relate only to invalidity, and do not include any contention or position beyond the issue of invalidity (e.g., non-infringement or claim construction).

Defendants' discovery and investigation in this lawsuit is ongoing, and these contentions are based only on the information Defendants have obtained to date. For example, Defendants have not had the opportunity to complete third-party discovery relating to various third-party prior art and expressly reserves the right to amend these contentions subject to third-party discovery. These third parties may include, without limitation, the authors, inventors, or assignees of prior art references identified in these contentions. Defendants also reserve the right to amend the contentions due to Croga's failure to produce prior art known to it, including prior art identified by its own investigations, other accused infringers or third parties as to the Asserted Patents or related patents. To date, Croga has not produced any prior art to Defendants. Defendants reserve their right to supplement and/or amend these contentions consistent with the Federal Rules of Civil Procedure, the Local Rules, and any orders from the Court.

These Preliminary Invalidity Contentions are based upon Defendants' present understanding of the Asserted Claims, Croga's May 15, 2024 Disclosure of Asserted Claims and Infringement Contentions to each Defendant ("Initial Infringement Contentions"), Croga's July 16, 2024 Supplemental Disclosure of Asserted Claims and Infringement Contentions to Cisco, Croga's June 14, 2024 Supplemental Disclosure of Asserted Claims and Infringement Contentions to Fortinet, and Croga's July 25, 2024 Supplemental Disclosure of Asserted Claims and Infringement Contentions to PAN ("Supplemental Infringement Contentions") (collectively Croga's "Infringement Contentions"). Defendants do not concede that any (apparent) claim constructions are correct. Even though Defendants contend that the Asserted Claims are indefinite,

Defendants have disclosed which prior art render those claims invalid based upon Croga's contention that those claims are definite. Defendants' assertion of prior art is not a concession as to the meaning, definiteness, written description support for, or enablement of any of the Asserted Claims, or that the Asserted Patents properly claim patent eligible subject matter. If Croga amends its Infringement Contentions, Defendants reserve the right to amend its Preliminary Invalidity Contentions, and Defendants note that Croga's Infringement Contentions fail to provide sufficient notice of Croga's infringement theories as required by the Local Rules. Indeed, Cisco and PAN served Croga correspondence explaining how Croga's Infringement Contentions were deficient and Croga's Supplemental Infringement Contentions did not address each of the deficiencies identified by Cisco and PAN.

Defendants take no position on any matter of claim construction in its Preliminary Invalidity Contentions. Any statement herein describing or tending to describe any claim element is provided solely for the purpose of understanding the relevant prior art. Defendants expressly reserve the right to propose any claim construction it considers appropriate and/or to contest any claim construction it considers inappropriate. Moreover, Defendants' Preliminary Invalidity Contentions are made in some instances based upon Croga's apparent interpretation of the Asserted Claims in its Infringement Contentions and should be viewed accordingly. Further, by including in these contentions prior art that would be anticipatory or render a claim obvious based on a particular scope or construction of the claims, Defendants' Preliminary Invalidity Contentions herein are not, and should in no way be seen as, adoptions or admissions as to the accuracy of such scope or construction. The Court has not yet construed the Asserted Claims, and Defendants reserve the right to amend these Preliminary Invalidity Contentions in accordance with the local patent rules, including after the issuance of the Court's claim construction order.

By submitting these Preliminary Invalidity Contentions, Defendants do not waive any of its claims or defenses in this case, including those relating to lack of patentable subject matter, written description, enablement, indefiniteness, anticipation, and obviousness. References not included in these Preliminary Invalidity Contentions, whether known or not now known, may become relevant based on the claim constructions adopted by the Court, based on any amendment or supplement that Croga may be permitted to make to its Infringement Contentions, and/or based on discovery in this case.

I. Priority Dates Of The Asserted Patents And Claims

Croga asserts the following alleged priority dates for the Asserted Patents:

- ’368 Patent – Nov. 10, 2005
- ’780 Patent – Jan. 27, 2011
- ’601 Patent – Sept. 28, 2017

It is Croga’s burden to show that each Asserted Claim is entitled to the alleged priority date. Defendants presently contend that Croga has failed to meet its burden to establish its asserted priority dates as outlined below.

a) The ’368 Patent is Not Entitled to Priority Earlier Than Its Non-Provisional Application Filing Date.

Croga contends that “[e]ach asserted claim of the ’368 Patent is entitled to ***at least*** a priority date of Nov. 10, 2005.” Infringement Contentions Cover Pleading at 8 (emphasis added). Cisco notes that pursuant to Local Patent Rule 3-2(b), Croga was required to disclose with its Infringement Contentions “[a]ll documents evidencing the conception, reduction to practice, design, and development of each claimed invention, which were created on or before the date of application for the patent in suit ….” Croga’s Infringement Contentions and accompanying

document productions fail to identify any evidence corroborating a conception date earlier than the Nov. 10, 2005 non-provisional filing date.

b) The ’780 Patent is Not Entitled to Plaintiff’s Alleged Priority Date.

Croga asserts that the ’780 Patent is entitled to a priority date of Jan. 27, 2011 based on U.S. Provisional Patent Application No. 61/436,932 (the “’932 provisional”). But the ’932 provisional fails to disclose adequate support for any Asserted Claim of the ’780 Patent sufficient to meet the requirements of 35 U.S.C. § 112. For example, the ’932 provisional fails to disclose, as required by 35 U.S.C. § 112, at least the following claim elements:

- “[A] processor and a memory configured to implement network isolation between one or more untrusted network destinations and the networked computer system”;
- “[T]he host system is configured to store data in a host memory space and the virtual system is configured to store data in a virtual memory space that is segregated from the host memory space”; and
- “[T]he one or more applications or processes running in the virtual system are configured to communicate with the one or more untrusted network destinations.”

c) The ’601 Patent is Not Entitled to Plaintiff’s Alleged Priority Date.

Croga asserts that the ’601 Patent is entitled to a priority date of Sept. 28, 2017 based on U.S. Provisional Patent Application No. 62/564,371 (the “’371 provisional”). But the ’371 provisional fails to disclose adequate support for any Asserted Claim of the ’601 Patent sufficient to meet the requirements of 35 U.S.C. § 112. For example, the ’371 provisional fails to disclose, as required by 35 U.S.C. § 112, at least the following claim elements:

- “[A]uthenticate the isolated computing environment with an authentication device”;

- "[S]end data to an untrusted destination from the multi-user interactive software application via a proxy device when the isolated computing environment has been authenticated";
- "[T]he host-based firewall isolates the system from communicating with one or more other devices on the network"; and
- "[O]ne or more trusted applications communicate with one or more trusted machines via the network."

II. Invalidity Based Upon Prior Art

Cisco contends that each of the Cisco Asserted Claims is invalid as anticipated under 35 U.S.C. § 102 and/or obvious under 35 U.S.C. § 103. Cisco's detailed contentions regarding the Asserted Claims in claim chart form are attached as Exhibits A-1 through A-7, B-1 through B-12, C-1 through C-11, and D-1 through D-3. Those charts disclose how each reference, or combination of references, anticipates and/or renders obvious each of the Cisco Asserted Claims.

Fortinet contends that each of the Fortinet Asserted Claims is invalid as anticipated under 35 U.S.C. § 102 and/or obvious under 35 U.S.C. § 103. Fortinet's detailed contentions regarding the Asserted Claims in claim chart form are attached as Exhibits B-1 through B-12 and D-2. Those charts disclose how each reference, or combination of references, anticipates and/or renders obvious each of the Fortinet Asserted Claims.

PAN contends that each of the PAN Asserted Claims is invalid as anticipated under 35 U.S.C. § 102 and/or obvious under 35 U.S.C. § 103. PAN's detailed contentions regarding the Asserted Claims in claim chart form are attached as Exhibits C-1 through C-11 and D-3. Those

charts disclose how each reference, or combination of references, anticipates and/or renders obvious each of the PAN Asserted Claims.

Defendants claim charts disclose multiple theories of invalidity in a single chart. For example, each chart directed to an anticipatory publication also discloses how that reference alone or in combination with one or more other references and/or the knowledge of one of ordinary skill in the art renders one or more of the Asserted Claims obvious. Exhibits A-1 through D-3 identify exemplary disclosures within the prior art that teach the relevant claim elements and limitations. While the claim charts have identified citations in the references for the claim limitations, each and every disclosure of the same limitation in the same reference is not necessarily identified. For example, whenever Exhibits A-1 through D-3 include a figure, diagram, table, or drawing, all of the text associated with that figure, diagram, table, or drawing is incorporated by reference (even if that text is not explicitly cited in the exhibit). Similarly, if an exhibit includes the text associated with a figure, diagram, table, or drawing, the described figure, diagram, or drawing is incorporated by reference (even if that figure, diagram, table, or drawing is not explicitly cited). Further, persons of ordinary skill in the art read a prior art reference as a whole, and in the context of other references, publications or literature. Thus, Defendants may also rely on uncited portions of the prior art references, any cited documents within any prior art reference, other references, and the testimony of experts to establish that the limitations of the Asserted Claims are anticipated or rendered obvious and/or that a person of ordinary skill in the art would have been motivated to modify or combine certain of the cited references so as to render the claims obvious.

Defendants base these claim charts in part upon the infringement positions taken by Croga. These claim charts in no way indicate that Defendants agree with or adopt Croga's positions or claim constructions. Defendants reserve the right to propose and argue for different positions and

different constructions of the claim language. Nothing herein should be construed as setting forth or limiting Defendants' claim construction positions. To the extent that any of the prior art references discloses the same feature or functionality of the accused instrumentalities based on Croga's apparent interpretation of the Asserted Claims, Defendants reserve the right to argue that such feature or functionality does not meet any limitation of any of the Asserted Claims of the Asserted Patents.

a) Anticipation

Defendants identify below prior art, including references and systems which anticipate one or more Asserted Claims, and/or render obvious one or more of the Asserted Claims, either alone or in combination with what was known to a skilled artisan at the time and/or one or more other prior art references.

1. Patents and Patent Publications

Abbreviated Name	Patent No. or Publication No.	Country of Origin	Filing Date	Issuance or Publication Date	Claim Chart No.	Production No.
Everson '998	US 7,768,998	U.S.A.	Jun. 13, 2005	Aug. 3, 2010	A-1	CROGA-PA-00001560
Mundra '860	US 2004/0032860	U.S.A.	Aug. 19, 2002	Feb. 19, 2004	A-2	CROGA-PA-00001561
Bauer '556	US 2001/008556	U.S.A.	Feb. 14, 2001	Jul. 19, 2001	A-3	CROGA-PA-00001562
Shaffer '734	US 6,731,734	U.S.A.	Aug. 19, 1999	May 4, 2004	A-4	CROGA-PA-00001563
Shaffer '839	US 7,023,839	U.S.A.	Aug. 19, 1999	Apr. 4, 2006	A-5	CROGA-PA-00001564
Kakimoto '749	US 2007/0195749	U.S.A.	Sep. 12, 2006	Aug. 23, 2007	A-6	CROGA-PA-00000912
Wookey '821	US 2007/0171921	U.S.A.	Nov. 14, 2006	Jul. 26, 2007	B-1 & C-3	CROGA-PA-00000942
Delco '474	US 8,166,474	U.S.A.	Sep. 19, 2005	Apr. 24, 2012	B-3	CROGA-PA-00000913
Banga '412	US 2011/0296412	U.S.A.	May 25, 2011	Dec. 1, 2011	B-5	CROGA-PA-00000914

Abbreviated Name	Patent No. or Publication No.	Country of Origin	Filing Date	Issuance or Publication Date	Claim Chart No.	Production No.
Miller ’136	US 2006/0090136	U.S.A.	Oct. 1, 2004	Apr. 27, 2006	B-6	CROGA-PA-00000936
Thomas ’194	US 2009/0241194	U.S.A.	Mar. 21, 2008	Sep. 24, 2009	B-7	CROGA-PA-00001519
Todorovic ’363	US 2010/0251363	U.S.A.	Mar. 24, 2009	Sep. 30, 2010	B-8	CROGA-PA-00000915
Tremain ’079	US 7,448,079	U.S.A.	Jul. 3, 2001	Nov. 4, 2008	B-9	CROGA-PA-00000932
Walsh ’187	US 8,640,187	U.S.A.	May 28, 2010	Jan. 28, 2014	C-1	CROGA-PA-00000940
Jeffries ’189	US 10,885,189	U.S.A.	May 22, 2017	Jan. 5, 2021	C-2	CROGA-PA-00000941
Austin ’964	US 2016/0306964	U.S.A.	Apr. 13, 2016	Oct. 20, 2016	C-5	CROGA-PA-00001565

2. Prior Art Systems

The following prior art systems render the Asserted Claims invalid because they were known or used by others in the United States before the priority date of the Asserted Claims, in public use or on sale in the United States more than one year prior to the date of the application for the Asserted Patents in the United States and/or were in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention. The systems disclosed below are described in various cited publications and other materials, which also independently form a basis for invalidity based upon their publication. Multiple versions or implementations of any of the disclosed systems may exist—Defendants expressly reserve the right to rely upon other versions and implementations of these systems. Defendants expect that third-party discovery will yield more information relating to the disclosed systems and reserves the right to amend or supplement these Preliminary Invalidity Contentions as discovery progresses in this matter. As an example, Defendants expect that discovery may be taken on one or more authors of the invalidating references describing these systems, and Defendants reserve the right

to and anticipate that it will amend these Preliminary Invalidity Contentions after receiving such discovery.

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
OpenH323	A-7	Welcome to the OpenH323 Project	Dec. 4, 2003	CROGA-PA-00002260
		OpenH323 Download Page	Dec. 4, 2003	CROGA-PA-00001484
		OpenH323 Gatekeeper – The GNU Gatekeeper	Sept. 22, 2004	CROGA-PA-00001485
		OpenH323 Gatekeeper – The GNU Gatekeeper – Manual	Sept. 22, 2004	CROGA-PA-00001486
		OpenH323 Gatekeeper – The GNU Gatekeeper – Introduction	Sept. 22, 2004	CROGA-PA-00001487
		OpenH323 Gatekeeper – The GNU Gatekeeper – Compiling and Installing	Sept. 22, 2004	CROGA-PA-00001488
		OpenH323 Gatekeeper – The GNU Gatekeeper – Getting Started (Tutorial)	Sept. 22, 2004	CROGA-PA-00001489
		OpenH323 Gatekeeper – The GNU Gatekeeper – Using the Gatekeeper (Reference)	Sept. 22, 2004	CROGA-PA-00001490
		OpenH323 Gatekeeper – The GNU Gatekeeper – Monitoring the Gatekeeper (Reference)	Sept. 22, 2004	CROGA-PA-00001491
		What is the Open H323 project?	Oct. 15, 2004	CROGA-PA-00001492
		What is the H.323 protocol?	Oct. 15, 2004	CROGA-PA-00001493
		What version of H.323 does OpenH323 implement?	Oct. 16, 2004	CROGA-PA-00001494
		Applications	Oct. 18, 2004	CROGA-PA-00001495

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
		Recommendation H.323 (11/00)	Nov. 1, 2001	CROGA-PA-00001496
		OpenH323 Class Library Architecture	Jan. 4, 2001	CROGA-PA-00001498
		OpenH323 Call Thread	Nov. 20, 2001	CROGA-PA-00001499
		OpenH323 Neg Logical Channels	Nov. 20, 2001	CROGA-PA-00001500
		OpenH323 Channel Start Receive	Nov. 20, 2001	CROGA-PA-00001501
		OpenH323 Channel Start Transmit	Nov. 20, 2001	CROGA-PA-00001502
		OpenH323 Endpoint makeCall	Nov. 20, 2001	CROGA-PA-00001503
		Codec Bandwidth and Latency Calculations	Dec 4, 2003	CROGA-PA-00001504
		OpenH323 – Project Documents	Dec 4, 2003	CROGA-PA-00001507
		GNU Gatekeeper – Events	July 19, 2024	CROGA-PA-00001505
		GnuGk – The GNU Gatekeeper, Michael Zygmuntowicz	Jan. 19, 2004	CROGA-PA-00001497
		GnuGk – The GNU Gatekeeper, Michael Zygmuntowicz and Jan Williamowius	Jan 17, 2005	CROGA-PA-00001506
		H.323v4 Standard	Nov. 1, 2000	CROGA-PA-00001508
		OpenH323 v.1.12.2 Source Code	Aug. 19, 2003	CROGA-PA-00001039 to

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
				CROGA-PA-00001482; CROGA-PA-00001579 to CROGA-PA-00001974; CROGA-PA-00001994 to CROGA-PA-00002183
		GnuGKv.2.0.8 Source Code	Jun. 1, 2004	CROGA-PA-00000001 to CROGA-PA-00000907
VMware vShield	B-2 & C-4	vShield Quick Start Guide	2010, 2011	CROGA-PA-00000908
		VMware vShield Edge Design Guide: Technical White Paper	2011	CROGA-PA-00000950
		vShield Installation and Upgrade Guide	2010-2013	CROGA-PA-00000948
		VMware vShield Zones: Reviewer's Guide	2010	CROGA-PA-00000947
		vShield API Programming Guide	2010	CROGA-PA-00000946
		vShield Administration Guide	2010-2012	CROGA-PA-00000949

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
		VMware Infrastructure 3 Security Hardening	2007	CROGA-PA-00000943
		Introduction to vShield Zones: vShield Zones 1.0	2009	CROGA-PA-00000945
		Basak et. al, *Virtualizing Networking and Security in the Cloud*, 44 ACM SIGOPS OPERATING SYSTEMS REVIEW 86	Dec. 12, 2010	CROGA-PA-00000933
		Best Practices for Building Virtual Appliances	2007	CROGA-PA-00002214
		Getting Started with ESXi Installable, VMWARE	2011	CROGA-PA-00000951
		Josh Townsend, *vShield Endpoint with vSphere 6.0*	May 21, 2015	CROGA-PA-00002279
IBM System z	B-4 & C-6	Frank Injey, *IBM System z10 Enterprise Class Configuration Setup*, IBM REDBOOKS	July 2008	CROGA-PA-00000956
		Per Fremstad, *IBM System z10 Enterprise Class Technical Guide*, IBM REDBOOKS	Nov. 2009	CROGA-PA-00000957
		Marian Gasparovic, *IBM System z10 Business Class Technical Overview*, IBM REDBOOKS	Nov. 2009	CROGA-PA-00000955
		Alan Altmark, *Security Zones on IBM System z: Defining and Enforcing Multiple Security Zones*, IBM REDBOOKS	Feb. 16, 2011	CROGA-PA-00000953
		Paola Bari et al., *Security on z/VM*, IBM REDBOOKS	Nov. 2007	CROGA-PA-00000952
		Lydia Parziale et al., *Introduction to the New Mainframe: z/VM Basics, IBM Redbooks*	Nov. 2007	CROGA-PA-00000954
		IBM VM 50th Anniversary, IBM	Aug 3, 2022	CROGA-PA-00002257
Windows Virtualization	B-10 & C-10	*Windows Server 2008 R2 Technical Overview*	2009	CROGA-PA-00001008

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
		Windows Server 2008 Hyper-V Product Overview - An Early Look	2007	CROGA-PA-00001010
		Achieving High Availability for Hyper-V, Steven Ekern, Technet Magazine	Feb. 2009	CROGA-PA-00000991
		Windows Server Virtualization: Hyper-V an Introduction, Jaap Wesselius, Redgate Hub,	June 2009	CROGA-PA-00001006
		Hyper-V Server 2008 Getting Started Guide, Cynthia Nottingham	2008	CROGA-PA-00001000
		Hyper-V Security Guide	2009	CROGA-PA-00000997
		Windows Server 2008 R2 Hyper-V Feature Overview Deck	2010	CROGA-PA-00001009
		Windows Server 2008 R2 Hyper-V Component Architecture	2010	CROGA-PA-00001007
		Storage and Hyper-V: The Choices You Can Make and the Things You Need To Know, Jeff Woolsey	2009	CROGA-PA-00001004
		Mastering Hyper-V Deployment, Adin Finn et al	2011	CROGA-PA-00002211
		Windows Server 2008 Hyper-V Technical Overview	2008	CROGA-PA-00000999
		Hyper-V Data Sheet	2008	CROGA-PA-00002256
		Microsoft Hyper-V Networking and Configuration – Part 1, Nirmal Sharma	2009	CROGA-PA-00001002
		Microsoft Hyper-V Networking and Configuration – Part 2, Nirmal Sharma	2009	CROGA-PA-00001001
		DMZ Isolation of VMs With Hyper-V, Brian Eh	2008	CROGA-PA-00000995

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
		Can I Mix LAN and DMZ/Internet VMs On A Hyper-V Host/Cluster	2011	CROGA-PA-00000994
		Hyper-V and VLANs	2009	CROGA-PA-00000996
		Windows Server 2008 Hyper-V: Insiders Guide to Microsoft's Hypervisor, John Kelbley et. al	2009	CROGA-PA-00002212
		Understanding Microsoft Virtualization Solutions: From the Desktop to Datacenter, Mitch Tulloch	2010	CROGA-PA-00001013
		Windows Server 2008 R2: Remote Desktop Services Component Architecture	2007	CROGA-PA-00001003
		Microsoft Virtual PC 2007 Technical Overview,	2007	CROGA-PA-00001005
		The History of Windows Server Containers and Docker, Cian Allner	April 19, 2017	CROGA-PA-00002192
		Windows Containers Debut in New Windows Server 2016 Preview, Jeffrey Schwartz	Aug. 19, 2015	CROGA-PA-00002193
Citrix XenApp	B-11 & C-8	Citrix XenApp 5 Breaks Performance, User Experience and Cost Barriers to Expand Application Virtualization Adoption	Aug. 25, 2008	CROGA-PA-00001019
		Citrix XenApp 6 Sets New Standard in On-Demand App Delivery for Physical and Virtual Desktops	Mar. 10, 2010	CROGA-PA-00002242
		XenDesktop 5 - Now available for immediate download	Dec. 2010	CROGA-PA-00001027
		Citrix XenServer 5.6 Now Available	June 2, 2010	CROGA-PA-00001018
		Citrix XenApp; Deliver applications on-demand to any user anywhere	Jan 13, 2010	CROGA-PA-00002241
		Dynamic Application Delivery with Citrix XenApp; How application virtualization works	Jan. 10, 2010	CROGA-PA-00002239

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
		An in-depth look at Citrix XenApp - How XenApp delivers virtual applications	Jan. 13, 2010	CROGA-PA-00002244
		An in-depth look at Citrix XenApp - XenApp Architecture for Application Management	Jan. 17, 2010	CROGA-PA-00002237
		An in-depth look at Citrix XenApp - Features by Edition	Jan. 9, 2010	CROGA-PA-00002238
		An in-depth look at Citrix XenApp - Additional Technical Resources	Jan. 17, 2010	CROGA-PA-00002245
		Citrix XenApp on Microsoft Remote Desktop Services: Feature Analysis	Oct. 25, 2009	CROGA-PA-00002283
		Citrix, *"The leading application virtualization solution for delivering all client/server applications"*	April 23, 2006	CROGA-PA-00002240
		Tariq Azad, "*Securing Citrix XenApp Server in the Enterprise.* Syngress	2008	CROGA-PA-00001016
		Casselman et al., *"Citrix® XenApp™ Platinum Edition for Windows: The Official Guide"*, McGraw Hill	2009	CROGA-PA-00001037
		Citrix Systems "Citrix Presentation Server Security Standards and Deployment Scenarios,"	2007	CROGA-PA-00001020
		Cisco Systems, "Cisco Validated Design: Reference Architecture-Based Design for Implementation of Citrix XenDesktop on Cisco Unified Computing System, VMware vSphere and NetApp Storage,"	2010	CROGA-PA-00001023
		Citrix Systems, "Citrix XenServer Administrator's Guide: Release 5.5.0"	Feb. 2010	CROGA-PA-00001011
		Citrix Systems, "Desktop Virtualization: A buyer's checklist"	2009	CROGA-PA-00001028
		Citrix Systems, "Product Development Team, Citrix XenApp™ Platinum Edition Advanced Concepts: The Official Guide 3rd Edition", McGraw Hill	2008	CROGA-PA-00001025

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
		Microsoft Corporation, *"Windows Server Virtualization – An Overview" Microsoft*	2006	CROGA-PA-00001026
		Microsoft Corporation, *"Virtual Server Security"*	Oct. 2011	CROGA-PA-00002277
		Microsoft Corporation, *"Virtual Server Architecture"*	Aug. 27, 2009	CROGA-PA-00002275
		Microsoft Corporation, *"Virtual Machine Monitor"*	Jan. 25, 2010	CROGA-PA-00002274
		Microsoft Corporation, *"Virtual Server Service"*	May 22, 2009	CROGA-PA-00002276
		Mitch Tulloch with the Microsoft Virtualization Teams, *"Understanding Microsoft Virtualization Solutions – From the Desktop to the Datacenter"* 2nd Edition	2010	CROGA-PA-00001013
		Vinny Sosa, Citrix XenApp Technical Marketing, "Evaluation Virtual Appliance Quick Start Guide for Citrix XenApp" Citrix Systems	2009	CROGA-PA-00001022
		Citrix Systems, "Citrix Presentation Server Administrator's Guide"	2007	CROGA-PA-00001012
		Citrix Systems, *"Virtualization"*	May 5, 2016	CROGA-PA-00002278
		Marc Trouard-Riolle, *"Citrix XenServer v6.5 SP1: Double Density, Docker Containers and Enhanced Graphics Support!"*	Aug. 14, 2016	CROGA-PA-00002230
		James Bulpin, *"Containers or Virtual Machines? It Doesn't Have to Be One or the Other"* Citrix Systems	May 16, 2016	CROGA-PA-00002247
		Stuart Mathews, *"Part 1: Introduction to Isolation Groups in XenDesktop"* Citrix	Sept. 27, 2016	CROGA-PA-00002262
		Citrix, *"Getting Started with Citrix XenApp and XenDesktop Security"*	2016	CROGA-PA-00001546

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
		Citrix, *"Citrix XenApp 6.5 Administration"*	2011	CROGA-PA-00001038
		Guillermo Musemeci, *"Getting Started with Citrix XenApp 6.5"* PACKT Publishing	2012	CROGA-PA-00001032
		Citrix, *"Desktop Virtualization"*	2010	CROGA-PA-00002243
		Citrix, *"App-V"*	Nov. 2, 2015	CROGA-PA-00001029
		Citrix, *"Demo: Citrix Cloud XenApp and XenDesktop Service"*	Jan. 6, 2016	CROGA-PA-00002251
		Citrix, *"Baloise Group uses Citrix Workspace Suite to provide true flexibility to employees"*	Jan. 19, 2016	CROGA-PA-00002235
		Citrix, *"Citrix Secure Browser – Publish Web Apps Securely in Minutes"*	Mar. 24, 2016	CROGA-PA-00001568
		Citrix, *"XenApp Secure Browser Deployment Guide"*	2016	CROGA-PA-00001543
		Bitdefender Enterprise, *"Demo of Secure Browsing with Bitdefender HVI & XenApp"*	Jan. 18, 2017	CROGA-PA-00002250
		Citrix, *"Secure Browsing – powered by Citrix XenApp, Citrix XenServer Direct Inspect APIs and Bitdefender HVI"*	2016	CROGA-PA-00001542
		Citrix, *"Dare to Compare - Citrix XenApp vs VMware Horizon View - User Experience"*	May 24, 2016	CROGA-PA-00002248
		Citrix, *"7.15 LTSR (initial release)"*	April 4, 2017	CROGA-PA-00002231
		Citrix, *"It's Beginning to Look a Lot Like … XenServer 7.2!"*	May 30, 2017	CROGA-PA-00002259
Citrix Secure	C-7	Secure Browsing – powered by Citrix XenApp, Citrix XenServer Direct Inspect APIs and Bitdefender HVI	2016	CROGA-PA-00001034

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
Browsing System		Bitdefender Enterprise "Secure Browsing – powered by Citrix XenApp, Citrix XenServer Direct Inspect APIs and Bitdefender HVI	Mar 8, 2017	CROGA-PA-00001542
		XenApp Secure Browser Deployment Guide	2016	CROGA-PA-00001543
		Citrix Secure Browser – Publish Web Apps Securely in Minutes	March 24, 2016	CROGA-PA-00001568
		Martin Zugec, "Secure Browsing with Citrix & Bitdefender"	Jan. 11, 2017	CROGA-PA-00001033
		Bitdefender Enterprise, "Demo of Secure Browsing with Bitdefender HVI & XenApp"	Jan. 18, 2017	CROGA-PA-00001548
		Bitdefender Enterprise, "GravityZone Administrator Guide"	Jul. 29, 2016	CROGA-PA-00001545
		George Spiers, "Citrix Secure Browser"	Jan. 10, 2017	CROGA-PA-00001549
		Citrix, *"Security"*	May 28, 2016	CROGA-PA-00001547
Menlo MSIP	C-9	Menlo Security Isolation Platform Technology Overview	Jun. 16, 2015	CROGA-PA-00000992
		Menlo Security Isolation Platform Adaptive Clientless Rendering"	2016	CROGA-PA-00000977
		U.S. Patent No. 9,391,832	Jul, 12, 2016	CROGA-PA-00002273
		U.S. Provisional Patent Application No. 61/567,039	Dec. 5, 2011	CROGA-PA-00002271
		Menlo Security – How it Works	Jan. 28, 2017	CROGA-PA-00001550
		Menlo Security – Web Isolation Service	Jan. 28, 2017	CROGA-PA-00001551

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
		Menlo Security – Isolation Platform Data Sheet	2016	CROGA-PA-00000980
		Menlo Security Isolation Platform	July 1, 2015	CROGA-PA-00001552
		Vineet Badola, Linux Containers with LXC: some best practices	Feb. 11, 2016	CROGA-PA-00000990
		What's LXC?	Available by March 17, 2016	CROGA-PA-00000989
		Docker Inc., Docker Engine user guide, https://web.archive.org/web/20170812111417/https://docs.docker.com/engine/userguide/	Available by Aug. 12, 2017	CROGA-PA-00001555
		Docker Inc., Docker and iptables, https://web.archive.org/web/20170925102220/https://docs.docker.com/engine/userguide/networking/#docker-and-iptables	Available by Sept. 25, 2017	CROGA-PA-00001556
		Docker Inc., Docker container networking, https://web.archive.org/web/20170925102220/https://docs.docker.com/engine/userguide/networking/#the-docker_gwbridge-network	Available by Sept. 25, 2017	CROGA-PA-00001556
		Menlo Security Recognized by CRN as Emerging Vendor and a Top 10 Coolest Security Startup of 2015	Jul. 22, 2015	CROGA-PA-00001557
		Simson Garfinkel and Gene Spafford, Practical UNIX & Internet Security	1996	CROGA-PA-00001558
		OpenVZ "Setting up an iptables firewall	Feb. 2009	CROGA-PA-00001559
Sun Microsystems xVM	B-12 and C-11	Press Release – Oracle Buys Sun, Oracle Corporation	April 20, 2009	CROGA-PA-00002261
		System Administration Guide: Virtualization Using the Solaris Operating System, Sun Microsystems, Inc.	Oct. 2009	CROGA-PA-00002226
		System Administration Guide: Virtualization Using the Solaris Operating	2009	CROGA-PA-00002236

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
		System, Book Information, Sun Microsystems, Inc.		
		System Administration Guide: Virtualization Using the Solaris Operating System, Preface, Sun Microsystems, Inc.	2009	CROGA-PA-00002267
		System Administration Guide: Virtualization Using the Solaris Operating System, Solaris Virtualization Product Overview, Sun Microsystems, Inc.	2009	CROGA-PA-00002268
		System Administration Guide: Virtualization Using the Solaris Operating System, Part I Resource Management, Sun Microsystems, Inc.	2009	CROGA-PA-00002263
		System Administration Guide: Virtualization Using the Solaris Operating System, Part II Zones, Sun Microsystems, Inc.	2009	CROGA-PA-00002264
		System Administration Guide: Virtualization Using the Solaris Operating System, Part III Linux Branded Zones, Sun Microsystems, Inc.	2009	CROGA-PA-00002265
		System Administration Guide: Virtualization Using the Solaris Operating System, Part IV Sun xVM Hypervisor, Sun Microsystems, Inc.	2009	CROGA-PA-00002266
		System Administration Guide: Virtualization Using the Solaris Operating System, Glossary, Sun Microsystems, Inc.	2009	CROGA-PA-00002255
		System Administration Guide: IP Services, Oracle Corporation	Sept. 2010	CROGA-PA-00002233
		System Administration Guide: IP Services, Part IV IP Security, Oracle Corporation	2010	CROGA-PA-00002252
		System Administration Guide: IP Services, Glossary, Oracle Corporation	2010	CROGA-PA-00002253
		System Administration Guide: Oracle Solaris Zones, Oracle Solaris 10 Containers, and Resource Management, Oracle Corporation	Nov. 2010	CROGA-PA-00002227

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
		System Administration Guide: Oracle Solaris Containers-Resource Management and Oracle Solaris Zones, Oracle Corporation	Sept. 2010	CROGA-PA-00002232
		System Administration Guide: Security Services, Oracle Corporation	Sept. 2010	CROGA-PA-00002229
		System Administration Guide: Network Services, Oracle Corporation	Sept. 2010	CROGA-PA-00002228
		Sun Unveils xVM Platform, Network Computing	Nov. 14, 2007	CROGA-PA-00002270
		An Oracle White Paper – Consolidating Applications with Oracle Solaris Containers, Oracle Corporation	July 2011	CROGA-PA-00002246

Defendants further reserve the right to rely on any prior art system referenced, embodied, or described in any of the prior art identified herein, or which embodies any of the prior art identified herein. For example, any physical embodiments of the prior art and documents identified above, which physical embodiments were publicly available (e.g., made, used, offered for sale, or sold) before the claimed or actual priority dates of the Asserted Patents, constitute prior art. Defendants are not limited to the identified references, but also may rely on material that expressly identifies any physical embodiment of such references as prior art.

Any citation to one or more of these prior art references and/or documents should be construed to constitute not only a citation to the prior art reference and/or document itself (as a printed publication), but also a reference to the product or system itself. When a reference is a prior public use, offer for sale, or sale, the identified document(s) is(are) being relied upon as exemplary evidence of the prior public use, sale, and/or offer for sale. For the prior art products or systems,

Defendants may rely on additional documents to demonstrate the products or systems, testimony relating to the products or systems, and other information.

Further, Defendants contend that the identified prior art provides evidence of prior invention and making of the invention in the United States by another under pre-AIA 35 U.S.C. § 102(f) and/or 102(g), as evidenced by the named inventor(s), author(s), organization(s), and publisher(s) involved with each such reference, with the circumstances described and reflected in each reference including publications and system implementation references. Defendants therefore reserve the right to contend that one or more of the Asserted Claims is invalid under pre-AIA 35 U.S.C. § 102(f) and/or (g) to the extent that the named inventor did not invent the subject matter in the Asserted Claim(s), and/or the alleged invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it.

Also, to the extent not expressly stated herein, these Preliminary Invalidity Contentions incorporate by reference (1) any and all prior art identified in documents produced by Defendants in this case; (2) any prior art of which a named inventor of the Asserted Claims is aware and/or on which they, and/or Croga contends the alleged invention(s) of the Asserted Claims builds upon or improves; (3) any and all admissions by Croga and/or a named inventor regarding the Asserted Patents including, but not limited to, admissions in the specification of the Asserted Patents the prosecution of the Asserted Patents and related patents and/or patent applications; (4) any prior art cited in the prosecution histories of the ’368 Patent, the ’780 Patent, the ’601 Patent, related patents and applications, and/or any foreign counterparts; and (5) all prior art and/or invalidity contentions that Croga discloses, produces or is aware of in connection with any assertion, transfer of rights or contested proceeding concerning the Asserted Patents and related patents and/or patent applications. Furthermore, Defendants reserve the right to contend that publications and patents

related to the ’601 Patent are invaliding prior art if Defendants discover that the related publications and patents fail to meet the requirements of AIA 35 U.S.C. § 102(b)(2)(C) and therefore invalidate the Asserted.

In addition, the prior art identified in Defendants’ Preliminary Invalidity Contentions reflects common knowledge and the state of the art at the time of the earliest filing date of the Asserted Patents. Defendants will rely on the references cited in A-1 through D-3 and additional citations, references, expert testimony, fact testimony and other corroborating evidence, and other material to provide context and background illustrating the state of the prior art, knowledge of a person of ordinary skill in the art at the time of the claimed inventions, and/or to aid in understanding the cited portions of the references and/or cited features of the systems. Defendants may also rely on fact or expert testimony explaining relevant portions of references, as well as additional documents, hardware or software products or systems, and other discovery regarding these subject matters, to provide context or to aid in understanding the cited portions of the prior art references and interpreting the teachings of the prior art and to establish bases for combinations of certain cited references that render the Asserted Claims obvious.

b) Obviousness Combinations

The Asserted Claims would have been obvious under 35 U.S.C. § 103 in light of one or more of the references and systems disclosed in Sections II.a), alone or in combination with what was known to a skilled artisan at the time, with one or more of the references cited in the file history of the Asserted Patents, and/or one or more of the references identified below. For example, each claim chart for each of the references and systems identified in Section II.a) explains that each such reference or system alone or in combination with one or more other reference or system renders every Asserted Claim obvious. The references and systems disclosed below all relate to VoIP telephone systems (with respect to the ’368 Patent) and virtualization and/or computer and

network security (with respect to the ’780 and ’601 Patents). The benefits conferred by the references and systems listed below are explained in detail within each reference. A person having ordinary skill in the art of the Asserted Patents would have been motivated to look to the references and systems listed below in order to incorporate the benefits disclosed in those references and systems into the VoIP systems and computer and network systems, including virtualization systems, described in the prior art. Some examples of these conferred benefits would include making feedback-based adjustment of network resources for VoIP telephone calls (with respect to the ’368 Patent) and improved separation and isolation of computer systems utilizing virtual computing environments and improved overall network and computer security (with respect to the ’780 and ’601 Patents). Additionally, a person having ordinary skill in the art of the Asserted Patents would have had a reasonable expectation of successfully implementing the solutions described in the asserted combinations. Each claim chart provides additional detail from the references and systems themselves regarding the motivation and ability of skilled artisans to combine the prior art.

Exhibits D-1 through D-3 compile exemplary disclosures from the references and systems identified below for purposes of demonstrating the combinations that would have rendered each Asserted Claim obvious.[1] When used in such combinations, Exhibits D-1 through D-3 demonstrate how the references and systems listed below render obvious each Asserted Claim. The references and systems cited and relied upon in Exhibits D-1 through D-3 are listed in the tables below. In addition to the prior art listed in these contentions and in charts A-1 through D-3, Defendants expressly reserve the right to rely upon all prior art cited in the prosecution of the Asserted Patents,

[1] Each reference and system identified in Exhibits D-1 through D-3 qualifies as prior art under at least one of pre-AIA 35 U.S.C.§§ 102(a), (b), (e), (g) or AIA 35 U.S.C. §102(a).

and Defendants further expressly reserve the right to rely upon additional references to demonstrate the state of the relevant art. For example, Defendants may rely upon additional references in its forthcoming technical expert reports that demonstrate what was well known in the art and to provide a background to the jury on the relevant art and/or purported inventions of the Asserted Patents. The alleged invention of the Asserted Patents implements well-known prior art systems and devices for using VoIP telephones (with respect to the ’368 Patent) and improving overall network and computer security, including through the use of virtualization, firewalls, web proxies, and/or authentication (with respect to the ’780 and ’601 Patents).

Defendants for which the ’780 Patent is asserted also incorporate by reference in their entirety each and every ground for invalidity (and all arguments and documents cited in support of those grounds of invalidity) set forth in Inter Partes Review No. IPR2024-01196 (field July 25, 2024). In addition, Defendants incorporate by reference any expert reports, invalidity contentions, identified prior art, invalidity claim charts or defenses disclosed at any date by any party to any other litigation or U.S. Patent & Trademark Office proceeding involving the Asserted Patents or any related patents.

Croga has not identified any secondary considerations or other objective evidence of non-obviousness. Defendants reserve the right to submit evidence to rebut any secondary considerations or other objective evidence that Croga may later identify.

1. Patents and Patent Publications

Abbreviated Name	Patent No. or Publication No.	Country of Origin	Filing Date	Issuance or Publication Date	Claim Chart No.	Production No.
“Nishimura ’957”	2005/072957	Japan	Aug. 25, 2003	Mar. 17, 2005	D-1	CROGA-PA-00000909; CROGA-PA-00001509;

Abbreviated Name	Patent No. or Publication No.	Country of Origin	Filing Date	Issuance or Publication Date	Claim Chart No.	Production No.
						CROGA-PA-00001510
“Minhazuddin ’414”	7,643,414	U.S.A.	Feb. 10, 2004	Jan. 5, 2010	D-1	CROGA-PA-00001524
“Hepworth ’690”	2004/0073690	U.S.A.	Sept. 30, 2002	Apr. 15, 2004	D-1	CROGA-PA-00001525
“Sundaresan ’881”	2002/0101881	U.S.A.	Jul. 2, 1999	Aug. 1, 2002	D-1	CROGA-PA-00001530
“Cloonan ’493”	2004/0001493	U.S.A.	Jun. 26, 2002	Jan. 1, 2004	D-1	CROGA-PA-00001531
“Bell ’924”	7,701,924	U.S.A.	Feb. 27, 1998	Apr. 20, 2010	D-1	CROGA-PA-00001532
“Surazski ’604”	6,873,604	U.S.A.	Jul. 31, 2000	Mar. 29, 2005	D-1	CROGA-PA-00001533
“Platt ’363”	6,757,363	U.S.A.	May 31, 2000	Jun. 29, 2004	D-1	CROGA-PA-00001534
“Biage ’360”	2006/0198360	U.S.A.	Mar. 7, 2005	Sept. 7, 2006	D-1	CROGA-PA-00001535
“Bearden ’425”	2003/0086425	U.S.A.	Oct. 15, 2002	May 8, 2003	D-1	CROGA-PA-00001536
“Hicks ’513”	2003/0093513	U.S.A.	Sept. 11, 2001	May 15, 2003	D-1	CROGA-PA-00001537
“Kumar ’515”	2007/0133515	U.S.A.	Dec. 13, 2005	Jun. 14, 2007	D-1	CROGA-PA-00001538
“Medvinsky ’081”	2002/0094081	U.S.A.	Jan. 16, 2001	Jul. 18, 2002	D-1	CROGA-PA-00001539
“Baumann ’846”	7,746,846	U.S.A.	Jun. 13, 2005	Jan. 19, 2006	D-1	CROGA-PA-00001540
“Bogner ’794”	2008/0235794	U.S.A.	Mar. 20, 2008	Sep. 25, 2008	D-2 & D-3	CROGA-PA-00000973
“Crowell ’385”	2008/0022385	U.S.A.	Jun. 30, 2006	Jan. 24, 2008	D-2 & D-3	CROGA-PA-00000975
“Jackson ’738”	7,127,738	U.S.A.	Oct. 18, 2000	Oct. 24, 2006	D-2 & D-3	CROGA-PA-00000927
“Abzarian ’251”	2009/0007251	U.S.A.	Jun. 26, 2007	Jan. 1, 2009	D-2 & D-3	CROGA-PA-00000926
“Weseinger ’321”	2004/0103321	U.S.A.	Nov. 6, 2003	May 27, 2004	D-2 & D-3	CROGA-PA-00000930
“Gleichaut ’747”	2008/0244747	U.S.A.	Mar. 30, 2007	Oct. 2, 2008	D-2 & D-3	CROGA-PA-00000924
“Garg ’300”	2006/0206300	U.S.A.	Mar. 11, 2005	Sep. 14, 2006	D-2 & D-3	CROGA-PA-00000923

Abbreviated Name	Patent No. or Publication No.	Country of Origin	Filing Date	Issuance or Publication Date	Claim Chart No.	Production No.
"Prahlad '725"	2010/0070725	U.S.A	Sep. 3, 2009	Mar. 18, 2010	D-2 & D-3	CROGA-PA-00000925
"Montague '046"	8,387,046	U.S.A	Mar. 26, 2009	Feb. 26, 2013	D-2	CROGA-PA-00000922
"Yang '873"	101645873	China	Aug. 7, 2008	Feb. 10, 2010	D-2 & D-3	CROGA-PA-00000920; CROGA-PA-00000934 (Translation)
"Dash '856"	2010/0125856	U.S.A	Nov. 14, 2008	May 20, 2010	D-2 & D-3	CROGA-PA-00000921
"Reumann '207"	2008/0163207	U.S.A	Jan. 3, 2007	Jul. 3, 2008	D-2 & D-3	CROGA-PA-00000919
"Basak '165"	2010/0333165	U.S.A	Jun. 24, 2009	Dec. 30, 2010	D-2 & D-3	CROGA-PA-00000918
"Rich '898"	2004/0162898	U.S.A	Feb. 10, 2004	Aug. 19, 2004	D-2 & D-3	CROGA-PA-00000917
"Fulp '580"	2006/0248580	U.S.A	Mar. 28, 2006	Nov. 2, 2006	D-2 & D-3	CROGA-PA-00000916
"Mortman '030"	10,127,030	U.S.A.	Mar. 4, 2016	Nov. 13, 2018	D-3	CROGA-PA-00000960
"LaBine '999"	2009/0292999	U.S.A.	May 21, 2008	Nov. 26, 2009	D-3	CROGA-PA-00000938
"Foxhoven '024"	10,375,024	U.S.A.	May 18, 2016	Aug. 6, 2019	D-3	CROGA-PA-00000962
"Ishaya '889"	2014/0282889	U.S.A.	Mar. 14, 2013	Sep. 18, 2014	D-3	CROGA-PA-00001573
"Malhotra '517	9,003,517	U.S.A.	Oct. 28, 2009	Apr. 7, 2015	D-2 & D-3	CROGA-PA-00000935
"Pai '725"	10,855,725	U.S.A.	Jun. 2, 2016	Dec. 1, 2020	D-3	CROGA-PA-00000966
"Broumas '284"	10,733,284	U.S.A.	Oct. 6, 2016	Aug. 4, 2020	D-3	CROGA-PA-00001575
"Steinberg '117"	10,846,117	U.S.A.	Aug. 15, 2016	Nov. 24, 2020	D-3	CROGA-PA-00001576
"Benoit '031"	2015/0096031	U.S.A.	Sep.12, 2014	Apr. 2, 2015	D-3	CROGA-PA-00001577
"Bloch '502"	7,849,502	U.S.A.	Apr. 30, 2007	Dec. 7, 2010	D-3	CROGA-PA-00000937
"Hoy '780"	10,601,780	U.S.A.	Mar. 2 , 2018	Mar. 24 , 2020	D-3	CROGA-PA-00000971
"Neumann '761"	2006/0041761	U.S.A.	Aug. 17, 2004	Feb. 23, 2006	D-2 & D-3	CROGA-PA-00000976

Abbreviated Name	Patent No. or Publication No.	Country of Origin	Filing Date	Issuance or Publication Date	Claim Chart No.	Production No.
"Harrison '247"	2014/0002247	U.S.A.	Sep. 4, 2013	Jan. 2, 2014	D-2 & D-3	CROGA-PA-00001578
"Zwilling '872"	8,326,872	U.S.A.	Feb. 22, 2008	Dec. 4, 2012	D-3	CROGA-PA-00000967
"Heins '720"	2009/0259720	U.S.A.	Jul. 2, 2009	Oct. 15, 2009	D-3	CROGA-PA-00000968
"Frank '384"	2006/0112384	U.S.A.	Apr. 19, 2005	May 25, 2006	D-3	CROGA-PA-00000986
"Amiga '972"	9,306,972	U.S.A.	Sep. 17, 2014	Apr. 5, 2016	D-3	CROGA-PA-00000974
"Walker '863"	2016/0149863	U.S.A.	Jun. 25, 2014	May 26, 2016	D-3	CROGA-PA-00000982
"Innes '488"	9,154,488	U.S.A.	May 3, 2013	Oct. 6, 2015	D-3	CROGA-PA-00001515
"Miller '136"	2006/0090136	U.S.A.	Oct. 1, 2004	Apr. 27, 2006	D-3	CROGA-PA-00001516
"Cucinotta '406"	2016/0048406	U.S.A.	Sep. 24, 2015	Feb. 18, 2016	D-3	CROGA-PA-00002204
"Tremain '079"	7,448,079	U.S.A.	Jul. 3, 2001	Nov. 4, 2008	D-3	CROGA-PA-00000932
"Todorovic '363"	2010/0251363	U.S.A.	Mar. 24, 2009	Sep. 30, 2010	D-3	CROGA-PA-00001518
"Thomas '194"	2009/0241194	U.S.A.	Mar. 21, 2008	Sep. 24, 2009	D-3	CROGA-PA-00001519

2. Non-Patent Literature

Abbreviated Name	Title	Author(s)	Publication Date	Claim Chart No.	Production No.
"SIP Standard"	SIP: Session Initiation Protocol	J. Rosenberg et al.	Jun. 2002	D-1	CROGA-PA-00001526
"H.323 v5"	Packet-based multimedia communications systems	International Telecommunication Union	Jul. 14, 2003	D-1	CROGA-PA-00001527
"RFC 3435"	Media Gateway Control Protocol (MGCP) Version 1.0	F. Andreasen & B. Foster	Jan. 2003	D-1	CROGA-PA-00001528
"RFC 3660"	Basic Media Gateway Control	B. Foster & F. Andreasen	Dec. 2003	D-1	CROGA-PA-00001529

Abbreviated Name	Title	Author(s)	Publication Date	Claim Chart No.	Production No.
	Protocol (MGCP) Packages				
"Seccomp and Sandboxing"	Seccomp and sandboxing	Jonathan Corbet	May 13, 2009	D-2 & D-3	CROGA-PA-00001523
"Notes from a Container"	Notes from a container	Jonathan Corbet	Oct. 29, 2007	D-2 & D-3	CROGA-PA-00002189
"Shared Subtrees"	Shared subtrees	Jonathan Corbet	Nov. 8, 2009	D-2 & D-3	CROGA-PA-00002190
"iptables: The Linux Firewall Administration Program"	iptables: The Linux Firewall Administration Program	Steve Suehring & Robert Ziegler	Nov. 23, 2005	D-2 & D-3	CROGA-PA-00002205
"cgroups"	cgroups	Paul Menage	2004-2006	D-2 & D-3	CROGA-PA-00002194
"LXC GitHub"	LXC		Aug. 1, 2008	D-2 & D-3	CROGA-PA-00002209
"[PATCH] namespaces: utsname: implement CLONE_NEWUTS flag"	index : kernel/git/torvalds/linux.git	Serge E. Hallyn	Oct. 2, 2006	D-2 & D-3	CROGA-PA-00002207
"[PATCH] seccomp: secure computing support"	index : kernel/git/history/history.git	Andrea Arcangeli	Mar. 7, 2005	D-2 & D-3	CROGA-PA-00002210
"Virtual Machines Textbook"	Virtual Machines: Versatile Platforms for Systems and Processes	James E. Smith & Ravi Nair	2005	D-2 & D-3	CROGA-PA-00000958
"Trustworthy Computing"	Trustworthy Computing for the Cloud-Mobile Era	Gaurav Banga et al.	Oct. 2, 2014	D-3	CROGA-PA-00000972
"Linux Textbook"	The Linux Programming Interface	Michael Kerrisk	2010	D-2 & D-3	CROGA-PA-00001569
"Docker Textbook"	Using Docker: Developing And	Adrian Mouat	2016	D-3	CROGA-PA-00001570

Abbreviated Name	Title	Author(s)	Publication Date	Claim Chart No.	Production No.
	Deploying Software With Containers				

3. Prior Art Systems

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
Linux Operating System	D-2 & D-3	MICHAEL KERRISK, THE LINUX PROGRAMMING INTERFACE ("Linux Textbook")	2010	CROGA-PA-00001569
		Steve Suehring & Robert Ziegler, *iptables: The Linux Firewall Administration Program*, INFORMIT, https://www.informit.com/articles/article.aspx?p=421057&seqNum=4 ("iptables: The Linux Firewall Administration Program")	Nov. 23, 2005	CROGA-PA-00002205
		Jonathan Corbet, Shared subtrees, LWN.NET, https://lwn.net/Articles/159077/#:~:text=In%20Linux%20a%20namespace%20is,subtrees%20within%20a%20given%20namespace ("Shared Subtrees")	Nov. 8, 2009	CROGA-PA-00002190
		Jonathan Corbet, Seccomp and sandboxing, LWN.NET, https://lwn.net/Articles/332974/ ("Seccomp and Sandboxing")	May 13, 2009	CROGA-PA-00001523
		Paul Menage, Cgroups, KERNEL.ORG, https://www.kernel.org/doc/Documentation/cgroup-v1/cgroups.txt ("cgroups")	2004-2006	CROGA-PA-00002194
LXC	D-2 & D-3	lxc, GITHUB, https://github.com/lxc/lxc/tree/5e97c3fcce787a5bc0f8ceef43aa3e05195b480a	Aug. 1, 2008	CROGA-PA-00002209; CROGA-PA-00002284 through CROGA-PA-00002377
		Serge E. Hallyn, index : kernel/git/torvalds/linux.git, KERNEL.ORG GIT REPOSITORIES, https://git.kernel.org/pub/scm/linux/kernel/	Oct. 2, 2006	CROGA-PA-00002207

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
		git/torvalds/linux.git/commit/?id=071df104f808b8195c40643dcb4d060681742e29 ("[PATCH] namespaces: utsname: implement CLONE_NEWUTS flag")		
		Andrea Arcangeli, index : kernel/git/history/history.git, KERNEL.ORG GIT REPOSITORIES, https://git.kernel.org/pub/scm/linux/kernel/git/history/history.git/commit/?id=d949d0ec9c601f2b148bed3cdb5f87c052968554 ("[PATCH] seccomp: secure computing support")	Mar. 7, 2005	CROGA-PA-00002210
		Jonathan Corbet, Notes from a container, LWN.NET, https://lwn.net/Articles/256389/ ("Notes from a Container")	Oct. 29, 2007	CROGA-PA-00002189
		Jonathan Corbet, Seccomp and sandboxing, LWN.NET, https://lwn.net/Articles/332974/ ("Seccomp and Sandboxing")	May 13, 2009	CROGA-PA-00001523
		Jonathan Corbet, Shared subtrees, LWN.NET, https://lwn.net/Articles/159077/#:~:text=In%20Linux%20a%20namespace%20is,subtrees%20within%20a%20given%20namespace ("Shared Subtrees")	Nov. 8, 2009	CROGA-PA-00002190
		Paul Menage, Cgroups, KERNEL.ORG, https://www.kernel.org/doc/Documentation/cgroup-v1/cgroups.txt ("cgroups")	2004-2006	CROGA-PA-00002194
Docker	D-3	ADRIAN MOUAT, USING DOCKER: DEVELOPING AND DEPLOYING SOFTWARE WITH CONTAINERS ("Docker Textbook")	2016	CROGA-PA-00001570
		U.S. Patent No. 10,127,030 ("Mortman '030")	Nov. 13, 2018	CROGA-PA-00000960
		Cian Allner, *The history of Windows Server Containers and Docker*, https://techcommunity.microsoft.com/t5/windows-server-for-it-pro/the-history-of-windows-server-containers-and-docker/m-p/63211	Apr. 19, 2017	CROGA-PA-00002192

Abbreviated System Name	Claim Chart No.	Exemplary Publications Describing the System	Publication Date	Production No.
		Docker Inc., *Docker Engine user guide*, https://web.archive.org/web/20170812111417/https://docs.docker.com/engine/userguide/	Available by Aug. 12, 2017	CROGA-PA-00001555
		Docker Inc., *Docker and iptables*, https://web.archive.org/web/20170925102220/https://docs.docker.com/engine/userguide/networking/#docker-and-iptables	Available by Sept. 25, 2017	CROGA-PA-00001556
		Docker Inc., *Docker container networking*, https://web.archive.org/web/20170925102220/https://docs.docker.com/engine/userguide/networking/#the-docker_gwbridge-network	Available by Sept. 25, 2017	CROGA-PA-00001556

Defendants hereby incorporate by reference each reference and system identified in Section II.a) as if fully set forth herein.

4. Exemplary ’368 Patent Obviousness Combinations

Prior art rendering the Asserted Claims of the ’368 Patent obvious, alone or in combination with other references, are identified and discussed throughout these Invalidity Contentions and in the claim charts Exhibits A-1 through A-7 and D-1. Exhibits A-1 through A-7 and D-1 include exemplary claim charts for the ’368 Patent, including citations to where in the references the teachings, suggestions, and motivations to combine the references are disclosed. Further reasons to combine the references identified in Exhibits A-1 through A-7 and D-1 include the nature of the problem being solved, the express, implied and inherent teachings of the prior art, the knowledge of POSITAs, that such combinations would have yielded predictable results, and that such combinations would have represented known alternatives to a POSITA.

Below is a list of examples of certain combinations of prior art that a person of ordinary skill in the art would have been motivated to combine around the time of the alleged invention of the ’368 Patent. The combinations listed below are meant to provide additional clarity on

motivations to combine some of the references, but is not meant to list every possible combination and is not an admission that unlisted combinations would not have been obvious to a person of ordinary skill in the art. Cisco reserves the right to amend or add exemplary obviousness combinations as discovery continues, pursuant to any orders from the Court, and after any change in Croga's positions.

For example, the alleged invention of the '368 Patent implements well-known prior art systems for making feedback-based adjustments of network resources for VoIP telephone systems. By way of example only, and not exhaustive of all references, citations, and combinations thereof, a POSITA at the time of the alleged inventions would have been aware of the concepts described in each of the prior art described in A-1 through A-7 and D-1. Indeed, such a POSITA would have possessed knowledge of adjusting codecs used in VoIP telephone systems, they would have been well-equipped to design the claimed systems, such as those described in detail by the references explained below and in A-1 through A-7 and D-1.

For example, skilled artisans would have been motivated to combine Everson '998 (or Mundra '860 or Bauer '556 or Shaffer '734 or Shaffer '839 or Kakimoto '749) with H.323 v5 (or OpenH323 or Nishimura '957 or Minhazuddin '414) because H.323 v5 (or OpenH323 or Nishimura '957 or Minhazuddin '414) discloses utilizing a gatekeeper for mid-call codec adjustment. Skilled artisans would have understood that Everson '998 (or Mundra '860 or Bauer '556 or Shaffer '734 or Shaffer '839 or Kakimoto '749) and H.323 v5 (or OpenH323 or Nishimura '957 or Minhazuddin '414) could be readily combined because both relate to VoIP codec adjustment. H.323 v5 (or OpenH323 or Nishimura '957 or Minhazuddin '414) discloses the benefits of utilizing a gatekeeper in the codec adjustment process to most efficiently utilize bandwidth allocation in response to changing network and call conditions. Thus, a skilled artisan

would have been motivated to use the gatekeeper for mid-call codec adjustment disclosed in H.323 v5 (or OpenH323 or Nishimura ’957 or Minhazuddin ’414) to the VoIP systems disclosed in Everson ’998 (or Mundra ’860 or Bauer ’556 or Shaffer ’734 or Shaffer ’839 or Kakimoto ’749) and would have recognized that the results of this combination were predictable.

For example, skilled artisans would have been motivated to combine Everson ’998 (or Shaffer ’734 or Shaffer ’839) with SIP Standard (or Baumann ’846 or Kakimoto ’749) because SIP Standard (or Baumann ’846 or Kakimoto ’749) discloses SIP mid-call signals to change a media session. Skilled artisans would have understood that Everson ’998 (or Shaffer ’734 or Shaffer ’839) and SIP Standard (or Baumann ’846 or Kakimoto ’749) could be readily combined because both relate to VoIP mid-call signaling. SIP Standard (or Baumann ’846 or Kakimoto ’749) discloses the benefits of utilizing mid-call signaling to change the media session. Thus, a skilled artisan would have been motivated to use SIP mid-call signaling disclosed in SIP Standard (or Baumann ’846 or Kakimoto ’749) to the VoIP systems disclosed in Everson ’998 (or Shaffer ’734 or Shaffer ’839) and would have recognized that the results of this combination were predictable.

For example, skilled artisans would have been motivated to combine Bauer ’556 (or Shaffer ’734 or Shaffer ’839) with Everson ’998 (or Hepworth ’690 or Kumar ’515) because Everson ’998 (or Hepworth ’690 or Kumar ’515) discloses a VoIP system where the VoIP telephone sends a call quality signal. Skilled artisans would have understood that Bauer ’556 (or Shaffer ’734 or Shaffer ’839) and Everson ’998 (or Hepworth ’690 or Kumar ’515) could be readily combined because both relate to VoIP mid-call signaling. Everson ’998 (or Hepworth ’690 or Kumar ’515) discloses the benefits of a VoIP telephone sending the signal, to indicate potential call quality issues. Thus, a skilled artisan would have been motivated to use VoIP telephone signaling disclosed in Everson ’998 (or Hepworth ’690 or Kumar ’515) to the VoIP systems

disclosed in Bauer ’556 (or Shaffer ’734 or Shaffer ’839) and would have recognized that the results of this combination were predictable.

For example, skilled artisans would have been motivated to combine Mundra ’860 (or OpenH323 or Shaffer ’734 or Shaffer ’839) with Everson ’998 (or Nishimura ’957 or SIP Standard or Minhazuddin ’414 or Baumann ’846) because Everson ’998 (or Nishimura ’957 or SIP Standard or Minhazuddin ’414 or Baumann ’846) discloses both VoIP telephones on a call receiving a codec adjustment signal. Skilled artisans would have understood that Mundra ’860 (or OpenH323 or Shaffer ’734 or Shaffer ’839) and Everson ’998 (or Nishimura ’957 or SIP Standard or Minhazuddin ’414 or Baumann ’846) could be readily combined because both relate to VoIP mid-call signaling. Everson ’998 (or Nishimura ’957 or SIP Standard or Minhazuddin ’414 or Baumann ’846) discloses the benefits of both VoIP telephones on a call receiving a codec adjustment signal, so that both VoIP telephones can adjust their codec accordingly. Thus, a skilled artisan would have been motivated to use VoIP telephone signaling disclosed in Everson ’998 (or Nishimura ’957 or SIP Standard or Minhazuddin ’414 or Baumann ’846) to the VoIP systems disclosed in Mundra ’860 (or OpenH323 or Shaffer ’734 or Shaffer ’839) and would have recognized that the results of this combination were predictable.

For example, skilled artisans would have been motivated to combine Mundra ’860 (or Bauer ’556 or Shaffer ’734 or Shaffer ’839 or Kakimoto ’749) with Minhazuddin ’414 (or OpenH323 or H.323 v5 or Surazski ’604) because Minhazuddin ’414 (or OpenH323 or H.323 v5 or Surazski ’604) discloses network topologies which could be utilized in a VoIP system. Skilled artisans would have understood that Mundra ’860 (or Bauer ’556 or Shaffer ’734 or Shaffer ’839 or Kakimoto ’749) and Minhazuddin ’414 (or OpenH323 or H.323 v5 or Surazski ’604) could be readily combined because both relate to VoIP systems with connections between various

networking components. Minhazuddin ’414 (or OpenH323 or H.323 v5 or Surazski ’604) discloses the benefits of utilizing its network topology to provide connections between the various networking components. Thus, a skilled artisan would have been motivated to use network topologies disclosed in Minhazuddin ’414 (or OpenH323 or H.323 v5 or Surazski ’604) to the VoIP systems disclosed in Mundra ’860 (or Bauer ’556 or Shaffer ’734 or Shaffer ’839 or Kakimoto ’749) and would have recognized that the results of this combination were predictable.

For example, to the extent a claim limitation is not met by a reference, at least under Plaintiff’s apparent interpretation of the Asserted Claims, those limitations were already well known in the art and would have been obvious to a POSITA. For example, before the earliest priority date of the ’368 Patent, at least the H.323 and SIP Standards disclosed using gatekeepers for VoIP mid-call signaling and/or codec adjustment in the same way as Plaintiff’s apparent interpretation of the Asserted Claims in its Infringement Contentions. *See* Exhibit A-7; *see also* Exhibit D-1. A skilled artisan would appreciate that before the earliest priority date of the ’368 Patent, it would have been obvious to combine these Standards within a VoIP system to yield predictable results.

The references identified in Exhibits A-1 through A-7 and D-1 are analogous prior art to the subject matter of the Asserted Claims and are properly combinable. Indeed, the known work in this field of endeavor would prompt variations of it for users within the same field, as the variations were predictable to one of ordinary skill in the art. Therefore, these references provide interrelated teachings and one of ordinary skill would look to the concepts in any of these references when seeking to solve the problems purportedly addressed by the ’368 Patent.

5. Exemplary ’780 Patent Obviousness Combinations

Prior art rendering the Asserted Claims of the ’780 Patent obvious, alone or in combination with other references, are identified and discussed throughout these Invalidity Contentions and in

the claim charts Exhibits B-1 through B-12 and D-2. Exhibits B-1 through B-12 and D-2 include exemplary claim charts for the ’780 Patent, including citations to where in the references the teachings, suggestions, and motivations to combine the references are disclosed. Further reasons to combine the references identified in Exhibits B-1 through B-12 and D-2 include the nature of the problem being solved, the express, implied and inherent teachings of the prior art, the knowledge of POSITAs, that such combinations would have yielded predictable results, and that such combinations would have represented known alternatives to a POSITA.

Below is a list of examples of certain combinations of prior art that a person of ordinary skill in the art would have been motivated to combine around the time of the alleged invention of the ’780 Patent. The combinations listed below are meant to provide additional clarity on motivations to combine some of the references, but is not meant to list every possible combination and is not an admission that unlisted combinations would not have been obvious to a person of ordinary skill in the art. Cisco and Fortinet reserve the right to amend or add exemplary obviousness combinations as discovery continues, pursuant to any orders from the Court, and after any change in Croga’s positions.

For example, the alleged invention of the ’780 Patent implements well-known prior art methods and devices for protecting networks and computer systems, including using internal, host, and network firewalls, and virtualization. By way of example only, and not exhaustive of all references, citations, and combinations thereof, a POSITA at the time of the alleged inventions would have been aware of the concepts described in each of the prior art described in B-1 through B-12 and D-2. Indeed, such a POSITA would have possessed knowledge of protecting networks and computer systems through the use of firewalls and virtualization, they would have been well-

equipped to design the claimed systems and methods, such as those described in detail by the references explained below and in B-1 through B-12 and D-2.

For example, skilled artisans would have been motivated to combine the references identified in Exhibits B-1 through B-12 with the references cited in D-2 because the references cited in D-2 disclose virtualization, isolation, and/or security techniques for computer systems and/or networks and the references identified in Exhibits B-1 through B-12 relate to the same area(s) of virtualization and/or computer and network security. Skilled artisans would have understood that the references cited in D-2 could be readily combined with the references identified in Exhibits B-1 through B-12 because they relate to network and computer security, including in virtual environments. Thus, a skilled artisan would have been motivated to use the virtualization, isolation, and/or security techniques for computer systems and/or networks disclosed in the references cited in D-2 with the virtualization and/or computer systems and networks disclosed in the references identified in Exhibits B-1 through B-12 and would have recognized that the results of this combination were predictable.

For example, skilled artisans would have been motivated to combine System z (or Banga ’412 or Miller ’136 or Thomas ’194 or Todorovic ’363 or Tremain ’079 or Windows Virtualization or XenApp) with Wookey ’921 (or vShield or Delco ’474 or Gleichauf) because Wookey ’921 (or vShield or Delco ’474 or Gleichauf ’747) discloses virtualization, isolation, and security techniques for computer systems and networks, including at least the use of internal firewalls separating the host system from the virtual system and System z (or Banga ’412 or Miller ’136 or Thomas ’194 or Todorovic ’363 or Tremain ’079 or Windows Virtualization or XenApp) utilize virtualization, isolation, and security techniques for improved security in computer systems and networks. Skilled artisans would have understood that Wookey ’921 (or vShield or Delco ’474 or

Gleichauf ’747) and System z (or Banga ’412 or Miller ’136 or Thomas ’194 or Todorovic ’363 or Tremain ’079 or Windows Virtualization or XenApp) could be readily combined because both relate to network and computer security, including in virtual environments. Wookey ’921 (or vShield or Delco ’474 or Gleichauf ’747) disclose the benefits of protecting computers and networks by using virtualizations that are separated and isolated from host systems. Thus, a skilled artisan would have been motivated to use the internal firewalls separating the host system from the virtual system disclosed in Wookey ’921 (or vShield or Delco ’474 or Gleichauf ’747) to the virtualization systems disclosed in System z (or Banga ’412 or Miller ’136 or Thomas ’194 or Todorovic ’363 or Tremain ’079 or Windows Virtualization or XenApp) and would have recognized that the results of this combination were predictable.

For example, skilled artisans would have been motivated to combine Wookey ’921 (or Delco ’474 or vShield or System z or Banga ’412 or Miller ’136 or Thomas ’194 or Todorovic ’363 or Windows Virtualization or XenApp or xVM) with Tremain ’079 (or Jackson ’738 or Wesinger ’321) because Wookey ’921 (or Delco ’474 or vShield or System z or Banga ’412 or Miller ’136 or Thomas ’194 or Todorovic ’363 or Windows Virtualization or XenApp or xVM) discloses virtualization, isolation, and security techniques for computer systems and/or networks and Tremain ’079 (or Jackson ’738 or Wesinger ’321) discloses network firewall appliances and/or web proxies that comprise processors and memory. Skilled artisans would have understood that Wookey ’921 (or Delco ’474 or vShield or System z or Banga ’412 or Miller ’136 or Thomas ’194 or Todorovic ’363 or Windows Virtualization or XenApp or xVM) and Tremain ’079 (or Jackson ’738 or Wesinger ’321) could be readily combined because both relate to network and computer security. Tremain ’079 (or Jackson ’738 or Wesinger ’321) discloses the benefits of network web proxies and firewall appliances comprising a processor and memory to implement network

isolation from untrusted network destinations. Thus, a skilled artisan would have been motivated to use the network firewall appliance and web proxies with a processor and memory disclosed in Tremain ’079 (or Jackson ’738 or Wesinger ’321) to perform the network firewall functions and/or further increase network security of Wookey ’921 (or Delco ’474 or vShield or System z or Banga ’412 or Miller ’136 or Thomas ’194 or Todorovic ’363 or Windows Virtualization or XenApp or xVM) and would have recognized that the results of this combination were predictable.

For example, to the extent a claim limitation is not met by a reference or system in B-1 through B-12, at least under Plaintiff’s apparent interpretation of the Asserted Claims, those limitations were already well known in the art and would have been obvious to a POSITA. For example, before the earliest priority date of the ’780 Patent, at least Wookey, Todorovic, and Wesinger disclosed using host-based firewalls to improve computer system and network security by isolating a computer system from the network in the same way as Plaintiff’s apparent interpretation of the Asserted Claims in its infringement contentions. *See* Exhibits B-1, B-8; *see also* Exhibit D-2. A skilled artisan would appreciate that before the earliest priority date of the ’780 Patent, host-based firewalls were a well-known method for improving computer system and network security and it would have been obvious to combine well-known host-based firewalls (*see, e.g.*, Wookey, Todorovic, and Wesinger) with virtualized computer systems to yield predictable results.

For example, to the extent a claim limitation is not met by a reference or system in B-1 through B-12, at least under Plaintiff’s apparent interpretation of the Asserted Claims, those limitations were already well known in the art and would have been obvious to a POSITA. For example, before the earliest priority date of the ’780 Patent, it was well known to use container virtualization technology, including at least xVM Solaris zones/containers and the Linux

Operating System features cgroups, seccomp, kernel namespaces, and iptables in the same way as Plaintiff's apparent interpretation of the Asserted Claims in its infringement contentions. *See, e.g.*, iptables: The Linux Firewall Administration Program (CROGA-PA-00002205), Seccomp and sandboxing (CROGA-PA-00001523), Notes from a container (CROGA-PA-00002189), and Shared subtrees (CROGA-PA-00002190); *see also* Exhibits B-12 and D-2. A skilled artisan would appreciate that before the earliest priority date of the '601 Patent, it would have been obvious to combine the well-known container technology, including xVM and Linux Operating System features cgroups, seccomp, kernel namespaces, and iptables (s*ee, e.g.*, iptables: The Linux Firewall Administration Program (CROGA-PA-00002205), Seccomp and sandboxing (CROGA-PA-00001523), Notes from a container (CROGA-PA-00002189), and Shared subtrees (CROGA-PA-00002190); *see also* Exhibit B-12 and D-2) with computing systems utilizing virtual environments to yield predictable results.

The references identified in Exhibits B-1 through B-12 and D-2 are analogous prior art to the subject matter of the Asserted Claims and are properly combinable. Indeed, the known work in this field of endeavor would prompt variations of it for users within the same field, as the variations were predictable to one of ordinary skill in the art. Therefore, these references provide interrelated teachings and one of ordinary skill would look to the concepts in any of these references when seeking to solve the problems purportedly addressed by the '780 Patent.

6. Exemplary '601 Patent Obviousness Combinations

Prior art rendering the Asserted Claims of the '601 Patent obvious, alone or in combination with other references, are identified and discussed throughout these Invalidity Contentions and in the claim charts Exhibits C-1 through C-11 and D-3. Exhibits C-1 through C-11 and D-3 include exemplary claim charts for the '601 Patent, including citations to where in the references the teachings, suggestions, and motivations to combine the references are disclosed. Further reasons

to combine the references identified in Exhibits C-1 through C-11 and D-3 include the nature of the problem being solved, the express, implied and inherent teachings of the prior art, the knowledge of POSITAs, that such combinations would have yielded predictable results, and that such combinations would have represented known alternatives to a POSITA.

Below is a list of examples of certain combinations of prior art that a person of ordinary skill in the art would have been motivated to combine around the time of the alleged invention of the ’601 Patent. The combinations listed below are meant to provide additional clarity on motivations to combine some of the references, but is not meant to list every possible combination and is not an admission that unlisted combinations would not have been obvious to a person of ordinary skill in the art. Cisco and PAN reserve the right to amend or add exemplary obviousness combinations as discovery continues, pursuant to any orders are issued from the Court, and after any change in Croga’s positions.

For example, the alleged invention of the ’601 Patent implements well-known prior art methods and devices for protecting networks and computer systems, including using internal, host, and network firewalls, and virtualization. By way of example only, and not exhaustive of all references, citations, and combinations thereof, a POSITA at the time of the alleged inventions would have been aware of the concepts described in each of the prior art described in C-1 through C-11 and D-3. Indeed, such a POSITA would have possessed knowledge of protecting networks and computer systems through the use of firewalls and virtualization including with respect to applications executing in an isolated computer environment, they would have been well-equipped to design the claimed systems and methods, such as those described in detail by the references explained below and in C-1 through C-11 and D-3.

For example, skilled artisans would have been motivated to combine the references identified in Exhibits C-1 through C-11 with the references identified in D-3 because the references identified in D-3 disclose virtualization, isolation, and/or security techniques for computer systems and/or networks and the references identified in Exhibits C-1 through C-11 relate to the same area(s) of virtualization and/or computer and network security. Skilled artisans would have understood that the references identified in D-3 could be readily combined with the references identified in Exhibits C-1 through C-11 because they relate to network and computer security, including in virtual environments executing applications. Thus, a skilled artisan would have been motivated to use the virtualization, isolation, and/or security techniques for computer systems and/or networks disclosed in the references identified in D-3 with the virtualization and/or computer systems and networks disclosed in the references identified in Exhibits C-1 through C-11 and would have recognized that the results of this combination were predictable.

For example, skilled artisans would have been motivated to combine Walsh ’187 (or Jeffries ’189 or Wookey ’921 or Austin ’964 or System z or Secure Browsing System or MSIP or xVM) with LaBine ’999 (or vShield or XenApp or Windows Virtualization or Amiga ’972) because LaBine ’999 (or vShield or XenApp or Windows Virtualization or Amiga ’972) discloses multi-user interactive software applications running in computer systems and/or networks and Walsh ’187 (or Jeffries ’189 or Wookey ’921 or Austin ’964 or System z or Secure Browsing System or MSIP or xVM) discloses executing applications in an isolated computing environment within computer systems and/or networks. Skilled artisans would have understood that LaBine ’999 (or vShield or XenApp or Windows Virtualization or Amiga ’972) could be readily combined with Walsh ’187 (or Jeffries ’189 or Wookey ’921 or Austin ’964 or System z or Secure Browsing System or MSIP or xVM) because as of the priority date of the ’601 Patent it was trivial to execute

multi-user interactive software applications in an isolated computing environment. *See, e.g.*, Exhibit C-8; Exhibit D-3. Thus, a skilled artisan would have been motivated to use the multi-user interactive software application disclosed in LaBine ’999 (or vShield or XenApp or Windows Virtualization or Amiga ’972) with the virtualization and/or computer systems and networks disclosed in Walsh ’187 (or Jeffries ’189 or Wookey ’921 or Austin ’964 or System z or Secure Browsing System or MSIP or xVM) and would have recognized that the results of this combination were predictable.

For example, skilled artisans would have been motivated to combine Walsh ’187 (or Jeffries ’189 or System z or Secure Browsing System or MSIP or Windows Virtualization or XenApp) with Wookey ’921 (or Austin ’964 or vShield or Hoy ’780) because Wookey ’921 (or Austin ’964 or vShield or Hoy ’780) discloses using an internal isolation firewall to isolate virtual and host systems and Walsh ’187 (or Jeffries ’189 or System z or Secure Browsing System or MSIP or Windows Virtualization or XenApp) discloses virtualization, isolation, and security techniques for computer systems and networks. Skilled artisans would have understood that Wookey ’921 (or Austin ’964 or vShield or Hoy ’780) could be readily combined with Walsh ’187 (or Jeffries ’189 or System z or Secure Browsing System or MSIP or Windows Virtualization or XenApp) because both relate to network and computer security, including in virtual environments. Thus, a skilled artisan would have been motivated to implement the internal isolation firewall disclosed in Wookey ’921 (or Austin ’964 or vShield or Hoy ’780) with the virtualization and/or computer systems and networks disclosed in Walsh ’187 (or Jeffries ’189 or System z or Secure Browsing System or MSIP or Windows Virtualization or XenApp) to increase computer system and network security and would have recognized that the results of this combination were predictable.

For example, skilled artisans would have been motivated to combine Walsh ’187 (or Jeffries ’189 or Austin ’964 or MSIP or xVM) with Wookey ’921 (or vShield or System z or Secure Browser System or XenApp or Windows Virtualization or Hoy ’780 or Walker ’863 or Todorovic ’363) because Wookey ’921 (or vShield or System z or Secure Browser System or XenApp or Windows Virtualization or Hoy ’780 or Walker ’863 or Todorovic ’363) discloses using a host-based firewall to increase security of computer systems and networks having isolated computing environments and Walsh ’187 (or Jeffries ’189 or Austin ’964 or MSIP or xVM) discloses virtualization, isolation, and security techniques for computer systems and networks having isolated computing environments. Skilled artisans would have understood that Wookey ’921 (or vShield or System z or Secure Browser System or XenApp or Windows Virtualization or Hoy ’780 or Walker ’863 or Todorovic ’363) could be readily combined with Walsh ’187 (or Jeffries ’189 or Austin ’964 or MSIP or xVM) because both relate to network and computer security. Thus, a skilled artisan would have been motivated to implement the host-based firewall in Wookey ’921 (or vShield or System z or Secure Browser System or XenApp or Windows Virtualization or Hoy ’780 or Walker ’863 or Todorovic ’363) with the virtualization and/or computer system and networks disclosed in Walsh ’187 (or Jeffries ’189 or Austin ’964 or MSIP or xVM) to restricted communication between networked devices and/or increase computer system and network security and would have recognized that the results of this combination were predictable.

For example, skilled artisans would have been motivated to combine Walsh ’187 (or Jeffries ’189 or Wookey ’921 or Austin ’964 or vShield or System z or Secure Browsing System or XenApp or MSIP or Windows Virtualization or xVM) with Ishaya ’889 (or Mortman ’030 or Malhotra ’517 or Benoit ’031 or Bloch ’502 or Neumann ’761 or Broumas ’284) because both of

these references describe systems and methods for improving security of computer systems and/or networks, including those that implement isolated computing environments. Skilled artisans would have understood that the authentication methods and devices of Ishaya ’889 (or Mortman ’030 or Malhotra ’517 or Benoit ’031 or Bloch ’502 or Neumann ’761 or Broumas ’284) for isolated computing environments could be readily incorporated into the virtualization and/or computer systems and networks of Walsh ’187 (or Jeffries ’189 or Wookey ’921 or Austin ’964 or vShield or System z or Secure Browsing System or XenApp or MSIP or Windows Virtualization or xVM) to improve security. Additionally, the inclusion of the authentication methods and devices from Ishaya ’889 (or Mortman ’030 or Malhotra ’517 or Benoit ’031 or Bloch ’502 or Neumann ’761 or Broumas ’284) with the isolated computing environments in Walsh ’187 (or Jeffries ’189 or Wookey ’921 or Austin ’964 or vShield or System z or Secure Browsing System or XenApp or MSIP or Windows Virtualization or xVM) constitutes routine implementation details and such authentication was routine. *See, e.g.*, Exhibit D-3. Thus, a skilled artisan would have been motivated to implement the authentication methods and devices of Ishaya ’889 (or Mortman ’030 or Malhotra ’517 or Benoit ’031 or Bloch ’502 or Neumann ’761 or Broumas ’284) with the virtualization and/or computer systems and networks disclosed in Walsh ’187 (or Jeffries ’189 or Wookey ’921 or Austin ’964 or vShield or System z or Secure Browsing System or XenApp or MSIP or Windows Virtualization or xVM) to increase computer system and network security and would have recognized that the results of this combination were predictable.

For example, skilled artisans would have been motivated to combine Walsh ’187 (or Wookey ’921 or vShield or Austin ’964 or Secure Browsing System or xVM) with Jeffries ’189 (or System z or VMware vShield or Amiga ’972 or LaBine ’999) because Jeffries ’189 (or System z or VMware vShield or Amiga ’972 or LaBine ’999) discloses the use of proxy devices to send

data to untrusted destinations to improve security and Walsh ’187 (or Wookey ’921 or vShield or Austin ’964 or Secure Browsing System or xVM) discloses virtualization, isolation, and/or security techniques for computer systems to improve security. Skilled artisans would have combined Walsh ’187 (or Wookey ’921 or vShield or Austin ’964 or Secure Browsing System or xVM) with Jeffries ’189 (or System z or VMware vShield or Amiga ’972 or LaBine ’999) because a skilled artisan would know that sending data to an untrusted destination through a proxy device after authentication increases computer and network security. Thus, a skilled artisan would have been motivated to combine Walsh ’187 (or Wookey ’921 or vShield or Austin ’964 or Secure Browsing System or xVM) with the proxy devices Jeffries ’189 (or System z or VMware vShield or Amiga ’972 or LaBine ’999) to further protect the computer systems and networks from malicious threats and would have recognized that the results of this combination were predictable.

For example, skilled artisans would have been motivated to combine Austin ’964 with Walsh ’187 (or Jeffries ’189 or Bloch ’502 or Wookey ’921 or Pai or Hoy ’780) because Walsh ’187 (or Jeffries ’189 or Bloch ’502 or Wookey ’921 or Pai or Hoy ’780) discloses virtualization, isolation, and/or security techniques for computer systems and/or networks and Austin ’964 discloses virtualization, isolation, and/or security techniques for a host computer. Skilled artisans would have understood that Walsh ’187 (or Jeffries ’189 or Bloch ’502 or Wookey ’921 or Pai or Hoy ’780) could be readily combined with Austin ’964 because both relate to virtualization, isolation, and/or security techniques. Thus, a skilled artisan would have been motivated to combine Austin ’964 with the virtualization and/or computer systems and networks disclosed in Walsh ’187 (or Jeffries ’189 or Bloch ’502 or Wookey ’921 or Pai or Hoy ’780) to further protect the host from malicious threats and would have recognized that the results of this combination were predictable.

For example, to the extent a claim limitation is not met by a reference or system in C-1 through C-11, at least under Plaintiff's apparent interpretation of the Asserted Claims, those limitations were already well known in the art and would have been obvious to a POSITA. For example, before the earliest priority date of the '601 Patent, at least PAN's WildFire disclosed using applications in isolated sandbox environments. *See Findings from WildFire*, Palo Alto Networks (November 8, 2011) https://www.paloaltonetworks.com/blog/2011/11/findings-from-wildfire (CROGA-PA-00002254); *Integrated Threat Prevention Datasheet*, Palo Alto Networks (2011) https://media.paloaltonetworks.com/documents/datasheet-threat-prevention.pdf (CROGA-PA-00002249); *WildFire Administrator's Guide Version 7.0*, Palo Alto Networks (August 13, 2017) https://docs.paloaltonetworks.com/content/dam/techdocs/en_US/pdf/eol/wildfire-70-admin-guide.pdf (CROGA-PA-00002281)*; See also* Exhibit D-3. Indeed, it was well-known prior to the earliest filing date to execute applications in isolated computing environments. *See, e.g.*, *Id.*; *see also* Golan '549, Abstract ("The present invention is a method of creating a secure sandbox within which a plurality of downloaded software components can execute in a secure manner"). A skilled artisan would appreciate that before the earliest priority date of the '601 Patent, running applications in an isolated sandbox environment was a well-known method for improving computer system and network security and it would have been obvious to combine sandboxing methods and systems in computer systems and networks to yield predictable results.

For example, to the extent a claim limitation is not met by a reference or system in C-1 through C-11, at least under Plaintiff's apparent interpretation of the Asserted Claims, those limitations were already well known in the art and would have been obvious to a POSITA. For example, before the earliest priority date of the '601 Patent, at least VMware vShield, Mortman, Ishaya, Malhotra, Benoit, and Bloch disclosed authenticating remote users and isolated computing

environments, including to authorize usage of a service or application using authentication devices in the same way as Plaintiff's apparent interpretation of the Asserted Claims in its infringement contentions. *See* Exhibit D-3. A skilled artisan would appreciate that before the earliest priority date of the '601 Patent, authentication methods were well-known for improving computer system and network security and it would have been obvious to combine well-known authentication methods (*see, e.g.*, VMware vShield, Mortman, Ishaya, Malhotra, Benoit, and Bloch) in isolated computing environments to yield predictable results.

For example, to the extent a claim limitation is not met by a reference or system in C-1 through C-11, at least under Plaintiff's apparent interpretation of the Asserted Claims, those limitations were already well known in the art and would have been obvious to a POSITA. For example, before the earliest priority date of the '601 Patent, at least capabilities for authentication across different services on a network, by way of identity federation, has been known since as far back as 2003. For example, by 2003, Microsoft developed Windows communications technologies, code-named "Indigo," which provided capabilities for authentication across different services on a network. In 2006, Indigo evolved into "Windows Communication Foundation" ("WCF"), which retained the use of bindings that allowed for authentication of messages across platforms. In 2007, Microsoft launched "Windows Identity Foundation" ("WIF"), a programming model that complemented WCF by providing a uniform framework for authentication across different domains. Prior to 2005, several identity federation standards existed, including SAML 1.1 and Shibboleth—both of which were available as early as 2003. *See* SAML 1.1 (August 2003); Shibboleth (July 2003); *Introduction to Windows Server 2003 Active Directory Application Mode* (published August 11, 2002), https://web.archive.org/web/20050105211702/http://www.microsoft.com/windowsserver2003/te

chinfo/overview/adam.mspx (CROGA-PA-00002258); *Introduction to Active Directory Application Mode* (published August 2003) https://web.archive.org/web/20051105015124/http://download.microsoft.com/download/5/7/a/57a8d3ed-89f7-4878-b945-b68c447f288a/Adam.DOC (CROGA-PA-00002234). By 2009, there were two identity standards: Security Assertion Markup Language and WS-Federation identity standard to ADFS. *See* Zulfilqar Ahmed, AD FS 1.0 in Identity Solutions, Microsoft J. for Developer MSDN Mag., 50-58 (Nov. 2009); Security Assertion Markup Language V2.0, at 9 (March 25, 2008) https://docs.oasis-open.org/security/saml/Post2.0/sstc-saml-tech-overview-2.0.html. (CROGA-PA-00002269) Over the next decade, FIDO2, OpenID, and WebAuthn were launched to unify and spread implementation of password-less authentication and identity federation across web applications. *WebAuthn APIs for passwordless authentication on Windows*, (July 27, 2023) https://learn.microsoft.com/en-us/windows/security/identity-protection/hello-for-business/webauthn-apis (CROGA-PA-00002280). A skilled artisan would appreciate that before the earliest priority date of the ’601 Patent, authenticating across different services on a network was a well-known method for improving computer system and network security and it would have been obvious to combine sandboxing methods and systems with authentication techniques in computer systems and networks to yield predictable results.

For example, to the extent a claim limitation is not met by a reference or system in C-1 through C-11, at least under Plaintiff’s apparent interpretation of the Asserted Claims, those limitations were already well known in the art and would have been obvious to a POSITA. For example, before the earliest priority date of the ’601 Patent, at least XenApp, Windows Virtualization, MSIP, Secure Broser System, xVM, and vShield disclosed using container virtualization technology (including at least Docker, Linux Operating System, and/or LXC) in the

same way as Plaintiff's apparent interpretation of the Asserted Claims in its infringement contentions. *See* Exhibits C-4, C-7, C-8, C-9, C-10, C-11; *see also* Exhibit D-3. A skilled artisan would appreciate that before the earliest priority date of the '601 Patent, it would have been obvious to combine well-known systems that use container technology to perform the well-known functions of containers to yield predictable results.

The references identified in Exhibits C-1 through C-11 and D-3 are analogous prior art to the subject matter of the Asserted Claims and are properly combinable. Indeed, the known work in this field of endeavor would prompt variations of it for users within the same field, as the variations were predictable to one of ordinary skill in the art. Therefore, these references provide interrelated teachings and one of ordinary skill would look to the concepts in any of these references when seeking to solve the problems purportedly addressed by the '601 Patent.

III. Invalidity Based Upon Indefiniteness, Lack Of Sufficient Written Description, Lack Of Enablement

a) Indefiniteness

Pre-AIA Paragraph 2 of Section 112 of the Patent Act requires that a patent claim "particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention." Pre-AIA 35 U.S.C. § 112 ¶ 2. Subsection (b) of Section 112 of the Patent Act requires that a patent claim "particularly point[] out and distinctly claim[] the subject matter which the inventor or a joint inventor regards as the invention." 35 U.S.C. § 112(b). Claim terms that fail to inform those skilled in the art "with reasonable certainty . . . about the scope of the invention" fail the definiteness requirement of pre-AIA paragraph 2 of Section 112 and/or Subsection (b) of Section 112. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014).

Defendants have not yet seen Croga's proposed constructions for terms in the Asserted Claims. At least the Asserted Claims referenced below are invalid as indefinite under pre-AIA

and/or AIA 35 U.S.C. § 112. In particular, the following limitations, read in light of the intrinsic evidence and the apparent scope of the claims alleged by Croga in its Infringement Contentions, fail to inform those skilled in the art with reasonable certainty about the scope of the claimed inventions:

1. '368 Patent

- "a call control gatekeeper, a first interface and a second interface"

At least under Croga's apparent interpretation of the claim language in its Infringement Contentions, claim 1 of the '368 Patent is invalid under pre-AIA 35 U.S.C. § 112, ¶ 2 because the claim language, when read in light of the intrinsic record, fails to inform a person of ordinary skill in the art the scope of the claimed invention with respect to the "a call control gatekeeper, a first interface and a second interface" claim limitation. For example, one of ordinary skill in the art cannot ascertain with reasonable certainty the scope of the claimed "a call control gatekeeper, a first interface and a second interface" because the specification fails to provide guidance as to what would be considered in the scope of "a call control gatekeeper, a first interface and a second interface" under Croga's apparent application of this limitation.

- "call quality signal"

At least under Croga's apparent interpretation of the claim language in its Infringement Contentions, claim 1 of the '368 Patent is invalid under pre-AIA 35 U.S.C. § 112, ¶ 2 because the claim language, when read in light of the intrinsic record, fails to inform a person of ordinary skill in the art the scope of the claimed invention with respect to the "call quality signal" claim limitation. For example, one of ordinary skill in the art cannot ascertain with reasonable certainty the scope of the claimed "call quality signal" because the specification fails to provide guidance

as to what would be considered in the scope of "call quality signal" under Croga's apparent application of this limitation.

- "adjustment signal"

At least under Croga's apparent interpretation of the claim language in its Infringement Contentions, claim 1 of the '368 Patent is invalid under pre-AIA 35 U.S.C. § 112, ¶ 2 because the claim language, when read in light of the intrinsic record, fails to inform a person of ordinary skill in the art the scope of the claimed invention with respect to the "adjustment signal" claim limitation. For example, one of ordinary skill in the art cannot ascertain with reasonable certainty the scope of the claimed "adjustment signal" because the specification fails to provide guidance as to what would be considered in the scope of "adjustment signal" under Croga's apparent application of this limitation.

2. '780 Patent

- "the virtual system is a separate operating system or a software module operating on the computer system"

At least under Croga's apparent interpretation of the claim language in its Infringement Contentions, claims 1 and 11 and their dependent claims of the '780 Patent are invalid under pre-AIA 35 U.S.C. § 112, ¶ 2 because the claim language, when read in light of the intrinsic record, fails to inform a person of ordinary skill in the art the scope of the claimed invention with respect to the "the virtual system is a separate operating system or a software module operating on the computer system" claim limitation. For example, one of ordinary skill in the art cannot ascertain with reasonable certainty the scope of the claimed "the virtual system is a separate operating system or a software module operating on the computer system" because the specification fails to provide guidance as to what would be considered in the scope of "the virtual system is a separate

operating system or a software module operating on the computer system" under Croga's apparent application of this limitation.

- "internal firewall configured to separate the host system from the virtual system in the computer system"/"separating the host system from the virtual system using an internal firewall executed on the computer system"

At least under Croga's apparent interpretation of the claim language in its Infringement Contentions, claims 1 and 11 and their dependent claims of the '780 Patent are invalid under pre-AIA 35 U.S.C. § 112, ¶ 2 because the claim language, when read in light of the intrinsic record, fails to inform a person of ordinary skill in the art the scope of the claimed invention with respect to the "internal firewall configured to separate the host system from the virtual system in the computer system"/"separating the host system from the virtual system using an internal firewall executed on the computer system" claim limitations. For example, one of ordinary skill in the art cannot ascertain with reasonable certainty the scope of the claimed "internal firewall configured to separate the host system from the virtual system in the computer system"/"separating the host system from the virtual system using an internal firewall executed on the computer system" because the specification fails to provide guidance as to what would be considered in the scope of "internal firewall configured to separate the host system from the virtual system in the computer system"/"separating the host system from the virtual system using an internal firewall executed on the computer system" under Croga's apparent application of these limitations.

- "virtual memory space segregated from the host memory space"

At least under Croga's apparent interpretation of the claim language in its Infringement Contentions, claim 3 of the '780 Patent is invalid under pre-AIA 35 U.S.C. § 112, ¶ 2 because the claim language, when read in light of the intrinsic record, fails to inform a person of ordinary skill

in the art the scope of the claimed invention with respect to the "virtual memory space segregated from the host memory space" claim limitation. For example, one of ordinary skill in the art cannot ascertain with reasonable certainty the scope of the claimed "virtual memory space segregated from the host memory space" because the specification fails to provide guidance as to what would be considered in the scope of "virtual memory space segregated from the host memory space" under Croga's apparent application of this limitation.

3. '601 Patent

- "workspace"

At least under Croga's apparent interpretation of the claim language in its Infringement Contentions, claims 1 and 9 and their dependent claims of the '601 Patent are invalid under 35 U.S.C. § 112(b) because the claim language, when read in light of the intrinsic record, fails to inform a person of ordinary skill in the art the scope of the claimed invention with respect to the "workspace" claim limitation. For example, one of ordinary skill in the art cannot ascertain with reasonable certainty the scope of the claimed "workspace" because the specification fails to provide guidance as to what would be considered in the scope of "workspace" under Croga's apparent application of this limitation.

- "a first set of one or more applications or processes"

At least under Croga's apparent interpretation of the claim language in its Infringement Contentions, claims 1 and 9 and their dependent claims of the '601 Patent are invalid under 35 U.S.C. § 112(b) because the claim language, when read in light of the intrinsic record, fails to inform a person of ordinary skill in the art the scope of the claimed invention with respect to the "a first set of one or more applications or processes" claim limitation. For example, one of ordinary skill in the art cannot ascertain with reasonable certainty the scope of the claimed "a first set of

one or more applications or processes" because the specification fails to provide guidance as to what would be considered in the scope of "a first set of one or more applications or processes" under Croga's apparent application of this limitation.

- "isolated computing environment that uses the host operating system"

At least under Croga's apparent interpretation of the claim language in its Infringement Contentions, claims 1 and 9 and their dependent claims of the '601 Patent are invalid under 35 U.S.C. § 112(b) because the claim language, when read in light of the intrinsic record, fails to inform a person of ordinary skill in the art the scope of the claimed invention with respect to the "isolated computing environment that uses the host operating system" claim limitation. For example, one of ordinary skill in the art cannot ascertain with reasonable certainty the scope of the claimed "isolated computing environment that uses the host operating system" because the specification fails to provide guidance as to what would be considered in the scope of "isolated computing environment that uses the host operating system" under Croga's apparent application of this limitation.

- "a multi-user interactive software application"

At least under Croga's apparent interpretation of the claim language in its Infringement Contentions, claims 1 and 9 and their dependent claims of the '601 Patent are invalid under 35 U.S.C. § 112(b) because the claim language, when read in light of the intrinsic record, fails to inform a person of ordinary skill in the art the scope of the claimed invention with respect to the "a multi-user interactive software application" claim limitation. For example, one of ordinary skill in the art cannot ascertain with reasonable certainty the scope of the claimed "a multi-user interactive software application" because the specification fails to provide guidance as to what

would be considered in the scope of "a multi-user interactive software application" under Croga's apparent application of this limitation.

- "internal isolation firewall"

At least under Croga's apparent interpretation of the claim language in its Infringement Contentions, claims 1 and 9 and their dependent claims of the '601 Patent are invalid under 35 U.S.C. § 112(b) because the claim language, when read in light of the intrinsic record, fails to inform a person of ordinary skill in the art the scope of the claimed invention with respect to the "internal isolation firewall" claim limitation. For example, one of ordinary skill in the art cannot ascertain with reasonable certainty the scope of the claimed "internal isolation firewall" because the specification fails to provide guidance as to what would be considered in the scope of "internal isolation firewall" under Croga's apparent application of this limitation.

- "authenticate[authenticating] the isolated computing environment"

At least under Croga's apparent interpretation of the claim language in its Infringement Contentions, claims 1 and 9 and their dependent claims of the '601 Patent are invalid under 35 U.S.C. § 112(b) because the claim language, when read in light of the intrinsic record, fails to inform a person of ordinary skill in the art the scope of the claimed invention with respect to the "authenticate[authenticating] the isolated computing environment" claim limitations. For example, one of ordinary skill in the art cannot ascertain with reasonable certainty the scope of the claimed "authenticate[authenticating] the isolated computing environment" because the specification fails to provide guidance as to what would be considered in the scope of "authenticate[authenticating] the isolated computing environment" under Croga's apparent application of these limitations.

- "authentication device"

At least under Croga's apparent interpretation of the claim language in its Infringement Contentions, claims 1 and 9 and their dependent claims of the '601 Patent are invalid under 35 U.S.C. § 112(b) because the claim language, when read in light of the intrinsic record, fails to inform a person of ordinary skill in the art the scope of the claimed invention with respect to the "authentication device" claim limitation. For example, one of ordinary skill in the art cannot ascertain with reasonable certainty the scope of the claimed "authentication device" because the specification fails to provide guidance as to what would be considered in the scope of "authentication device" under Croga's apparent application of this limitation.

- "send[sending] data to an untrusted destination . . . when the isolated computing environment has been authenticated"

At least under Croga's apparent interpretation of the claim language in its Infringement Contentions, claims 1 and 9 and their dependent claims of the '601 Patent is invalid under 35 U.S.C. § 112(b) because the claim language, when read in light of the intrinsic record, fails to inform a person of ordinary skill in the art the scope of the claimed invention with respect to the "send[sending] data to an untrusted destination . . . when the isolated computing environment has been authenticated" claim limitations. For example, one of ordinary skill in the art cannot ascertain with reasonable certainty the scope of the claimed "send[sending] data to an untrusted destination . . . when the isolated computing environment has been authenticated" because the specification fails to provide guidance as to what would be considered in the scope of "send[sending] data to an untrusted destination . . . when the isolated computing environment has been authenticated" under Croga's apparent application of these limitations.

b) Enablement/Written Description

The Asserted Claims are further invalid under pre-AIA 35 U.S.C. § 112 ¶ 1, and/or 35 U.S.C. § 112(a), because the specification does not contain an adequate written description of the

subject matter of these claims, and would not enable one of skill in the relevant art to make and use the same.

For a claim to be valid, the specification must contain a written description of the invention. *See* pre-AIA 35 U.S.C. § 112, ¶ 1; 35 U.S.C. § 112(a). To fulfill the written description requirement, it "must clearly allow [POSITAs] to recognize that [the inventor] invented what is claimed." *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (second alteration in original) (citations and internal quotation marks omitted). "[T]he applicant must 'convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention,' and demonstrate that by disclosure in the specification of the patent." *Carnegie Mellon Univ. v. Hoffmann-La Roche Inc.*, 541 F.3d 1115, 1122 (Fed. Cir. 2008) (quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563–64 (Fed. Cir. 1991)).

The specification must also describe "the manner and process of making and using [the invention], in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains . . . to make and use the" invention. *Ariad*, 598 F.3d at 1343; *see also* pre-AIA 35 U.S.C. § 112 ¶ 1; 35 U.S.C. § 112(a). "The enablement requirement is satisfied when one skilled in the art, after reading the specification, could practice the claimed invention without undue experimentation." *AK Steel Corp. v. Sollac & Ugine*, 344 F.3d 1234, 1244 (Fed. Cir. 2003) (citation omitted). "The scope of the claims must be less than or equal to the scope of the enablement." *Nat'l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc.*, 166 F.3d 1190, 1196 (Fed. Cir. 1999).

At least the Asserted Claims referenced below are invalid under 35 U.S.C. § 112. In particular, the following limitations, read in light of the intrinsic evidence and the apparent scope

of the claims alleged by Croga in its Infringement Contentions, fail to provide adequate written description and/or an enabling disclosure:

1. '368 Patent

- "a call control gatekeeper, a first interface and a second interface"

Claim 1 of the '368 Patent is invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and apparent interpretation of the scope of the claim language, lack adequate written description support for the term "a call control gatekeeper, a first interface and a second interface" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "a call control gatekeeper, a first interface and a second interface," nor is the provided description sufficient to one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

- "call quality signal"

Claim 1 of the '368 Patent is invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and apparent interpretation of the scope of the claim language, lack adequate written description support for the term "call quality signal" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "call quality signal," nor is the provided description sufficient to one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

- "adjustment signal"

Claims 1 of the '368 Patent is invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and

apparent interpretation of the scope of the claim language, lack adequate written description support for the terms "adjustment signal" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "adjustment signal," nor is the provided description sufficient to one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

Additionally, Croga's Infringement Contentions demonstrate that Croga is interpreting the claim contrary to the purported inventions described in the specification. Based on Defendants' review and current understanding of Croga's Infringement Contentions, Croga is attempting to construe the claim in a manner that is inconsistent with the written specification and prosecution history, as well as with the understanding of one of ordinary skill in the art at the time the application that issued as the '368 Patent was filed. Croga's allegations are inconsistent with the plain language of the claim, the supporting description, and the prosecution history. Thus, to the extent the asserted claim is found to cover one or more of the accused products in Croga's Infringement Contentions, the claim is also invalid under 35 U.S.C. § 112 ¶ 1 because its full scope is not supported or enabled by the written description of the '368 Patent.

For example, to the extent Defendants understand Croga's deficient infringement contentions, Croga's apparent interpretation of the Asserted Claim of the '368 Patent is that the claim requirement "a VoIP service provider system having a call control gatekeeper, a first interface and a second interface" encompasses call admission control as a gatekeeper for controlling the number of calls based on available resources and bandwidth. Further, Croga's apparent interpretation of the Asserted Claims is that the claim requirement of "the call control gatekeeper configured to receive a call quality signal from the first VoIP telephone and send an adjustment signal based on the call quality signal to the first and second VoIP telephones

instructing the first and second VoIP telephones to communicate using a second codec" encompasses processing a Re-INVITE which functions as a call quality signal message. Based at least on the foregoing examples, under the apparent scope of the asserted claims as proposed by Croga, the Asserted Claims are not supported or enabled by the written description of the '368 Patent.

2. '780 Patent

- "the virtual system is a separate operating system or a software module operating on the computer system"

Claims 1 and 11 and their dependent claims of the '780 Patent are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and apparent interpretation of the scope of the claim language, lack adequate written description support for the term "the virtual system is a separate operating system or a software module operating on the computer system" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "the virtual system is a separate operating system or a software module operating on the computer system," nor is the provided description sufficient to one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

- "internal firewall configured to separate the host system from the virtual system in the computer system"/"separating the host system from the virtual system using an internal firewall executed on the computer system"

Claims 1 and 11 and their dependent claims of the '780 Patent are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and apparent interpretation of the scope of the claim language,

lack adequate written description support for the terms "internal firewall configured to separate the host system from the virtual system in the computer system"/"separating the host system from the virtual system using an internal firewall executed on the computer system" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "internal firewall configured to separate the host system from the virtual system in the computer system"/"separating the host system from the virtual system using an internal firewall executed on the computer system," nor is the provided description sufficient to one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

- "host-based firewall"

Claims 1 and 11 and their dependent claims of the '780 Patent are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and apparent interpretation of the scope of the claim language, lack adequate written description support for the terms "host-based firewall" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "host-based firewall," nor is the provided description sufficient to one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

- "a network firewall or a web proxy . . . configured to implement network isolation"/"implementing network isolation . . . via the at least one device"

Claims 1 and 11 and their dependent claims of the '780 Patent are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and apparent interpretation of the scope of the claim language,

lack adequate written description support for the terms "a network firewall or a web proxy . . . configured to implement network isolation"/"implementing network isolation . . . via the at least one device" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "a network firewall or a web proxy . . . configured to implement network isolation"/"implementing network isolation . . . via the at least one device," nor is the provided description sufficient to one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

- "virtual memory space segregated from the host memory space"

Claim 3 of the '780 Patent is invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and apparent interpretation of the scope of the claim language, lacks adequate written description support for the term "virtual memory space segregated from the host memory space" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "virtual memory space segregated from the host memory space," nor is the provided description sufficient to one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

Additionally, Croga's Infringement Contentions demonstrate that Croga is interpreting the claims contrary to the purported inventions described in the specification. Based on Defendants' review and current understanding of Croga's Infringement Contentions, Croga is attempting to construe the claims in a manner that is inconsistent with the written specification and prosecution history, as well as with the understanding of one of ordinary skill in the art at the time the application that issued as the '780 Patent was filed. Croga's allegations are inconsistent with the plain language of the claims, the supporting description, and the prosecution history. Thus, to the

extent the asserted claims are found to cover one or more of the accused products in Croga's Infringement Contentions, such claims are also invalid under 35 U.S.C. § 112 ¶ 1 because their full scope is not supported or enabled by the written description of the '780 Patent.

For example, to the extent Defendants understand Croga's deficient infringement contentions, Croga's apparent interpretation of the Asserted Claims of the '780 Patent is that the claim requirement "separating the host system from the virtual system using an internal firewall executed on the computer system" encompasses isolating a virtual machine from a host operating system, including through the use of a hypervisor or containerization application. Further, Croga's apparent interpretation of the Asserted Claims is that the claim requirement of "implementing network isolation between the computer system and the network using a host-based firewall executed on the computer system" encompasses restricting accessible network ports through device settings or use of access control lists, or a firewall component on a separate device from "the computer system." Further, Croga's apparent interpretation of the Asserted Claims is that the claim requirement "preventing malware introduced to the computer system from moving to another computer system of the networked computer system" encompasses mitigating future threats (e.g., updating signatures or detection capabilities or black-listing a file from the network). Based at least on the foregoing examples, under the apparent scope of the asserted claims as proposed by Croga, the Asserted Claims are not supported or enabled by the written description of the '780 Patent.

3. '601 Patent

- "a first set of one or more applications or processes"

Claims 1 and 9 and their dependent claims of the '601 Patent are invalid under 35 U.S.C. § 112(a) because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and apparent interpretation of the scope of the claim language, lack

adequate written description support for the terms "a first set of one or more applications or processes" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "a first set of one or more applications or processes" nor is the provided description sufficient to one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

- "isolated computing environment that uses the host operating system"

Claims 1 and 9 and their dependent claims of the '601 Patent are invalid under 35 U.S.C. § 112(a) because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and apparent interpretation of the scope of the claim language, lack adequate written description support for the term "isolated computing environment that uses the host operating system" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "isolated computing environment that uses the host operating system," nor is the provided description sufficient to one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

- "multi-user interactive software application"

Claims 1 and 9 and their dependent claims of the '601 Patent are invalid under 35 U.S.C. § 112(a) because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and apparent interpretation of the scope of the claim language, lack adequate written description support for the terms "multi-user interactive software application" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "multi-user interactive software application" nor is the provided description sufficient to

one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

- "isolate[isolating] the isolated computing environment from the workspace using an internal firewall"

Claims 1 and 9 and their dependent claims of the '601 Patent are invalid under 35 U.S.C. § 112(a) because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and apparent interpretation of the scope of the claim language, lack adequate written description support for the terms "isolate[isolating] the isolated computing environment from the workspace using an internal firewall" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "isolate[isolating] the isolated computing environment from the workspace using an internal firewall," nor is the provided description sufficient to one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

- "authenticate[authenticating] the isolated computing environment"

Claims 1 and 9 and their dependent claims of the '601 Patent are invalid under 35 U.S.C. § 112(a) because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and apparent interpretation of the scope of the claim language, lack adequate written description support for the terms "authenticate[authenticating] the isolated computing environment" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "authenticate[authenticating] the isolated computing environment," nor is the provided description sufficient to one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

- "authentication device"

Claims 1 and 9 and their dependent claims of the '601 Patent are invalid under 35 U.S.C. § 112(a) because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and apparent interpretation of the scope of the claim language, lack adequate written description support for the terms "authentication device" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "authentication device," nor is the provided description sufficient to one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

- "host-based firewall"

Claims 5 and 13 and their dependent claims of the '601 Patent are invalid under 35 U.S.C. § 112(a) because the claim language, when read in light of the intrinsic record and Croga's Infringement Contentions and apparent interpretation of the scope of the claim language, lack adequate written description support for the terms "host-based firewall" nor is the provided description sufficient to enable one of ordinary skill in the art to implement the claimed "host-based firewall," nor is the provided description sufficient to one of ordinary skill in the art such that such a person would reasonably conclude that the inventor had possession of the invention at the time of filing.

Additionally, Croga's Infringement Contentions demonstrate that Croga is interpreting the claims contrary to the purported inventions described in the specification. Based on Defendants' review and current understanding of Croga's Infringement Contentions, Croga is attempting to construe the claims in a manner that is inconsistent with the written specification and prosecution history, as well as with the understanding of one of ordinary skill in the art at the time the

application that issued as the ’601 Patent was filed. Croga’s allegations are inconsistent with the plain language of the claims, the supporting description, and the prosecution history. Thus, to the extent the asserted claims are found to cover one or more of the accused products in Croga’s Infringement Contentions, such claims are also invalid under 35 U.S.C. § 112 ¶ 1 because their full scope is not supported or enabled by the written description of the ’601 Patent.

For example, to the extent Defendants understand Croga’s deficient infringement contentions, Croga’s apparent interpretation of the Asserted Claims of the ’601 Patent is that the claim requirement “isolate[isolating] the isolated computing environment from the workspace using an internal firewall” encompasses isolating a virtual machine from a host operating system, including through the use of a containerization application that utilizes cgroups, seccomp, and kernel namespaces to separate the host system from the virtual system. Further, Croga’s apparent interpretation of the Asserted Claims is that the claim requirement of “implement a host-based firewall, wherein the host-based firewall isolates the system” encompasses a container orchestration system using an iptables software module. Further, Croga’s apparent interpretation of the Asserted Claims is that the claim requirement “the workspace enables operation of a first set of one or more applications or processes via a first memory space” encompasses management, logging, configuration, orchestration, and file cleaning running on a Linux host operating system. Further, Croga’s apparent interpretation of the Asserted Claims is that the claim requirement of “authenticate the isolated computing environment with an authentication device” encompasses authenticating requests from remote user to authorize usage of the service. Based at least on the foregoing examples, under the apparent scope of the asserted claims as proposed by Croga, the Asserted Claims are not supported or enabled by the written description of the ’601 Patent.

IV. Lack Of Patentable Subject Matter

Cisco contends that the '368 Patent is invalid for claiming unpatentable subject matter under 35 U.S.C. § 101. Pursuant to the Court's Standing Order Regarding Subject Matter Eligibility Contentions Applicable to All Patent Infringement Cases Assigned to Chief District Judge Rodney Gilstrap, the detailed factual and legal bases for Cisco's contentions are set forth in Cisco's Preliminary Subject Matter Eligibility Contentions, served concurrently herewith. Cisco reserves the right to later amend its Subject Matter Eligibility Contentions.

V. Invalidity Based Upon Statutory And Obviousness-Type Double Patenting

Defendants reserve the right to assert that the Asserted Claims are invalid for statutory and/or obviousness-type double patenting.

For example, the Asserted Claims of the '601 Patent are invalid for obviousness-type double patenting because the Asserted Claims of the '601 Patent are not patentably distinct from U.S. Patent No. 11,170,096 (the "'096 Patent")[2] in view of the references identified during prosecution of the '601 Patent, during prosecution of the '096 Patent, and/or the references identified in Section II above.

During prosecution of the application that led to the '601 Patent, the pending claims were "rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-22 of copending Application No. 16/163884," stating the pending claims "are not patentably distinct from each other" in view of Haq et al teaching "Design and Implementation of Sandbox Technique for Isolated Applications." *See* '601 Patent File History at May 7, 2020 Non-Final Rejection at 7. The Examiner provided a claim chart with comments showing how claim 1 of the pending application was not patentably distinct from the claims in the '884 Application in view of Haq et

[2] The '096 Patent issued from Application No. 16/163884 (the "'884 Application").

al., stating "[i]t would have been obvious to modify the mobile device to host computer in order to provide an virtual machine environment for executing untrusted applications." *See* '601 Patent File History at May 7, 2020 Non-Final Rejection at 8-10. After the Examiner agreed to hold the double patenting rejection in abeyance, the rejection was not discussed again during prosecution. *See*'601 Patent File History at Sept. 9, 2020 Final Rejection at 2. The '884 Application issued as the '096 Patent on November 9, 2021, while the '601 Patent was pending. The applicant did not file a terminal disclaimer for the '884 Application (or the '096 Patent). However, the Asserted Claims of the '601 Patent are not patentably distinct from Claims 1, 7, and 12 of the '096 Patent in view of the references identified during prosecution of the '601 Patent, during prosecution of the '096 Patent and/or the references identified in Section II above. As a non-limiting example, Claims 1 and 7 of the '096 Patent cover each element of Claims 1, 5, 9, and 13 of the '601 Patent or it would have been obvious to combine Claims 1 and 7 of the '096 Patent with well-known references disclosing multi-user interactive software applications (*see, e.g.*, LaBine '999, vShield, XenApp, Windows Virtualization, Amiga '972; *see also* Exhibit D-3) and communicating over untrusted networks using proxy devices (*see, e.g.*, Jeffries '189, System z, VMware vShield, Amiga '972, LaBine '999; *see also* Exhibit D-3). Additionally, Claim 12 of the '096 Patent recites "wherein the second set of one or more applications comprises at least one of an Internet browser, an email application, a document editing application, or a social media application," which at least under Plaintiff's apparent interpretation of the Asserted Claims, covers the "multi-user interactive software application" element recited in Claims 1, 5, 9, and 13 of the '601 Patent.

VI. <u>Invalidity Based Upon Improper Inventorship</u>

To date, Croga has not produced any notes or other documents from any of the inventors of the Asserted Patents, and Defendants have not yet deposed the inventors of the Asserted Patents. Defendants plan on conducting discovery regarding the inventorship of the Asserted Patents

consistent with the Court's Docket Control Order, and Defendants reserve their rights to supplement their contention that the Asserted Patents are invalid for improper inventorship as discovery progresses.

VII. Document Production Accompanying Defendants' Invalidity Contentions

Pursuant to Local Patent Rule 3-4(a) and based on their current understanding of Croga's deficient Infringement Contentions, Defendants identify the following documents and materials:

Cisco

- CISCO-CROGA-00000001 to CISCO-CROGA-00003515
- Subject to the terms of the Court's Protective Order (Dkt. No. 50), source code from Cisco is available for inspection at the offices of Desmarais LLP in Washington, D.C.

Fortinet

- Fortinet-Croga_00000541 to Fortinet-Croga_00000708
- Subject to the terms of the Court's Protective Order (Dkt. No. 50), source code from Fortinet is available for inspection at the offices of Duane Morris LLP in Atlanta, Georgia.

PAN

- PAN_CRO-00000001 to PAN_CRO-00008932
- Subject to the terms of the Court's Protective Order (Dkt. No. 50), source code from PAN is available for inspection at the offices of Desmarais LLP in San Francisco, California.

Pursuant to Local Patent Rule 3-4(b), Defendants identify the following documents and materials:

- CROGA-PA00000001 to CROGA-PA-00002377

Dated: August 5, 2024

Respectfully submitted,

/s/ Kyle G. Petrie
Melissa R. Smith
State Bar No. 24001351
Email: melissa@gillamsmithlaw.com
GILLAM & SMITH, LLP
303 South Washington Avenue
Marshall, TX 75670
Telephone: (903) 934-8450
Facsimile: (903) 934-9257

Kerri-Ann Limbeek (*pro hac vice*)
klimbeek@desmaraisllp.com
Tamir Packin (*pro hac vice*)
tpackin@desmaraisllp.com
Leslie Spencer (*pro hac vice*)
lspencer@desmaraisllp.com
Kyle Petrie (*pro hac vice*)
kpetrie@desmaraisllp.com
Ryan Thorne (*pro hac vice*)
rthorne@desmaraisllp.com
DESMARAIS LLP
230 Park Avenue
New York, NY 10169
Telephone: (212) 351-3400
Facsimile: (212) 351-3401

Betty H. Chen (24056720)
bchen@desmaraisllp.com
Gabrielle E. Higgins
ghiggins@desmaraisllp.com
Emily Weber (*pro hac vice*)
eweber@desmaraisllp.com
DESMARAIS LLP
101 California Street, Suite 3000
San Francisco, CA 94111
Telephone: (415) 573-1900
Facsimile: (415) 573-1901

/s/ Betty H. Chen
Melissa R. Smith
State Bar No. 24001351
Email: melissa@gillamsmithlaw.com
GILLAM & SMITH, LLP
303 South Washington Avenue
Marshall, TX 75670
Telephone: (903) 934-8450
Facsimile: (903) 934-9257

Betty H. Chen (24056720)
bchen@desmaraisllp.com
Gabrielle E. Higgins
ghiggins@desmaraisllp.com
Emily Weber (*pro hac vice*)
eweber@desmaraisllp.com
DESMARAIS LLP
101 California Street, Suite 3000
San Francisco, CA 94111
Telephone: (415) 573-1900
Facsimile: (415) 573-1901

John M. Desmarais (*pro hac vice*)
jdesmaraisllp@desmaraisllp.com
Tamir Packin (*pro hac vice*)
tpackin@desmaraisllp.com
Kyle Petrie (*pro hac vice*)
kpetrie@desmaraisllp.com
DESMARAIS LLP
230 Park Avenue
New York, NY 10169
Telephone: (212) 351-3400
Facsimile: (212) 351-3401

Counsel for Defendant Palo Alto Networks, Inc.

Phillip J. Haack
phaack@martonribera.com
Ryan J. Marton
ryan@martonribera.com
Hector J. Ribera
hector@martonribera.com
MARTON RIBERA SCHUMANN & CHANG LLP
548 Market Street, Suite 36117
San Francisco, CA 94104
Telephone: (415) 360-2517

Counsel for Defendant Cisco Systems, Inc.

/s/ David C. Dotson
Melissa R. Smith
State Bar No. 24001351
Email: melissa@gillamsmithlaw.com
GILLAM & SMITH, LLP
303 South Washington Avenue
Marshall, TX 75670
Telephone: (903) 934-8450
Facsimile: (903) 934-9257

Matthew C. Gaudet
mcgaudet@duanemorris.com
David C. Dotson
dcdotson@duanemorris.com
Alice E. Snedeker
aesnedeker@duanemorris.com
DUANE MORRIS LLP
1075 Peachtree NE, Suite 1700
Atlanta, GA 30309
Telephone: 404.253.6900
Facsimile: 404.253.6901

Counsel for Defendant Fortinet, Inc.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that all counsel of record for this action who are deemed to have consented to electronic service are being served with a copy of this document via email on August 5, 2024.

/s/ Kyle G. Petrie