IN THE UNITED STATES DISTRICT COURT FOR THE WESTERN DISTRICT OF TEXAS AUSTIN DIVISION

CROSSROADS SYSTEMS, INC.,	§	
Plaintiff,	§ §	
V	§ 8	C.A. NO. 1:13-CV-00800-SS
V.	§ §	JURY DEMANDED
DOT HILL SYSTEMS CORP.,	§ §	
Defendant.	§ §	
V.	§ 8	
ORACLE CORPORATION,	§ § §	C.A. NO. 1:13-CV-00895-SS
Defendant.	§	HIDY DEMANDED
Defendant.	§	JURY DEMANDED
v.		
HUAWEI TECHNOLOGIES CO., LTD.,	§ §	
HUAWEI ENTERPRISE USA, INC., and		
HUAWEI TECHNOLOGIES USA, Inc.,	§	C.A. NO. 1:13-CV-01025-SS
Defendants.	§ § §	JURY DEMANDED
Defendants.	8	JOKT DEMANDED
V.	§ e	
CISCO SYSTEMS, INC.,	§ 8	C.A. NO. 1:14-CV-00148-SS
,	§ §	
Defendant.	§	JURY DEMANDED
v.	<u> </u>	
NET AND DIG	§	G A NO 1 14 GV 00140 GG
NETAPP, INC.,	§ 8	C.A. NO. 1:14-CV-00149-SS
Defendant.	8 \$ \$	JURY DEMANDED
v.	§	
OLIANTIM CORRORATION	§	C A NO 114 CW 00150 CC
QUANTUM CORPORATION,	§ § §	C.A. NO. 1:14-CV-00150-SS
Defendant.	§	JURY DEMANDED



JOINT CLAIM CONSTRUCTION CHART OF DISPUTED TERMS FOR U.S. PATENTS NOS. 6,425,035, 7,051,147, 7,934,041 AND 7,987,311

Pursuant to the Court's April 25, 2014 Scheduling Order, Plaintiff Crossroads Systems, Inc. ("Crossroads") and Defendants Dot Hill Systems Corporation ("Dot Hill"), Oracle Corporation ("Oracle"), Huawei Technologies Co., Ltd., Huawei Enterprise USA, Inc., Huawei Technologies USA, Inc. (collectively, "Huawei"), Cisco Systems, Inc. ("Cisco"), NetApp, Inc. ("NetApp"), and Quantum Corporation ("Quantum") jointly submit the following claim construction chart identifying each disputed claim term and containing each party's construction of the disputed claim terms. Because of the commonality of claim terms between the four patents-in-suit, the parties are submitting one chart for the Court's convenience.

Term, Patent and Claim	Crossroads' Proposed	Defendants' Proposed
Nos.	Construction	Construction
Storage Router	Defined by the remainder of the claim and does not require further	A device that routes storage requests from initiator devices/workstations
'035 Patent: 1, 2, 3, 4, 5, 6, 7, 10	construction.	on one transport medium to target storage devices on the other transport
'041 Patent: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 24, 25, 26, 30, 32, 35, 37, 41, 42, 43, 47, 49, 52, 53		medium and routes data between the initiator devices/workstations and target storage devices.
'147 Patent: 1, 2, 3, 4, 5, 6, 9		
'311 Patent: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 20, 21, 24, 25, 28		
Allow(ing) Access Using NLLBP	Allow(ing) Access from [devices] [the workstations] to the storage devices using native low	Allow[ing] Access From [The Device/Devices/Workstations/Fibre Channel Initiator Devices] To The
'035 Patent:	level, block protocol	[Remote] Storage Device[s] Using
1, 7, 10, 11	Permit access using the native low	Native Low Level, Block Protocols
'041 Patent:	level, block protocol of the virtual	To allow native low level block
1, 20, 37	local storage without involving a	protocol requests to be routed from
, ,,,,,	translation from high level network	the [devices/Fibre Channel initiator
'147 Patent:	protocols to a native low level block	devices/workstations] to the remote
1, 6, 10, 28	protocol request.	storage devices.



Term, Patent and Claim	Crossroads' Proposed	Defendants' Proposed
Nos.	Construction	Construction
'311 Patent: {None}		
Map/Mapping '035 Patent: 1, 7, 10, 11 '041 Patent: 1, 2, 4, 5, 6, 9, 16, 20, 21, 23, 24, 25, 28, 35, 37, 38, 40, 41, 42, 45, 52 '147 Patent: 1, 6, 9, 10, 14, 15, 16, 17, 21, 22, 23, 24, 28, 29, 30, 31, 34, 35, 36 '311 Patent: 1, 4, 6, 12, 16, 19, 20, 22, 28	To create a path from a device on one side of the storage router to a device on the other side of the router. A "map" contains a representation of devices on each side of the storage router, so that when a device on one side of the storage router wants to communicate with a device on the other side of the storage router, the storage router can connect the devices.	To create a known path for block-addressed data and commands from a particular device on one side of the storage router to a particular remote physical storage device on the other side of the router. A "map" contains a representation of the particular devices on each side of the storage router, so that before a particular workstation/device on one side of the storage router tries to communicate with a particular remote physical storage device on the other side of the storage router, the storage router already has stored a path from the particular workstation/device to the particular remote physical storage device over which the storage router will route block-addressed requests and data between the devices.
Remote '035 Patent: 1, 11 '041 Patent: 1, 2, 3, 4, 7, 12, 13, 19, 20, 21, 22, 23, 26, 31, 32, 37, 38, 39, 40, 43, 48, 49, 53 '147 Patent: 1, 4, 10, 13, 14, 15, 17, 18, 21, 28, 34 '311 Patent: 1, 5, 9, 16, 19, 21, 25	Indirectly connected through at least one serial network transport medium.	Indirectly connected through a storage router to enable network connections from [devices/Fibre Channel initiator devices/workstations] to storage devices at a distance greater than allowed by a conventional parallel interconnect.



T D	C lin	
Term, Patent and Claim	Crossroads' Proposed	Defendants' Proposed
Nos.	Construction A processing device that controls	Construction A daying comprising at least: (1) a
Supervisor Unit '035 Patent: 1, 2, 10 '041 Patent:	A processing device that controls operation of the storage router, including handling mapping and access controls.	A device comprising at least: (1) a microprocessor, incorporating independent data and program memory spaces; and (2) associated logic required to implement a stand-
{None} '147 Patent: 1, 2, 9, 14, 15, 17, 19, 34, 35, 38		alone processing system and programmed to process data in a buffer in order to map between devices and which implements access controls.
'311 Patent: {None}		
Interface between	Does not require construction.	directly connect with/directly connect between
Interface with [a first transport medium] and		
Interface with [a second transport medium]		
'035 Patent: 1, 10		
'041 Patent:		
'147 Patent: 1, 9, 14, 21		
'311 Patent: {None}		
Access Controls	Access Controls	Access Controls
'035 Patent: 1, 7, 8, 10, 11	Controls which limit a [device/Fibre Channel initiator device/workstation]'s access to a	Controls which limit a [device/Fibre Channel initiator device/workstation]'s access to a
'041 Patent: {None}	specific subset of storage devices or sections of a single storage device according to a map.	specific subset of storage devices or sections of a single storage device according to a map for the
'147 Patent: 1, 6, 7, 9 10, 28, 34		[device/Fibre Channel initiator device/workstation].
'311 Patent: {None}		



Term, Patent and Claim	Crossroads' Proposed	Defendants' Proposed
Nos.	Construction	Construction
Implement(ing)(s) access controls for storage space on the (remote) storage devices '035 Patent: 1, 7, 10, 11 '041 Patent: {None} '147 Patent: 1, 6, 9, 10, 28 '311 Patent:	Implement(ing)(s) access controls for storage space on the (remote) storage devices Provides controls which limit a [device/Fibre Channel initiator device/workstation]'s access to a specific subset of storage devices or sections of a single storage device according to a map.	Implement(ing)(s) access controls for storage space on the (remote) storage devices Provide/providing controls that limit a [device/Fibre Channel initiator device/workstation]'s access to a specific subset of storage devices or sections of a single storage device according to a map for the [device/Fibre Channel initiator device/workstation].
{None} Control/controlling access from the devices to the storage space on the remote storage devices in accordance with the map '035 Patent: {None} '041 Patent: 1, 20, 37 '147 Patent: {None}	Control/controlling access from the devices to the storage space on the remote storage devices in accordance with the map Limit a device's access to a specific subset of storage devices or sections of a single storage device according to a map.	Control/controlling access from the devices to the storage space on the remote storage devices in accordance with the map Limit/limiting a device's access to a specific subset of storage devices or sections of a single storage device according to the map for the device
'311 Patent: 1, 16		
Control access from the [at least one] device to the [at least one] remote storage device using native low level, block	Control access from the [at least one] device to the [at least one] remote storage device using native low level, block protocols according to a map	Control access from the [at least one] device to the [at least one] remote storage device using native low level, block protocols according to a map
protocols according to a map '035 Patent: {None}	Limit a device's access to a specific subset of storage devices or sections of a single storage device according to a map using the native low level, block protocol of the virtual local	Limit a device's access to the storage space on the [at least one] remote storage device according to a map for the device by limiting the routing of native low level, block protocol
'041 Patent: {None}	storage without involving a translation from high level network	requests and data from the device to the [at least one] remote storage



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