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FILED

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

2011 AUG 10 PM 12: 15

CLERK US DISTRICT COURT WESTERN DISTRICT OF TEXAS

CROSSROAD SYSTEMS, INC.

Case No. 1:10-CV-6524SS

Plaintiff,

v.

3PAR, INC., AMERICAN MEGATRENDS, INC., RORKE DATA, INC., D-LINK SYSTEMS, INC., CHELSIO COMMUNICATIONS, INC. (a Delaware corporation). ISTOR NETWORKS, INC., and CHELSIO COMMUNICATIONS, INC. (a California corporation)

Defendants.

REPORT AND RECOMMENDATIONS OF THE SPECIAL MASTER REGARDING UNITED STATES PATENT NO.'S 7,051,147 & 6,425,035 B2

Attached hereto is the Special Master's Report and Recommendations to United States District Judge Sam Sparks regarding the construction of claims in United States Patent No.'s 7,051,147 & 6,425,035 B2.

The parties may file written objections to the recommendations made in this report within ten (10) days from the date of their receipt of it, as discussed at the conclusion of the *Markman* hearing.

SIGNED this the 9^{th} day of August, 2011.

Karl Baver

Special Master

CROSSROADS EXHIBIT 2008 Oracle Corp. et al v Crossroads Systems, Inc IPR2014-01207

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CERTIFICATE OF SERVICE

I hereby certify that on the 9th day of August, 2011, I electronically filed the foregoing with the Clerk of Court using the CM/ECF system which will send notification of such filing to counsel of record in this action.

/s/ Karl Bayer _____ Karl Bayer

SPECIAL MASTER'S RECOMMENDED CONSTRUCTIONS PATENT NO. 6,425,035 B2

Term	Special Master's Recommended Construction
Device	No Construction Necessary.
	No construction recessary.
Implement access controls for storage space on the storage devices.	"Provides controls which limit a device's access to a specific subset of storage devices or sections of a single storage device according to a map."
Allow access from devicesto the storage devices using native low level, block protocol.	"Permit or deny access using the NLLBP of the Virtual Local Storage without involving a translation from high level network protocols or file system protocols to a native low level block protocol request."
Native low level block protocol (NLLBP)	"A set of rules or standards that enable computers to exchange information and do not involve the overhead of high level protocols and file systems typically required by network servers."
Workstation	"A computer having input/output devices intended for use by humans."
Access control(s)	"Controls which limit a device's access to a specific subset of storage devices or sections of a single storage device according to a map."

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		United States Pater	nt No. 6,425,035 B2		
laim 1:	The second s				
storage router for roviding virtual local	Device:	Device:	Device:	Intrinsic Evidence	No Construction Necessary.
orage on remote	"Computing device that	Intrinsic:	Computer.	1:37-39 ² , 47-49, 57-60	
orage devices to	issues storage access		-		
evices, comprising:	requests."	Claim 1, ¹ Col. 9, 11. 27-		4:29-33 ("Storage router	
		30 ("devices" refers to		56 combines access	
		the devices that make		control with routing	
		requests and are allowed	·	such that each	
		access to storage		workstation 58 has	
		devices).		controlled access to only	
				the specified partition of	
		Col. 1, 11. 36-37; Col. 2,		storage device 62 which	
		11. 4-5; Col. 4, 11. 55-56;		forms virtual local	
		Col. 8, 11. 65-68 (the		storage for the	
		specification describes		workstation 58.")	· · ·
		the devices that make			
		requests to access the		4:39-40	
		storage devices as			
		"computing devices").		4:58-59 ("no access	
				from a workstation 58 is	
		Col. 1, 11. 57-60 ("from		allowed to the virtual	
		the perspective of a		local storage of another	
		workstation, or other		workstation."	
		computing device,			
		seeking to access such		Cf. Fig. 2 and Fig. 3	
		server data, the access is			
		much slower than access			
		to data on a local	[First Reexam Reply ³ at	
		storage device ").		8-9, 15	

¹ United States Patent No. 6,425,035 ("the '035 Patent") and United States Patent No. 7,051,147 ("the '147 Patent") share a common specification. To facilitate cross-referencing, unless noted otherwise, all Col:Line cites in the charts of proposed claim constructions are to the '035 Patent.

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² As in the claim construction briefs previously submitted to the Court, all specification citations are to the '035 patent unless otherwise noted.

³ For the sake of clarity, commonly cited documents are referenced in the "Defendants' Evidence" column by the abbreviated names used in prior briefing. A table of these abbreviations was included in Defendant's Reply Post-Hearing Brief and is also appended to this table.

·		cial Master's Proposed Co	onstruction of Disputed T	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Claim 3, Col. 9, 11. 37-			
		39 (principles of claim		Second Reexam Reply	
		differentiation require		at 7, 8, 8-15 passim, 16,	
	· · ·	"devices," as a group,		17, 22, 23, 28, 39-40	
		must necessarily be		,,,,	
		broader than		Second Reexam Reply	
		"workstations").		at 7 ("The invention of	
		, , , , , , , , , , , , , , , , , , , ,		the '035 patent further	
		Col. 6, 11. 31-41, 46-56		provides the security	
		(the specification		feature of providing	
		describes "servers" as a		access controls in order	
		type of computing		to control which storage	
		device that can make		devices (or portions	
		storage access requests).		thereof) any particular	
	·			host computer can	
		Abstract, Col. 1, 11. 21-		access.")	
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.		Second Reexam Reply	
		3-6, 41-43; Col. 4, II.		at 8 ("Thus, the present	
		38-42, 11. 55-56 Col. 6,		inventionallows the	
		11. 45-55; Col. 8, 11. 65-		host computers to access	
		68 ("devices" is used		the remote storage	
		broadly to refer to		devices over the	
		various computing	-	network")	
		devices such as			
		workstations,		Second Reexam Reply	
		input/output devices,	· · · · · · · · · · · · · · · · · · ·	at 15 ("In summary, the	
		"initiator" and "target"		invention of the '035	
· · · ·		devices).		Patent provides a	
				networked storage	
		April 6, 2005 Reply to		solution that combines	
		Office Action at 8, 10,		the ability to allow	
		12, 22, Fore Decl. ISO		access from host	
		Crossroads' Post-Hr'g		computers to remote	
		Cl. Const., Ex. E; July		storage devices using	
		22, 2005 Reply to		NLLBPs with the ability	
		Office Action at 7-15,		to control access	
		Office Action at 7-15,		to control access	<u> </u>

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		21-23, 27-29, 32, 33,		between host computers	
		35-37, 39, Fore Decl.		and the remote storage	
		ISO Crossroads' Post-		devices" Second	
		Hr'g Cl. Const. Br., Ex.		Reexam Reply at 16	
		F ("Device" is used over		("The present invention	
		ninety times in the		as recited in Claim 1	
		reexamination		thus enables computers	
		prosecution history to		to access remote storage	
		refer to types of devices		devices")	
		capable of making			
		requests for storage).		Second Reexam Reply	
				at 35	
		Extrinsic:		(Spring "does not teach	
				access controls as	
		April 28, 2011 2d Supp.		defined by the '035	
		Decl. of John Levy,		Patent"; "in contrast to	
		Ph.D., ¶ 4 (one of		the invention of the '035	
		ordinary skill would		Patent, this [access	
		understand that in the		control] methodology	
		embodiments at Col. 6,		described in Spring does	
		11. 33-41; 46-56, it is the		not limit access of	
		server that sends		particular workstations	
		requests for storage	and the second	to specific assigned	
		access to the storage		subsets of storage	
		router using NLLBP).		devices or portions	
				thereof.")	
		The McGraw-Hill			
		Illustrated Dictionary of		Extrinsic Evidence	
		Personal Computers 126			
		(4 th ed. 1995), Fore		Jt. Ex. 109, Crossroads	
		Decl. ISO Crossroads'		v. Chaparral, Joint	
		Cl. Const. Br., Ex. W		Claim Construction	
		(defining device as "a		Order at 3 Crossroads'	
		mechanical, electrical or		argument that	
		electromechanical		"implements access	
		contrivance or		controls" should be	
		appliance. Commonly		construed as "provides	

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Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		used in reference to		controls which limit a	<u> </u>
		peripherals such as		computer's access")	
		printers, CRTS and disk		computer success y	
		drives").		Def. Ex. 19, Rudolf	
				Graf, Modern	
		Hr'g Tr. at 202:24-		Dictionary of	
		203:3, 205:4-7, Mar. 8,		<i>Electronics</i> (1999) at	
		2011 (Defendants'		353	
		counsel agreeing that		333	
		the defining		Def Ex 20 Minuted	
				Def. Ex. 20, Microsoft	
		characteristic of a		Computer Dictionary	
	· · · · ·	device is that it is the		(5th ed. 2002) at 256	
	· · · ·	thing that issues storage			
		requests).		Berg Decl. ¶ 59-63.	
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			

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Special Master's Proposed Construction of Disputed Terms Actual Claims Crossroads' Proposed Crossroads' Crossroads' Defendants' Proposed Defendants' Special Ma						
Language	Crossroads' Proposed Construction	Evidence	Construction	Evidence	Special Master's Construction	
		to computers				
	· · · · · · · · ·	functioning as			· · ·	
		workstations on the				
		network").				
		Special Master's Report				
		at 22, Dot Hill				
		Litigation, Pl.'s Cl.				
		Const. Hr'g Ex. P-15				
		(Court previously				
		construed "storage				
		router" as "a data				
		transmitting device that			·	
		allows users to integrate				
	· · · ·	different servers or				
		workstations into a				
		storage network").				
a buffer providing	Implement access	Implement access	Access controls:	Intrinsic Evidence	"Provides controls	
memory work space	controls for storage	controls for storage			which limit a device's	
for the storage router;	space on the storage	space on the storage	Controls that use a map	3:30-32, 56-59 ("FIG.	access to a specific	
a first controller	devices:	devices:	to permit a particular	2, indicated generally	subset of storage	
operable to connect to			device to read data from	at 30, with a storage	devices or sections of	
and interface with a	"Provides controls	Intrinsic:	or write data to a	router that provides	single storage device	
first transport medium;	which limit a device's		particular storage space	global access and	according to a map."	
a second controller	access to a specific	Fig. 3, Col. 3, Il. 7-59,	assigned to the device,	routing		
operable to connect to	subset of storage	Col. 4, 11. 7-27, 33-35,	and to prevent the	Storage router 44 uses		
and interface with a	devices or sections of a	40-43, 48-50, 50-53	device from reading	tables to map devices		
second transport	single storage device	(Fig. 3 shows	data to or writing data	from one medium to the		
medium;	according to a map."	embodiment in which	from storage space	other and distributes		
and a supervisor unit		all workstations can	assigned to other	requests and data across		
coupled to the first		access global storage	devices.	Fiber Channel 32 and		
controller, the second		device).		SCSI bus 34 without		
controller and the				any security access		
buffer, the supervisor		Col. 4, ll. 7-11 ("access		controls.")		
unit operable to map		controls" applies to				
between devices		shared storage).		4:17-24, 26-27 ("As		
connected to the first			1	shown in FIG. 3, for	1	

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Special Master's Proposed Construction of Disputed Terms							
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction		
transport medium and		July 22, 2005 Reply to		example, storage device			
the storage devices, to		Office Action at 13-14,		50 can be configured to			
implement access		Fore Decl. ISO		provide global data 65			
controls for storage	· · · · · · · · · · · · · · · · · · ·	Crossroads' Post-Hr'g		which can be accessed			
space on the storage		Cl. Const. Br., Ex. F		by all workstation 58.			
devices and to process		(discussion during		Storage device 62 can			
data in the buffer to	· · · ·	reexamination, that the		be configured to provide			
interface between the		"access controls" feature	·	partitioned subsets 66,			
first controller and the		includes the concept of		68, 70 and 72, where			
second controller to		allowing multiple		each partition is			
allow access from		devices to have access		allocated to one of the			
devices connected to		to shared storage).		workstations 58			
the first transport		to shured storage).		(workstations A, B, C			
medium to the storage		Extrinsic:		and D). These subsets			
devices using native		Extrast.		66, 68, 70 and 72 can			
low level, block	-	Chaparral Markman		only be accessed by the			
protocols.		Order at 3-7, 15, Fore		associated workstation			
protocols.	· · ·	Decl. ISO Crossroads'		58 and appear to the			
			· · · · · · · · · · · · · · · · · · ·	associated workstation			
		Cl. Const. Br., Ex. L (Crossroads'	· ·				
				58Similarly, storage			
		construction parallels		device 64 can be			
		historic construction;		allocated as storage for			
		the invention		the remaining			
		contemplates using		workstation 58			
		access controls for an		(workstation E)."			
	· · ·	entire storage device as					
		well as shared storage;		Fig. 3			
		Court has rejected a					
		construction in which a					
		particular subset of		First Reexam Reply at			
		storage could only be		13 ("[T] the access			
		accessed by a single		controls provide the			
		workstation).		capability to permit or			
				deny each computer			
		Comments on Statement		access to a particular			
		of Reasons for		storage device, a set of			
		Patentability and/or		storage devices or			

Actual Lang	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master' Construction
		Confirmation, Fore		portions of a single	
		Decl. ISO Pl.'s Cl.		storage device or	
		Const. Br., Ex. I		devices (or any	
		(patentees expressly		combination thereof).	
		disagreed with any		By assigning storage	
		characterization of the		devices or portions	
		claims that were		thereof to particular	
		"inconsistent with the		computer workstations,	
		claim language,		the present invention	
		specification or prior		prevents each computer	
		prosecution history.").		workstation from	
		prosocution instory. J.		overwriting or	
		Sec. Sec.		modifying data in	
				storage assigned to	
				another computer	
		a state of the second second		workstation.")	
				workstation.)	
				First Reexam Reply at	
		and the second sec		33 ("The access controls	
				of claim 1 thus permit or	
				deny access from	
				particular host devices	
				connected to the first	
				data transport medium	
				to particular storage	
				devices (or subsets	
				thereof) according to a	
	-			map that associates the	
				host devices with the	
				remote storage	
				devices")	
				Second Reexam Reply	
				at 13 ("By assigning	
				storage devices or	
				portions thereof to	
	 			· · · · · · · · · · · · · · · · · · ·	
			7		

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ctual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
				particular computer	
				workstations, the	
				present invention	
				prevents each computer	
				workstations [sic] from	
				overwriting or modifying data in	
				storage assigned to	
				another workstation").	
				another workstation).	
				Second Reexam Reply	
				at 33	
				("To implement access	
				controls requires more	
				than simply allowing a	
				host to have access to a	
				storage device.	
				Implementing access	
				controls is a security	
				measure designed to	
				prevent unauthorized access from	
	~			workstations to	
				particular storage	
				devices or subsets of	
				storage as claimed and	
				described in the '035	
				Patent.")	
				Second Reexam Reply	
				at 33	
				("The access controls of	
				the '035 Patent depend	
				on the map discussed	
				above to control accessIn other words,	
				the storage to which	
			8		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
				each workstation is	
				permitted access is	
				controlled through the	
				use of the mapThe	
				access controlsthus	
				permit or deny access	
				from particular host	
				devices connected to the	
				first data transport	
				medium to particular	
				storage devices (or	
				subsets thereof) according to a map that	
				associates the host	
				devices with the remote	
				storage devices.")	
				storage devices.)	
				Def. Ex. 8, NIIRC ("the	
				map/mapping	
				featureis a one-to-one	
				correspondencewhere	
				by the router forms the	
				connection between two	
				separate entities over	
			· · · · · ·	different transport	
	-			mediums.")	
		n an an an Arran an Arran an Arran an Arr	1		
		Association of the second sec second second sec			
				U.S. Pat '036	
				patent Reply to Office	
				Action at 15	
				U.S. Pat. 6,421,753	
				Patent Reply to Office	
				Action at 12	
				U.S. Dat 6 729 954	
	1	l	1	U.S. Pat. 6,738,854	

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	Spe	cial Master's Proposed Co	onstruction of Disputed To	erms	-
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
and a supervisor unit	Allow against from	Allow coords from		patent Reply to Office Action at 19 U.S. Pat.5,942,972 Reply to Office Action at 13.	"Domoit on domy occord
and a supervisor unit coupled to the first controller, the second controller and the buffer, the supervisor unit operable to map between devices connected to the first transport medium and the storage devices, to implement access controls for storage space on the storage devices and to process data in the buffer to interface between the first controller and the second controller to allow access from devices connected to the first transport medium to the storage devices using native low level, block protocols .	Allow access from devicesto the storage devices using native low level block protocols: "Permit or deny reading or writing of data using the NLLBP of the Virtual Local Storage without involving a translation from a high level file system command to a native low level, block protocol request."	Allow access from devices to the storage devices using native low level block protocols: Intrinsic: Fig. 1, Col. 1, ll. 49-54; Col. 3, ll. 17-23 (the "storage router" of the invention is contrasted with a "network server" that allowed access to storage devices by translating high level file system commands of the "network protocol" into low level requests (i.e., NLLBP) and sending the NLLBP to the physical storage devices). Claim 1, Col. 9, ll. 13- 30 (storage router "allow[s] access from devices connected to the first transport medium to the storage devices using native low level,	Allow accessto the storage devices using native low level, block protocols: Permit reading and writing of data in the native low level, block protocol of the storage device, without involving network servers, Ethernet networks, higher-level protocols such as TCP/IP, Ethernet protocols, network protocols or file system protocols, or translation from one protocol to another.	IN GENERAL – Intrinsic Evidence 1:43-46 First Reexam Reply at 8 ("features of the present inventionalso allow a host (or hosts) to communicate with storage devices using only native low level block protocols.") (emphasis added) First Reexam Reply at 10 (system in which "at least one high level to low level translation takes place between the workstation and the storage device" reflects prior art, not the alleged invention) First Reexam Reply at 19 ("Petal, on the other hand, teaches a system in which a Petal client issues high level	"Permit or deny access using the NLLBP of the Virtual Local Storage without involving a translation from high level network protocols or file system protocols to a native low level block protocol request."

	Spe	cial Master's Proposed Co	onstruction of Disputed To	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		block protocols"		commandsConseque	
		(emphasis added); the		ntly, the Petal server	
		storage router,		does not allow the Petal	· .
		specifically, the		clients to access the	
		supervisor unit within		storage devices using an	
		the storage router,		NLLBP"),	
		"uses" the NLLBP to			
		permit or enable access).		First Reexam Reply at	
				23	
		Col. 4, 11. 7-47			
		(invention of patents-in-			
		suit provides "virtual		Second Reexam Reply	
		local storage" that		at 16 ("Spring and	
		appears to a workstation		Oeda, in contrast to the	
		as local storage, and		invention of the '035	
		appears to have the		Patentrequire the use	
		same characteristics of		of higher level network	
		local storage).		protocols (and therefore	
				cannot allow access to	
		Col. 4, 11. 44-57 ("virtual		the remote storage	
		local storage" is		devices using NLLBPs).	
		"provided" by the		Thus, these references	
		storage router in a		suffer the shortcomings	
		manner that is		of exactly the type of	
		transparent to the		prior art the present	
		devices requesting		invention was designed	
		storage access).		to overcome.")	
		storage access).		to overcome.	
		Col. 5, 11. 11-17, 11. 24-			
		27 (supervisor unit		IN GENERAL -	
		within the storage router		Extrinsic Evidence	
		processes NLLBP		Extransic Evidence	
		requests from the		Berg. Decl. ¶¶ 14-29,	
		devices to access		36-58	
				30-36	
		permitted storage).		Learne Deal @ 26 (Sub-	
				Levy Decl. ¶ 36 ("the	
		Abstract; Col. 2, 11. 12-		invention of the Patents-	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		15, 17-20, 24-27; Col. 3,		in-Suit enables the	
		11. 59-63; Col. 3, 11. 51-		workstation to send an	
		53; Col. 4, 11. 2-6; Col.		NLLBP to the storage	
		5, 11. 1-5; Col. 9, 11. 28-		router in order to make a	
		31; Col. 10, ll. 9-11		request for data.")	
		(specification discloses		I	
		that NLLBPs are used		WITHOUT	
		by, and at, the storage		INVOLVING	
	· .	router to allow access).		NETWORK	
				SERVERS -	
		Col. 6, 11. 33-41, 46-56		Intrinsic Evidence	
		(specification describes		Intrinsic Evidence	
		two embodiments		1:47-60, 2:51-52, 2:67-	
		wherein "devices"	· · · · ·	3:9, 3:16-25 (describing	
		making the storage		problems of network	
		access request are		server-based systems)	
		1 · · · · ·		server-based systems)	
		servers).		1 50 54 (44	
		0.1.1.11.57.00 (%6		1:50-54 ("Access to data	
	-	Col. 1, 11. 57-60 ("from		through the network	
		the perspective of a		server is through a	
		workstation, or other		network protocol that	
		computing device,		the server must translate	
		seeking to access such		into low level requests	
		server data, the access is		to the storage device")	
		much slower than access			
		to data on a local		3:32-34 ("significantly	
		storage device ").		different from FIG. 1 in	
				that there is no network	
		Claim 3, Col. 9, 11. 37-		server involved")	
		39 (principles of claim			
		differentiation require		5:1-5 (access is	
		"devices," as a group,		"accomplished without	
		must necessarily be		limiting the	
	-	broader than		performance of	
		"workstations").		workstations 58 because	
				storage access involves	
		Col. 3, ll. 17-23 (the		native low level, block	
				I	· · · · · · · · · · · · · · · · · · ·

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
<u> </u>		"network protocol" used		protocols and does not	
		by the prior art		involve the overhead of	
		"network servers" to		high level protocols and	
	· · ·	allow access to storage		file systems required by	
		devices is a protocol		network servers.")	
		that includes a high			
		level file system			
		command that must be		First Reexam Reply at	
		translated into low level		8-9 (distinguishing Petal	
		storage requests).		on basis that	
		storage requests).		workstation must create	
		April 6, 2005 Reply to		network protocols to	
		Office Action at 10-11,		communicate with	
		Fore Decl. ISO		network server)	
		Crossroads' Post-Hr'g		network server)	
		Cl. Const. Br., Ex. E;		First Reexam Reply at	
		July 22, 2005 Reply to		9-10 (noting that use of	
		Office Action at 24-27,		a network server	
		Fore Decl. ISO		necessarily involves	
		Crossroads' Post-Hr'g		translation to higher	
		Cl. Const. Br., Ex. F		level protocols)	
		(Crossroads		level protocols)	
				Einst Dooyong Donly of	
		distinguished Petal,		First Reexam Reply at	
		Spring and Oeda as		11 ("the Petal system	
		having a server that		does not allow the client	
		provided controlled		(i.e. workstation) to	
		access to storage was		access the storage	
		required to translate		devices using an	
		high level file system		NLLBP[W]hile the	
		commands into low		Examiner has pointed	
		level commands in order		out various portions of	
		to send the NLLBP to		Petal that discuss using	
		the storage devices).		block level (i.e. low	
				level) storage protocols,	
		April 6, 2005 Reply to		it is only in the context	
	4	Office Action at 8-11,		of the time period after	
		19, 22-23, Fore Decl.		high level RPCs have	

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Actual Claims	Spe Crossroads' Proposed	cial Master's Proposed Co Crossroads'	nstruction of Disputed To Defendants' Proposed	erms Defendants'	Special Master's		
Language	Construction	Evidence	Construction	Evidence	Construction		
		ISO Crossroads' Post-		been transformed to low			
		Hr'g Cl. Const. Br., Ex.		level SCSI commands.			
		E; July 22, 2005 Reply		The system of Petal is			
		to Office Action at 11-		the type of system that			
		17, 21-28, Fore Decl.		the present invention			
		ISO Crossroads' Post-		was designed to			
	· · · ·	Hr'g Cl. Const. Br., Ex.		overcome")			
		F (showing that					
		Crossroads did not make					
		a sweeping disclaimer		Second Reexam Reply			
		of any use of a "network		at 10, 12, 13, 22			
		server"; Crossroads					
		distinguished its		Second Reexam Reply			
		invention from Oeda,		at 9-10 ("A problem			
		Petal and Spring based		with this prior art			
		on the requirement that		solution was that the			
		the "network server"		network server creates a			
		that provided controlled		bottleneck which slows			
		access to storage was		down remote access			
		required to translate the		because, at least in part,			
		high level file system		the computer or			
		command into low level		workstation needs to			
		commands in order to		create something called			
		send the NLLBP to the		a 'network protocol' to			
		storage device, not the		send the data over the			
		use of Ethernet		distance-capable			
		networks, Ethernet or		transport medium.			
		TCP/IP).		Thus, the introduction			
		,-		of a network server into			
		Col. 2, Il. 17-20; Col. 5,		the system creates a			
		11. 19-22, 50-57, 60-63;		bottleneck which slows			
		Col. 6, Il. 32-37; '147		down access to remote			
		Patent, Claim 1, Col. 9,		storage devices.")			
		1. 28-32 (disclosing and		(citing '035 patent at			
		claiming embodiments		1:47-54)			
		using Fibre Channel; the					
		inclusion of "without		Second Reexam Reply			

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	Spe	cial Master's Proposed Co	onstruction of Disputed Te	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		involving network		at 11 ("It takes the	
		protocols" according to		computer time to create	
		Defendants' expert		a network protocol")	
		would prohibit the use			
		of Fibre Channel despite		Second Reexam Reply	
		the fact that these are		at 13 (the invention	
		express embodiments).		"does away with the	
		express embodiments).		time consuming and	
		Col. 5, Il. 53-56 (Fibre		complex steps of	
		Col. 5, II. 55-50 (Fible Channel is a protocol		creating and processing	
		used for			
				higher-level network	
		communications over		protocols at a server.")	
		"Fibre Channel based		(emphasis added)	
		networks").			
				Second Reexam Reply	
		Extrinsic:		at 13 ("The present	
				invention thus routes	
		March 7, 2011 Supp.		NLLBPs to the remote	
		Decl. of John Levy,		storage devices without	
		Ph.D., ¶¶ 9-13 (data		involving a network	
		transfer in networks best		server.")	
		understood as having			
		layers; when TCP/IP		Second Reexam Reply	
		and Ethernet protocols		at 10-13 (Graphics 2-4).	
		were used by prior art		Second Reexam Reply	
		systems to transport		at 22 (workstation must	
1		high level network file		create network protocols	
		system requests, a		to communicate with	
		network server would		network server)	
		translate such requests		network server)	
		· · ·		Constant Down	
		into low level requests		Second Reexam Reply	
		to access storage); ¶¶6-7		at 22 ("This ability to	
		(prior art "server"		allow access from host	
		described in patents-in-		computers to storage	
		suit was specifically a		devices using a NLLBP,	
		device that allowed		as recited in Claim 1,	
		access between the		requires allowing access	

·	Spe	cial Master's Proposed Co	onstruction of Disputed T	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		device requesting		between the host and	
	· · · ·	"access to data" and the		storage device(s) using a	
		storage devices using		protocol (i.e., a set of	
		something called a		rules) that does not	
		"network protocol";		involve the overhead of	
		such "servers"		high level protocols and	
		implemented file		file systems typically	
		systems and received		required by network	
		high level file system		servers.")	
		protocols from devices			
		requesting data access).		Second Reexam Reply	
		1 5		at 22 ("As discussed	
		April 28, 2011 2d Supp.		above, in systems prior	
		Decl. of John Levy,		to the present invention,	
		Ph.D., ¶4 (person of		when making a request	
		ordinary skill would		to storage through a	
		understand that the		network server, a	
		specification discloses a		workstation first had to	
		server that sends		translate the requests	
		requests for storage		from its file system	
		access to a storage		protocols to higher level	
		router using NLLBP).		network protocols in	
				order to communicate	
		May 11, 2011 3d Supp.		with the network server,	
		Decl. of John Levy,		and the network server	
		Ph.D., ¶3 (a "network		would then translate	
		server" is a server that		them into low level	
		can request access to		requests to the storage	
		storage).		device(s)")	
		storage).			
		Microsoft Computer		Second Reexam Reply	
		Dictionary 430 (3d Ed.		at 23 ("Using the	
		1997), May 11, 2011 3d		example of a first	
		Supp. Decl. of John		transport medium of	
		Levy, Ph.D., Ex. A		Fibre Channel ("FC")	
		(defining "server" as		and a second transport	
		"(1) on a local area		medium of SCSI, a FC	
	<u> </u>		L	medium of SUSI, a FU	······

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Special Master's Proposed Construction of Disputed Terms								
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction			
		Evidence network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network"). Special Master's Report at 22, <i>Dot Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data		Evidence workstation can communicate SCSI commands to a storage device using the FC protocol through the storage router.") '147 Reply at 13 (noting that use of a network server necessarily involves translation to higher level protocols); '147 Reply at 13 ("Thus the Specification points that a native low level block protocol is one that does not involve the				
		transmitting device that allows users to integrate different servers or workstations into a storage network"). Hr'g Tr. 76:4-10, 82:20- 23, March 8, 2011 (in hypothetical network of Graphic 2 of Defendants' Markman Demonstratives (Fore Decl. ISO PI's Post- Hr'g Cl. Const. Br., Ex. J) the workstation sends high level file systems commands to network		overhead of high level protocols used by network servers"). WITHOUT INVOLVING NETWORK SERVERS – <u>Extrinsic</u> Evidence Horst Decl. ¶ 16. Horst Decl. ¶ 16-18. Second Reexam Reply at 9-10 ("In typical prior art systemsto overcome the inability				

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Special Master's Proposed Construction of Disputed Terms						
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction	
		server); Id. at 200:2-5,		of a SCSI-to-SCSI		
		201:22-24, 202:24-		system to provide		
		203:3 (Defendants		remote		
		expressly stated that a		storageworkstations		
		"device" is a "computer"		were connected to a		
		that is both "reading or		network server using a		
		writing data from a		distance capable		
		storage device" and		network transport		
		sending NLLBPs and		medium and a network		
		the only "device" that		protocol such as		
		does so in Graphic 2,		Ethernet.")		
		shown in Crossroads'				
		Post-Hearing Brief is		Horst Decl. ¶ 15		
		the "network server").		("Before Crossroads'		
				invention of the '035		
		Crossroads' Concise		Patents, a network		
		Statement of		server (also known as a		
		Infringement, Dot Hill		network file server) was		
		Litigation (Case No. A-		the way networked		
		03-CV-754 SS), Fore		computers connected to		
		Decl. ISO Pl.'s Post-		remote storage")		
		Hr'g Cl. Const. Br., Ex.				
		H; April 28, 2011 2d		Horst Decl. ¶¶ 16-17		
		Supp. Decl. of John		("A network file server		
		Levy, Ph.D., ¶5		creates a bottleneck that		
		(accused devices in Dot		slows down remote		
		Hill litigation were		access. This is because		
		designed to be used in		the "computer or		
		hypothetical system		network server needs to		
		shown in Graphic 2 of	· · · · ·	use a high level		
		Defendants' Markman		'network protocol'		
		Demonstratives (Fore		request to communicate		
		Decl. ISO Pl's Post-		with the network server.		
		Hr'g Cl. Const. Br., Ex.		This introduces delay		
		J)).		into the storage access		
				process")		
		Hr'g Tr. at 81:12-15,	L		· · · · · · · · · · · · · · · · · · ·	
			18			

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		March 8, 2011 (all		Horst Decl. ¶ 18.	
		parties agree that the			
		Petal, Spring and Oeda		Levy Decl. ¶ 28-30	
		references disclose			
		systems with a "server"		Levy Decl. ¶ 29 ("The	
		interposed between		use of a network file	
		workstations and		server introduces a	
		storage devices); Id. at		bottleneck because the	
		88:2-89:16; 93:4-7;		workstation takes time	
		100:16-24 (Defendants		to translate its file	
		agree that the		system protocols to	
		"translation"		network protocols and	
		distinguished by		the network server takes	
		patentees during		time to process the	
		reexamination was from		network protocol in	
		high level file system		order to issue the	
		commands into NLLBP		appropriate native low	
		requests); Id. at 89:11-		level block commands	
		16 (parties agree that		to the storage device to	
		"allowing access	and the second	satisfy the request	
		using NLLBP" occurs		received from the	
		without a translation		workstation.")	
		from a high level file	and the second		
		system command to a		Levy Decl. ¶ 29-30 (in	
		NLLBP request); Id. at		order to read and write	
		91:14-16, 92:1-5, 152:4-		data through a file	
		7 (Defendants concede		server, tworkstation	
		that the "network		must issue multiple	
		protocols" described in		commands (create,	
		the Oeda, Petal and		open, read or write, and	
		Spring references		close) which the server	
		included file system		must execute)	
		commands thus,			
		including "without		Levy Decl. ¶ 30 ("The	
		involving network		various steps to create,	
		protocols" is		open, read, write and	
		superfluous to "without		close files can be	
	•		19		· · · · · · · · · · · · · · · · · · ·

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		involving a translation		particularly time	
	· · · · · · · · · · · · · · · · · · ·	from a high level file		consuming.")	
		system command to a		and the state of the	
		native low level block		Levy Decl. ¶ 33	
		protocol request.")			
				Pl. Br. 13-14 ("The '035	
		April 28, 2011 2d Supp.		Patent introduces and	
		Decl. of John Levy,		defines the term NLLBP	
		Ph.D., ¶7 (CIFS, NFS		from the perspective of	
		and FTP are network		a workstation accessing	
		protocols).		local storage;	
				specifically, an NLLBP	
		March 7, 2011 Decl. of		is what is used by a	
		Brian Berg, ¶37		workstation to access	
		(Defendants' expert uses		local storage.")	
		term "network protocol"			
		broadly such that it		Pl. Br. 14 ("Therefore,	
		would include Fibre		just as the workstation	
		Channel).		sends an NLLBP	
				request to access its	
		April 28, 2011 2d Supp.		local storage, using a	
		Decl. of John Levy,		storage router in the	
		Ph.D., ¶3 (a workstation		present invention, the	
		gets "access to the local		workstation will	
		storage device through		similarly send an	
		native low level block		NLLBP request to the	
		protocols").		storage router.")	
		Unio Tr. at 120.7 12		Hrg. Tr. 244:5-14	
		Hr'g Tr. at 129:7-13,			
		March 8, 2011		("Well, sure. It has the	
		(Defendants agreed to		same problem at the	
		remove "without		workstation")	
		involving Ethernet		Here The 225-5 0	
		networks, Ethernet		Hrg. Tr. 225:5-9.	
		protocols, TCP/IP" from			
		their proposed			
		construction).March 7,	· · · · · · · · · · · · · · · · · · ·	WITHOUT	
			20		
			20		

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
	-	2011 Supp. Decl. of		INVOLVING	
		John Levy, Ph.D., ¶13		NETWORK	
		(Ethernet and TCP/IP		PROTOCOLS	
		protocols are concerned			
		only with delivery of		Intrinsic Evidence	
		messages).			
				Second Reexam Reply	
		February 22, 2011 Decl.		at 9-10 ("In typical prior	
		of John Levy, Ph.D.,		art systemsto	
		¶36 (NLLBP "used" by		overcome the inability	
		the storage router to		of a SCSI-to-SCSI	
		allow access is the		system to provide	
		NLLBP sent to it from		remote	
		the device; this NLLBP		storageworkstations	
		is the NLLBP		were connected to a	
		appropriate for the		network server using a	
		virtual local storage, not		distance capable	
		the NLLBP of the		network transport	
		storage device storing		medium and a network	
		the data).		protocol such as	
		the data).		Ethernet. A problem	,
		Dictionary of Computer		with this prior art	
		and Internet Terms 311		solution was that the	
		$(6^{th} \text{ Ed. 1996}), \text{ Fore}$		network server creates a	
		Decl. ISO Pl.'s Cl.			
				bottleneck which slows	
		Const. Br., Ex. S		down remote access	
		(defining "native" as "1.		because, at least in part,	
		designed for a specific	· · · · · · · · · · · · · · · · · · ·	the computer or	
		hardware or software		workstation needs to	
		environment (rather than		create something called	
		for compatibility with		a 'network protocol' to	
		something else)").		send the data over the	
				distance-capable	
		Stip. Defs. of Cl. Terms,	$\frac{1}{2} \left(\frac{1}{2} - \frac{1}{2} \right) = \frac{1}{2} \left(\frac{1}{2} - \frac{1}{2} \right) \left(\frac{1}{2}$	transport medium.")	
		Fore Decl. ISO Pl.'s		(citing 1:47-54)	
		Post-Hr'g Cl. Const. Br.,		(emphasis added)	
		Ex. I (parties agree that			
			a 1		
			21		

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	Spe	cial Master's Proposed Co	onstruction of Disputed Te	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		"virtual local storage" is		Second Reexam Reply	
		"storage space, in a		at 24 ("one of ordinary	
		storage device that is		skill in the art would	
		remotely connected to		have understood that	
		an initiator device to be		access to remote storage	
		within or locally		via Ethernet required the	
		connected to the		use of a higher level	
		initiator device").		network protocol.")	
		April 28, 2011 2d Supp.		Second Reexam Reply	
		Decl. of John Levy,		at 24 ("Ethernet	
		Ph.D., ¶6 (under		networks required the	
		Defendants'		use of high-level	
		construction, a protocol		protocols to transmit	
		used for communication		information between a	
		over "Fibre Channel		workstation and a	
		based networks" would		network serverThe	
		be a network protocol).		problem with this type	
				of system is exactly the	
				problem that the '035	
				Patent described in the	
				Background of the	
				Invention and was	
				designed to overcome.")	
		(1) The second states of th		Second Reexam Reply	
				at 35 ("the Ethernet	
				based system of Spring	
				relies on higher level	
				protocols to achieve	
				remote storage")	
				Def. Ex. 8, NIIRC	
				("TCP/IP, e.g., used in	
				Ethernet	
				communicationsis not	
				considered to be a	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
				NLLBP")	
				WITHOUT INVOLVING NETWORK	
				PROTOCOLS -	
				Extrinsic Evidence Berg. Decl.¶¶ 46-48	
				Berg. App. H at 80-81	
				WITHOUT	
				WITHOUT INVOLVING FILE SYSTEM	
				COMMANDS – <u>Intrinsic Evidence</u>	
				First Reexam Reply at 10 ("the storage router is not required to	
				translate some high level command from the workstation (e.g., a file	
				system command, or function call with arguments) into a low	
				level SCSI command") First Reexam Reply at	
				11 (stating that the Petal reference uses "file system commands" and	
	•••••••••••••••••••••••••••••••••••••••		23		

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	Spec	cial Master's Proposed Co	nstruction of Disputed To	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
				therefore "does not allow the client (i.e., workstation) to access the storage devices using an NLLBP")	
				WITHOUT INVOLVING TRANSLATION FROM ONE PROTOCOL TO ANOTHER – Intrinsic Evidence	
				First Reexam Reply at 10-11 ("Therefore, Petal does not disclose, teach or suggest a system for 'allowing accessusing native low level, block protocols as recited' in the claims.")	
				First Reexam Reply at 10 ("there is no translation of the commands from a higher level protocol to a low level protocol. In other words, the storage router is not required to translate some high level command from the workstation (e.g., a file system command, or	

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	Spe	cial Master's Proposed C	onstruction of Disputed Te	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
				function call with arguments) into a low level SCSI command."	
				First Reexam Reply at 22 ("Thus, the devices of Claim 1 connected to the first data transport	
				protocol can access the storage devices using commands that do not require translation from a high level protocol to a low-level protocol.")	
				WITHOUT INVOLVING TRANSLATION FROM ONE PROTOCOL TO ANOTHER – <u>Extrinsic Evidence</u>	
				Berg Decl. ¶¶ 30-34	
and a supervisor unit coupled to the first controller, the second controller and the buffer the supervisor	Native low level block protocol ("NLLBP"): Native: "Designed for use with	Native low level block protocol: Intrinsic:	Native low level block protocol: Does not need to be	IN GENERAL – Extrinsic Evidence Berg. Decl. ¶ 41-43	"A set of rules or standards that enable computers to exchange information
buffer, the supervisor unit operable to map between devices connected to the first transport medium and the storage devices, to	 Designed for use with a specific type of storage device." Block Protocol: "A set of rules or 	Abstract, Col. 1, ll. 44, Col. 2, ll. 13-14, 26; Col. 3, ll. 17, 22-23, 53, 63; Col. 4, ll. 4-5, 25; Col. 5, l. 3; Claim 1,	separately construed; alternatively, may be construed with reference to individual terms as follows:	NATIVE – Intrinsic Evidence 1.43-46 ("These protocols map directly	and do not involve the overhead of high level protocols and file systems typically required by network
implement access	standards for	Col. 9, 11. 29-30; Col.	Native:	to the mechanisms used	servers."

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	Spe	cial Master's Proposed Co	onstruction of Disputed Te	erms	
Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
	-		· · · · ·		
	system protocols."	of the "network protocol" into low level requests (i.e., NLLBP) and sending the NLLBP to the physical storage devices). Claim 1, Col. 9, ll. 13- 30 (storage router "allow[s] access from <u>devices</u> connected to the first transport medium to the storage devices using native low level,		usable only for a particular computer;" native language is "a computer language peculiar to the machines of one manufacturer"); Def. Ex. 21, <i>Dictionary.com</i> <i>Unabridged</i> (based on <i>Random House</i> <i>Dictionary 2010</i>), accessed from http://dictionary.referen	

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Special Master's Proposed Construction of Disputed Terms							
	Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction	
			block protocols" (emphasis added); the		ce.com on 2/12/2011.		
			storage router,		Def. Ex. 22, <i>IEEE</i>		
			specifically, the		Standard Glossary of		
			supervisor unit within		Computer Networking		
			the storage router,		Terminology (1995) at		
			"uses" the NLLBP to		32. (a protocol converter		
			permit or enable access).		is "a dedicated device		
	· · ·				that translates the		
			Abstract; Col. 2, 11. 12-		protocol native to an		
			15, 17-20, 24-27; Col. 3,		end-user device into a		
			II. 59-63; Col. 3, II. 51-		different protocol").		
			53; Col. 4, Il. 2-6; Col.				
			5, II. 1-5; Col. 9, II. 28-		Levy Decl. ¶ 36 (alleged		
			31; Col. 10, 11. 9-11		invention "presents		
			(specification discloses that NLLBPs are used		virtual local storage to the workstation that		
				and the second			
			by, and at, the storage router to allow access).		looks just like local storage to the		
			router to allow access).				
			Col. 6, 11. 33-41, 46-56		workstation")		
			(specification describes		Levy Supp. Decl. ¶ 23		
			two embodiments	and the second	("Consequently, the host		
			wherein "devices"		system will access the		
			making the storage		virtual local storage		
			access request are		using the NLLBP		
			servers).	n an	appropriate for storage		
					that the host system sees		
			April 6, 2005 Reply to		as its local storage.")		
			Office Action at 10-11,		, , , , , , , , , , , , , , , , , , ,		
			Fore Decl. ISO				
			Crossroads' Post-Hr'g		LOW LEVEL		
			Cl. Const. Br., Ex. E;		PROTOCOL:		
			July 22, 2005 Reply to		See "Allowing		
			Office Action at 24-27,		accessusing native		
			Fore Decl. ISO		low level block		
			Crossroads' Post-Hr'g		protocol", supra.		

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Special Master's Proposed Construction of Disputed Terms							
Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's		
Language	Construction	Evidence	Construction	Evidence	Construction		
		Cl. Const. Br., Ex. F					
		(Crossroads					
		distinguished Petal,		BLOCK PROTOCOL			
		Spring and Oeda as		– Intrinsic Evidence			
		having a server that		1:54-56 (block protocols			
		provided controlled		are distinct from, for			
		access to storage was		example, file system			
		required to translate		protocols that handle			
		high level file system		data as files)			
		commands into low					
		level commands in order		BLOCK PROTOCOL			
		to send the NLLBP to		_			
		the storage devices).		Extrinsic Evidence			
				Def. Ex. 19, Rudolf			
		April 6, 2005 Reply to		Graf, Modern			
		Office Action at 8-11,		Dictionary of			
•		19, 22-23, Fore Decl.		<i>Electronics</i> (1999) at 76			
		ISO Crossroads' Post-					
		Hr'g Cl. Const. Br., Ex.		Def. Ex. 20, Microsoft			
		E; July 22, 2005 Reply		Computer Dictionary			
		to Office Action at 11-		(5th ed. 2002) at 65			
		17, 21-28, Fore Decl.		("block device")			
		ISO Crossroads' Post-		(block device)			
		Hr'g Cl. Const. Br., Ex.		Berg. Decl. ¶ 49-52			
		F (showing that		Beig. Deel. 49-52			
		Crossroads did not make					
		a sweeping disclaimer					
		of any use of a "network					
		server"; Crossroads					
		distinguished its					
		invention from Oeda,					
		Petal and Spring based					
		on the requirement that					
		the "network server"					
κ.		that provided controlled					
		access to storage was required to translate the					

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Actual Claims	Crossroads' Proposed	cial Master's Proposed Co Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		high level file system			
		command into low level			
		commands in order to		and the second second second	
		send the NLLBP to the			
		storage device, not the			
		use of Ethernet			
		networks, Ethernet or			
		TCP/IP).			
		Col. 2, 11. 17-20; Col. 5,			
		11. 19-22, 50-57, 60-63;			
		Col. 6, 11. 32-37; '147			
		Patent, Claim 1, Col. 9,			
		11. 28-32 (disclosing and			
		claiming embodiments			
		using Fibre Channel; the			
		inclusion of "without			
		involving network			
		protocols" according to			
		Defendants' expert			
		would prohibit the use			
		of Fibre Channel despite			
		the fact that these are			
		express embodiments).			
		Col. 5, 11. 53-56 (Fibre			
		Channel is a protocol	and the second		
		used for			
		communications over			
		"Fibre Channel based			
		networks").			
		Col. 1, Il. 42-53; Col. 3,			
		11. 16-24; Col. 5, 11. 1-5			
		(specification notes that			
		NLLBPs do not involve			
		overhead of high level		the second se	

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		network protocols or file systems).			· · · · · · · · · · · · · · · · · · ·
		Col. 6, ll. 31-41, 46-56 (specification has two			•
		distinct embodiments in which the "devices"			
		making storage requests are servers).			
		Extrinsic:			
		March 7, 2011 Supp. Decl. of John Levy,			
		Ph.D., ¶2; March 7, 2011 Decl. of Brian Berg ¶42 (experts agree			
		that "NLLBP" is not a term of art).	and An Anna Anna Anna Anna Anna Anna Anna A		
		Hr'g Tr. at 121:8-16, March 8, 2011 (parties			
		agree that "NLLBP" should be construed as a			
		single term, consistent with use in			
		specification)			
		March 7, 2011 Supp. Decl. of John Levy, Ph.D., ¶13 (Ethernet and			
		TCP/IP protocols are concerned only with			
		delivery of messages).			
		March 7, 2011 Decl. of Brian Berg ¶48 (a SCSI			· · · · · · · · · · · · · · · · · · ·

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ctual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
 00.		command would be a			
		low level command).			
		March 7, 2011 Decl. of			
		Brian Berg, ¶37 (states			
		that "low level" means			
		"without involving			
		file system protocols.").			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶4 (person of			
		ordinary skill would understand that the			
		specification discloses a			
		server that sends			
		requests for storage			
		access to a storage			
		router using NLLBP).			
		Touter using NELEDI J.			
		Hr'g Tr. 76:4-10, 82:20-			
		23, March 8, 2011 (in			
		hypothetical network of			
		Graphic 2 of			
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-			
		Hr'g Cl. Const. Br., Ex.			
		J) the workstation sends			
		high level file systems			
		commands to network			
		server); <i>Id.</i> at 200:2-5,			
		201:22-24, 202:24-			
		203:3 (Defendants			
		expressly stated that a			
		"device" is a "computer"			
 		that is both "reading or			·····

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	Spe	cial Master's Proposed Co	onstruction of Disputed Te	erms	· · · · · · · · · · · · · · · · · · ·
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
<u> </u>		writing data from a			
		storage device" and			
		sending NLLBPs and			
		the only "device" that			
		does so in Graphic 2,			
		shown in Crossroads'			
		Post-Hearing Brief is			
		the "network server").			
					,
		Crossroads' Concise			
		Statement of			
		Infringement, Dot Hill			
		Litigation (Case No. A-			
		03-CV-754 SS), Fore			
		Decl. ISO Pl.'s Post-			
		Hr'g Cl. Const. Br., Ex.			
		H; April 28, 2011 2d			
		Supp. Decl. of John			
		Levy, Ph.D., ¶5			
		(accused devices in Dot			
		Hill litigation were		at a protection of the	
		designed to be used in			
		hypothetical system			
		shown in Graphic 2 of			
		Defendants' Markman			
		Demonstratives (Fore			
	1	Decl. ISO Pl's Post-			
		Hr'g Cl. Const. Br., Ex.			
		J)).			
		Hr'g Tr. at 81:12-15,			
		March 8, 2011 (all			
		parties agree that the			
		Petal, Spring and Oeda			
		references disclose			
		systems with a "server"			
		interposed between			

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Actual Claims	Spe Crossroads' Proposed	cial Master's Proposed Co Crossroads'	onstruction of Disputed Te Defendants' Proposed	erms Defendants'	Special Master's
Language	Crossroads Proposed Construction	Evidence	Construction	Evidence	Construction
		workstations and			
		storage devices); <i>Id.</i> at			
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants			
		agree that the "translation"			
		distinguished by			
		patentees during			
		reexamination was from			
		high level file system			
		commands into NLLBP			
		requests); Id. at 89:11-			
		16 (parties agree that			
		"allowing access			
		using NLLBP" occurs			
		without a translation			
		from a high level file system command to a			
		NLLBP request); <i>Id.</i> at			
		91:14-16, 92:1-5, 152:4-			
		7 (Defendants concede			
		that the "network			
		protocols" described in			
		the Oeda, Petal and			
		Spring references			
		included file system		· · ·	
		commands thus,			
		including "without			
		involving network			
		protocols" is superfluous to "without			
		involving a translation			
		from a high level file			
		system command to a			
		native low level block			
		protocol request.")			
			33		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		April 28, 2011 2d Supp.			·
		Decl. of John Levy,			
		Ph.D., ¶7 (CIFS, NFS			
		and FTP are network			
		protocols).			
		March 7, 2011 Decl. of			
		Brian Berg, ¶37			•
		(Defendants' expert uses			
		term "network protocol"			
		broadly such that it			
		would include Fibre			
		Channel).			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶6 (under			
		Defendants'			
		construction, a protocol used for communication			
		over "Fibre Channel			
		based networks" would			
		be a network protocol).			
		be a network protocor).			
		February 22, 2011 Decl.			
		of John Levy, Ph.D., ¶¶			
		31, 33 (NLLBPs do not			
	· · · · · · · · · · · · · · · · · · ·	have the overhead			
		associated with the use			
		of higher level protocols			
		to access storage); Id.			
		34 (specification			
		describes network			
		servers communicating			
		with storage using			
		NLLBPs).			

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Claim 2:	Construction	Evidence	Construction	Evidence	Construction
The storage router of claim 1, wherein the	Device:	Device:	Device:	See claim 1, supra. 4	No Construction Necessary.
supervisor unit	"Computing device that	Intrinsic:	Computer.		inecessary.
maintains an allocation	issues storage access				
of subsets of storage	requests."	Claim 1, Col. 9, Il. 27-			
space to associated	requests.	30 ("devices" refers to			
devices connected to the		the devices that make	and the second second second		
first transport medium,		requests and are allowed			
wherein each subset is		access to storage			
only accessible by the		devices).			
associated device					
connected to the first		Col. 1, 11. 36-37; Col. 2,			
transport medium.		11. 4-5; Col. 4, 11. 55-56;			
-		Col. 8, 11. 65-68 (the			
		specification describes		and the second	
		the devices that make		and the second	
		requests to access the			· · · ·
		storage devices as			
		"computing devices").			
		Col. 1, ll. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local			
		storage device ").	· · · · · · · · · · · · · · · · · · ·		
		Claim 3, Col. 9, 11. 37-			
		39 (principles of claim			
		differentiation require			
		"devices," as a group,		and the second sec	

⁴ For this and other claim terms appearing in multiple claims, the parties have not identified any evidentiary issues that are different between different claims. Therefore, for the sake of brevity and clarity, Defendants avoid repetition of issues addressed in detail previously in this chart.

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, 11. 31-41, 46-56			
		(the specification	and the second second second		
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
		and the second			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
· · · · ·		3-6, 41-43; Col. 4, ll.			
		38-42, 11. 55-56 Col. 6,			
		11. 45-55; Col. 8, 11. 65-			
		68 ("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			
		workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			
		April 6, 2005 Reply to	· · · ·		
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to			
		Office Action at 7-15,			
		21-23, 27-29, 32, 33,			
		35-37, 39, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		F ("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
	·			and the second second second	
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would			
		understand that in the			
		embodiments at Col. 6,			
		Il. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			
		12000000000000000000000000000000000000			
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. W		· · · ·	
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or			
		appliance. Commonly			
		used in reference to			
		peripherals such as			
		printers, CRTS and disk			
		drives").			· · · · · · · · · · · · · · · · · · ·
	•				
			37		

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Hr'g Tr. at 202:24-			``
		203:3, 205:4-7, Mar. 8,			
		2011 (Defendants'			
	-	counsel agreeing that			
		the defining			
		characteristic of a			
		device is that it is the			
		thing that issues storage			
		requests).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that	· .		
		can request access to		-	
		storage).			
		Minnege & Computer			
		Microsoft Computer Dictionary 430 (3d Ed.	and the second second second		
		<u>Dictionary</u> 430 (3d Ed. 1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
	*	computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers			
		functioning as			
		workstations on the			
		network").			
			38		
		ander en de la constante de la Constante de la constante de la			

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Special Master's Report at 22, <i>Dot Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that allows users to integrate different servers or workstations into a storage network").			
laim 3:					
he storage router of	Device:	Device:	Device:	See claim 1, supra.	No Construction
laim 2, wherein the evices connected to the rst transport medium omprise workstations.	"Computing device that issues storage access requests."	Intrinsic: Claim 1, Col. 9, ll. 27- 30 ("devices" refers to the devices that make requests and are allowed access to storage devices). Col. 1, ll. 36-37; Col. 2, ll. 4-5; Col. 4, ll. 55-56; Col. 8, ll. 65-68 (the specification describes the devices that make requests to access the storage devices as "computing devices").	Computer.		Necessary.
		Col. 1, ll. 57-60 ("from the perspective of a			

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local			
		storage device ").			
		Claim 3, Col. 9, 11. 37-		and the second	
		39 (principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be broader than			
		"workstations").			
		workstations j.			
		Col. 6, 11. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, ll. 4-6; Col. 3, ll.			
		3-6, 41-43; Col. 4, ll.			
		38-42, ll. 55-56 Col. 6,			
		11. 45-55; Col. 8, 11. 65-			
		68 ("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			
		workstations,			
		input/output devices,			
		"initiator" and "target" devices).			
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	April 6, 2005 Reply to Office Action at 8, 10, 12, 22, Fore Decl. ISO Crossroads' Post-Hr'g Cl. Const., Ex. E; July 22, 2005 Reply to Office Action at 7-15, 21-23, 27-29, 32, 33,		Evidence	
	Office Action at 8, 10, 12, 22, Fore Decl. ISO Crossroads' Post-Hr'g Cl. Const., Ex. E; July 22, 2005 Reply to Office Action at 7-15, 21-23, 27-29, 32, 33,			
	Crossroads' Post-Hr'g Cl. Const., Ex. E; July 22, 2005 Reply to Office Action at 7-15, 21-23, 27-29, 32, 33,			
	Cl. Const., Ex. E; July 22, 2005 Reply to Office Action at 7-15, 21-23, 27-29, 32, 33,			
	22, 2005 Reply to Office Action at 7-15, 21-23, 27-29, 32, 33,			
	Office Action at 7-15, 21-23, 27-29, 32, 33,			
	21-23, 27-29, 32, 33,			
	25 27 20 Ears Deal	4 · · · · · · · · · · · · · · · · · · ·		
	35-37, 39, Fore Decl.			
	ISO Crossroads' Post-			
	Hr'g Cl. Const. Br., Ex.			
	F ("Device" is used over			
	ninety times in the			
	reexamination			
	prosecution history to			
	refer to types of devices			
	capable of making	· · · · · · · · · · · · · · · · · · ·		
	requests for storage).			
	Extrinsic:			
	April 28, 2011 2d Supp.			
	Decl. of John Levy,			
	Ph.D., ¶ 4 (one of			
	ordinary skill would			
	understand that in the			
	embodiments at Col. 6,			
	ll. 33-41; 46-56, it is the			
	server that sends			
	requests for storage			
	access to the storage			
	router using NLLBP).			
	Touter using NLLBF).			
	The McGraw-Hill			
	<u>Illustrated Dictionary of</u>			
	Personal Computers 126			
	$\frac{\text{Personal Computers}}{(4^{\text{th}} \text{ ed. 1995}), \text{ Fore}}$			
	(+ cu. 1995), FUIC			
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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or			
		appliance. Commonly			
		used in reference to peripherals such as			
		printers, CRTS and disk			
		drives").			
		unves).			
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8,			
		2011 (Defendants'			
		counsel agreeing that			
		the defining			
		characteristic of a			
		device is that it is the			
		thing that issues storage			
		requests).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as "(1) on a local area			
		network (LAN), a			
		notwork (D/114), u			
			42		

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,		and the second	
		and provides resources			
		to computers	and the second		
		functioning as			
		workstations on the			
		network").			
		Special Master's Report			
		at 22, Dot Hill			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		(Court previously			
		construed "storage			
		router" as "a data			
		transmitting device that			
		allows users to integrate			
		different servers or			
		workstations into a			
		storage network").			
he storage router of	Workstations:	Workstations:	Workstation:	Extrinsic Evidence	"A computer havin
laim 2, wherein the					input/output device
evices connected to the	"A remote computing	Intrinsic:	A computer including	Berg Decl. ¶ 64-65	intended for use by
rst transport medium	device that connects to		human input/output		humans."
omprise workstations.	the first (Fibre Channel)	Col. 4, ll. 39-41	devices such as a	Def. Ex. 19, Rudolf	
	transport medium, and	(specification defines	display and keyboard	Graf, Modern	
	may consist of a	workstation as a	and designed for use by	Dictionary of	
	personal computer."	"computing device").	one person at a time.	Electronics (1999) at	
				854 ("A personal	
		Extrinsic:		computer or terminal	
				devicewhich is used	
		Chaparral Markman		by someone to perform	
		Order at 16, Fore Decl.		the greater part of his or	

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	Special Master's Proposed Construction of Disputed Terms								
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction				
Language	Construction	ISO Crossroads' Cl. Const. Br., Ex. L (Crossroads' construction consistent with historic construction); <i>Dot Hill</i> Stipulated Definitions of Claim Terms at 2, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. M (parties in <i>Dot Hill</i> litigation adopted	Construction	her everyday work"). Def. Ex. 20, <i>Microsoft</i> <i>Computer Dictionary</i> (5th ed. 2005) at 574. Pl. Br. Ex. Z, <i>Microsoft</i> <i>Press Computer</i> <i>Dictionary</i> (1991) at 368.	Construction				
		Crossroads' proposed construction); <u>Microsoft Press</u> <u>Computer Dictionary</u> 368 (1991), Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. Z ("workstation" is understood to be a broad term in the art).							
Claim 4: The storage router of claim 2, wherein the storage devices comprise hard disk drives.	[No claim term at issue]		[No claim term at issue]						
Claim 5: The storage router of claim 1, wherein the first controller comprises: a first protocol unit operable to connect to the first transport medium;	[No claim term at issue]		[No claim term at issue]						

	Spe	cial Master's Proposed C	onstruction of Disputed Te	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
a first-in-first-out queue coupled to the first protocol unit; and a direct memory access (DMA) interface coupled to the first-in- first-out queue and to the buffer.					
Claim 6:					
The storage router of claim 1, wherein the second controller comprises: a second protocol unit operable to connect to the second transport medium: an internal buffer coupled to the second protocol unit; and a direct memory access (DMA) interface coupled to the internal buffer and to the buffer of the storage router.	[No claim term at issue]		[No claim term at issue]		
Claim 7: A storage network,	Workstations:	Workstations:	Workstation:	See claim 3, supra.	"A computer having
A storage network, comprising: a first transport medium; a second transport medium; a plurality of workstations connected to the first transport medium;	"A remote computing device that connects to the first (Fibre Channel) transport medium, and may consist of a personal computer."	Vorkstations: Intrinsic: Col. 4, ll. 39-41 (specification defines workstation as a "computing device").	A computer including human input/output devices such as a display and keyboard and designed for use by one person at a time.	see cuum s, supra.	A computer naving input/output devices intended for use by humans."

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Extrinsic:			
		Chaparral Markman			
		Order at 16, Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. L			
		(Crossroads'			
		construction consistent			
	- · · · · · · · · · · · · · · · · · · ·	with historic			
		construction); Dot Hill			
		Stipulated Definitions of			
		Claim Terms at 2, Fore			
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. M			
	· · ·	(parties in Dot Hill			
		litigation adopted			
		Crossroads' proposed			
		construction);			
		Microsoft Press			
		Computer Dictionary			
		368 (1991), Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. Z			
		("workstation" is			
		understood to be a broad	· · · ·		
		term in the art).			· · · · ·
· · · · · · · · · · · · · · · · · · ·					
plurality of storage	Implement access	Implement access	Access controls:	See claim 1, supra.	"Provides controls
devices connected to	controls for storage	controls for storage			which limit a device's
the second transport	space on the storage	space on the storage	Controls that use a map		access to a specific
medium; and	devices:	devices:	to permit a particular		subset of storage
storage router			device to read data from		devices or sections of
interfacing between	"Provides controls	Intrinsic:	or write data to a		single storage device
the first transport	which limit a device's		particular storage space		according to a map."
medium and the	access to a specific	Fig. 3, Col. 3, 11. 7-59,	assigned to the device,		- 1
second transport	subset of storage	Col. 4, 11. 7-27, 33-35,	and to prevent the		
medium, the storage	devices or sections of a	40-43, 48-50, 50-53	device from reading		
			46		

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	Spe	cial Master's Proposed Co	onstruction of Disputed Te	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
router providing virtual local storage on the storage devices to the workstations and	single storage device according to a map."	(Fig. 3 shows embodiment in which all workstations can access global storage	data to or writing data from storage space assigned to other devices.		
operable: to map between the		device).			
workstations and the storage devices;		Col. 4, ll. 7-11 ("access controls" applies to			
to implement access controls for storage		shared storage).			
space on the storage devices;		July 22, 2005 Reply to Office Action at 13-14, Fore Decl. ISO			
		Crossroads' Post-Hr'g Cl. Const. Br., Ex. F (discussion during			
		reexamination, that the "access controls" feature			
		includes the concept of allowing multiple devices to have access			
		to shared storage). Extrinsic:			
		<i>Chaparral</i> Markman Order at 3-7, 15, Fore			
		Decl. ISO Crossroads' Cl. Const. Br., Ex. L (Crossroads'			
		construction parallels historic construction;			
		the invention contemplates using access controls for an			
		entire storage device as well as shared storage;			

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Court has rejected a			
		construction in which a			· · · · · · · · · · · · · · · · · · ·
		particular subset of	and a second		
		storage could only be			
	and the second	accessed by a single	1 - 24 - 24 - 24 - 24 - 24 - 24 - 24 - 2		
		workstation).			
		Comments on Statement			
		of Reasons for			
		Patentability and/or			
		Confirmation, Fore			
		Decl. ISO Pl.'s Cl.			
		Const. Br., Ex. I		· · · · ·	
		(patentees expressly disagreed with any			
		characterization of the			
		claims that were			
		"inconsistent with the			
		claim language,		· · · · · · · · · · · · · · · · · · ·	
		specification or prior			
		prosecution history.").			
and to allow access	Allow accessto the	Allow access to the	Allow accessto the	See claim 1, supra.	"Permit or deny
from the workstations	storage devices using	storage devices using	storage devices using		access using the
to the storage devices	native low level block	native low level block	native low level, block		NLLBP of the Virtu
using native low	protocol:	protocol:	protocol:		Local Storage with
level, block protocol					involving a translati
in accordance with the	"Permit or deny reading	Intrinsic:	Permit reading and		from high level
mapping and access	or writing of data using		writing of data in the		network protocols o
controls.	the NLLBP of the	Fig. 1, Col. 1, II. 49-54;	native low level, block		file system protocol
	Virtual Local Storage	Col. 3, ll. 17-23 (the	protocol of the storage		to a native low level
	without involving a	"storage router" of the	device, without		
	translation from a high	invention is contrasted	involving network		block protocol
	level file system	with a "network server"	servers, Ethernet		request."
	command to a native	that allowed access to	networks, higher-level		
	low level, block protocol request."	storage devices by translating high level	protocols such as TCP/IP, Ethernet		
	protocor request.	file system commands	protocols, network		
	L	Ine system commands	protocors, network	har and the second s	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		of the "network	protocols or file system		
		protocol" into low level	protocols, or translation		
		requests (i.e., NLLBP)	from one protocol to		
		and sending the NLLBP	another.		
		to the physical storage			
		devices).			
		Claim 1, Col. 9, Il. 13-			
		30 (storage router			
		"allow[s] access from	a gran a series a ser		
		devices connected to the			
		first transport medium			
		to the storage devices			
		using native low level,			
		block protocols"			
		(emphasis added); the			
		storage router,			
		specifically, the			
		supervisor unit within			
		the storage router,			
		"uses" the NLLBP to			
		permit or enable access).			
		Col. 4, 11. 7-47			
		(invention of patents-in-			
		suit provides "virtual			
		local storage" that			
		appears to a workstation			1
		as local storage, and			
		appears to have the			
		same characteristics of			
		local storage).			· · ·
		č			
		Col. 4, 11. 44-57 ("virtual			
		local storage" is			
		"provided" by the			· ·
		storage router in a			
· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
			49		

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		manner that is			· · · · · · · · · · · · · · · · · · ·
		transparent to the			
		devices requesting	and the second		
		storage access).			
		Col. 5, Il. 11-17, Il. 24-			
		27 (supervisor unit			
		within the storage router	and the second		
		processes NLLBP			
		requests from the			
		devices to access			
		permitted storage).			
		F			
		Abstract; Col. 2, Il. 12-			
		15, 17-20, 24-27; Col. 3,		,	
		11. 59-63; Col. 3, Il. 51-			
		53; Col. 4, 11. 2-6; Col.			
		5, 11. 1-5; Col. 9, 11. 28-		· · ·	
		31; Col. 10, ll. 9-11			
		(specification discloses that NLLBPs are used			
		by, and at, the storage			
		router to allow access).			
		Col. 6, ll. 33-41, 46-56			
		(specification describes			
		two embodiments			
		wherein "devices"			
		making the storage			
		access request are			
		servers).		·	
		Col. 1, ll. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such			
				······································	· · · · · ·
			50		

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A street C?			nstruction of Disputed Ter		Q.,: . 1 B.F: 4
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		server data, the access is			
		much slower than access			
		to data on a local			
		storage device ").			
		Claim 3, Col. 9, 11. 37-			
		39 (principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be	and a second state of the		
		broader than			
		"workstations").			
		Col. 3, 11. 17-23 (the			
		"network protocol" used by the prior art			
		"network servers" to			
		allow access to storage	and the second second second		
		devices is a protocol			
		that includes a high			
		level file system			
		command that must be			
		translated into low level			
		storage requests).			
		April 6, 2005 Reply to			
		Office Action at 10-11,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. E;			
		July 22, 2005 Reply to			
		Office Action at 24-27,			
		Fore Decl. ISO	1		
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F (Crossroads			
		distinguished Petal,			
	J	<u> </u>			

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· · · · · · · · · · · · · · · · · · ·	Spe		onstruction of Disputed Te		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Spring and Oeda as			
		having a server that			
		provided controlled			
		access to storage was			
		required to translate			
		high level file system			
		commands into low			
		level commands in order			
		to send the NLLBP to			
		the storage devices).			
		April 6, 2005 Reply to			
		Office Action at 8-11,			
		19, 22-23, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		E; July 22, 2005 Reply			
		to Office Action at 11-			
		17, 21-28, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		F (showing that			
		Crossroads did not make			
		a sweeping disclaimer			
		of any use of a "network			
		server"; Crossroads			
		distinguished its			
		invention from Oeda,			
		Petal and Spring based			
		on the requirement that			
		the "network server"			
		that provided controlled			
		access to storage was			
		required to translate the			
		high level file system			
		command into low level			
		commands in order to			

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
· · · · · · · · · · · · · · · · · · ·		send the NLLBP to the			
		storage device, not the			
		use of Ethernet			
		networks, Ethernet or			
		TCP/IP).			
		Col. 2, 11. 17-20; Col. 5,			
		ll. 19-22, 50-57, 60-63;			
		Col. 6, ll. 32-37; '147			
		Patent, Claim 1, Col. 9,			
		11. 28-32 (disclosing and			
		claiming embodiments			
		using Fibre Channel; the			
		inclusion of "without			
		involving network			
		protocols" according to			
		Defendants' expert			
		would prohibit the use			
		of Fibre Channel despite			
		the fact that these are			
		express embodiments).			
		Col. 5, 11. 53-56 (Fibre		<i></i>	
		Channel is a protocol			
		used for			
		communications over			
		"Fibre Channel based			
		networks").			
		Extrinsic:			
		March 7, 2011 Supp.			
		Decl. of John Levy,			
		Ph.D., ¶¶ 9-13 (data			
		transfer in networks best			
		understood as having			
		layers; when TCP/IP			

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Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
<u> </u>		and Ethernet protocols			
		were used by prior art			
		systems to transport			
		high level network file			
		system requests, a			
		network server would			
		translate such requests			
		into low level requests			
	-	to access storage); ¶6-7			
		(prior art "server"		· · · · · · · · · ·	
		described in patents-in-			
		suit was specifically a			
		device that allowed			
		access between the			
		device requesting			
		"access to data" and the			
		storage devices using			
		something called a			
		"network protocol";			
		such "servers"			
		implemented file			
		systems and received			
		high level file system			
		protocols from devices			
		requesting data access).			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶4 (person of			
		ordinary skill would			
	1	understand that the			
		specification discloses a			
		server that sends			
		requests for storage			
		access to a storage			
		router using NLLBP).			

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A star al Clark was			Instruction of Disputed Te		0
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to		· · · · · · · · · · · · · · · · · · ·	
		storage).			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,		en e	
		and provides resources			
		to computers			
		functioning as			
		workstations on the			
		network").			
		Special Master's Report			
		at 22, Dot Hill			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		(Court previously			
		construed "storage			
		router" as "a data			
		transmitting device that			
		allows users to integrate			
		different servers or			

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		workstations into a			
		storage network").			
		Hr'g Tr. 76:4-10, 82:20-			
		23, March 8, 2011 (in			
		hypothetical network of			
		Graphic 2 of			
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-			
		Hr'g Cl. Const. Br., Ex. J) the workstation sends			
		high level file systems			
		commands to network			
		server); <i>Id.</i> at 200:2-5,			
		201:22-24, 202:24-			
		203:3 (Defendants			
		expressly stated that a			
		"device" is a "computer"			
		that is both "reading or			
		writing data from a			A second second
		storage device" and			
		sending NLLBPs and			
		the only "device" that			
		does so in Graphic 2,			
		shown in Crossroads'			
		Post-Hearing Brief is			
		the "network server").			
		Crossroads' Concise			
		Statement of			
		Infringement, Dot Hill			
		Litigation (Case No. A-			
		03-CV-754 SS), Fore			
		Decl. ISO Pl.'s Post-			
		Hr'g Cl. Const. Br., Ex.		a M	
		H; April 28, 2011 2d			· · · · ·
				v	
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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master' Construction
		Supp. Decl. of John			
		Levy, Ph.D., ¶5			
		(accused devices in Dot			
		Hill litigation were			· · · · · · · · · · · · · · · · · · ·
		designed to be used in			
		hypothetical system			
		shown in Graphic 2 of			
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-			
		Hr'g Cl. Const. Br., Ex.			
	• • • •	J)).			
			-		
		Hr'g Tr. at 81:12-15,			
		March 8, 2011 (all			
		parties agree that the			
		Petal, Spring and Oeda			
		references disclose			
		systems with a "server"			
		interposed between			
		workstations and			· · · · · ·
		storage devices); Id. at			
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants			
		agree that the			
		"translation"			
		distinguished by			
		patentees during			
		reexamination was from			
		high level file system			
		commands into NLLBP			
		requests); Id. at 89:11-			
		16 (parties agree that			
		"allowing access			
		using NLLBP" occurs			
		without a translation			
		from a high level file			
			57		
			57		

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Special Master's Proposed Construction of Disputed Terms							
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction		
		system command to a					
		NLLBP request); <i>Id.</i> at					
		91:14-16, 92:1-5, 152:4- 7 (Defendants concede					
		that the "network					
		protocols" described in					
		the Oeda, Petal and					
		Spring references					
		included file system					
		commands thus, including "without					
		involving network					
		protocols" is					
		superfluous to "without					
		involving a translation					
		from a high level file					
		system command to a native low level block					
		protocol request.")					
		April 28, 2011 2d Supp.		the second s			
		Decl. of John Levy,					
		Ph.D., ¶7 (CIFS, NFS and FTP are network					
		protocols).					
		March 7, 2011 Decl. of					
		Brian Berg, ¶37					
		(Defendants' expert uses term "network protocol"					
		broadly such that it					
		would include Fibre					
		Channel).					
		April 28, 2011 2d Supp.					
		Decl. of John Levy, Ph.D., ¶3 (a workstation					
· · · · · · · · · · · · · · · · · · ·							

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Actual Claims	Spe Crossroads' Proposed	cial Master's Proposed Co Crossroads'	onstruction of Disputed Ter Defendants' Proposed	rms Defendants'	Special Master's
	Construction	Evidence	Construction	Evidence	Construction
Language	Construction	Evidence gets "access to the local storage device through native low level block protocols"). Hr'g Tr. at 129:7-13, March 8, 2011 (Defendants agreed to remove "without involving Ethernet networks, Ethernet protocols, TCP/IP" from their proposed construction).March 7, 2011 Supp. Decl. of John Levy, Ph.D., ¶13 (Ethernet and TCP/IP protocols are concerned only with delivery of	Construction	Evidence	Construction
		February 22, 2011 Decl. of John Levy, Ph.D., ¶36 (NLLBP "used" by the storage router to allow access is the NLLBP sent to it from the device; this NLLBP is the NLLBP appropriate for the virtual local storage, not the NLLBP of the storage device storing the data). <u>Dictionary of Computer</u> and Internet Terms 311			

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	Spe	cial Master's Proposed Co	onstruction of Disputed To	erms	•
Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		(6 th Ed. 1996), Fore			
		Decl. ISO Pl.'s Cl.			
		Const. Br., Ex. S			
		(defining "native" as "1.			
		designed for a specific			
		hardware or software			
		environment (rather than			
		for compatibility with	8 1		
		something else)").			
		someting else)).		and the second	
					· - ···
		Stip. Defs. of Cl. Terms,	the second s		
		Fore Decl. ISO Pl.'s			
		Post-Hr'g Cl. Const. Br.,			
		Ex. I (parties agree that			
		"virtual local storage" is			· · · · · ·
		"storage space, in a	and the second		
		storage device that is			
		remotely connected to			· · · · ·
		an initiator device to be			
		within or locally			
		connected to the			
					-
		initiator device").	-		
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶6 (under			
		Defendants'			
		construction, a protocol			
		used for communication		· · · · ·	-
		over "Fibre Channel			
		based networks" would			
		be a network protocol).			
		be a network protocol).			
nd to allow access	Native low level block	Native low level block	Native low level block	See alaim 1	66 A
				See claim 1, supra.	"A set of rules or
from the workstations	protocol ("NLLBP"):	protocol:	protocol:		standards that enable
o the storage devices					computers to
using native low level,	Native:	Intrinsic:	Does not need to be		exchange informatio

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	Ena	cial Master's Proposed C	onstruction of Disputed Te	APPTA 6	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
block protocol in accordance with the mapping and access controls.	"Designed for use with a specific type of storage device." Block Protocol: "A set of rules or standards for exchanging information with a block-oriented	Abstract, Col. 1, II. 44, Col. 2, II. 13-14, 26; Col. 3, II. 17, 22-23, 53, 63; Col. 4, II. 4-5, 25; Col. 5, I. 3; Claim 1, Col. 9, II. 29-30; Col. 10, I. 10; Col. 10, II. 48- 49 (specification	separately construed; alternatively, may be construed with reference to individual terms as follows: Native: Designed for use with a specific type of storage	Dividente	and do not involve the overhead of high level protocols and file systems typically required by network servers."
	Low Level Protocol: "A set of rules or standards that enable computers to exchange information without involving high level file system protocols."	consistently uses "NLLBP" as a single term). Fig. 1; Col. 3, ll. 20-23 (network server shown in Fig. 1 communicates with storage devices via NLLBPs even though the SCSI commands are	device. Low-level protocol: A set of rules or standards that enable computers to exchange information without involving network servers, Ethernet networks, or higher-		
	Or, in the alternative: Native Low Level Block Protocol: "A set of rules or standards designed for exchanging information with a block-oriented storage device without involving high level file system protocols."	sent by a network server). Fig. 1, Col. 1, ll. 49-54; Col. 3, ll. 17-23 (the "storage router" of the invention is contrasted with a "network server" that allowed access to storage devices by translating high level file system commands of the "network protocol" into low level requests (i.e., NLLBP) and sending the NLLBP to the physical storage devices).	level protocols such as TCP/IP, Ethernet protocols, network protocols or file system protocols. Block protocol: A set of rules or standards for exchanging information with a block-oriented storage device		

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Special Master's Proposed Construction of Disputed Terms								
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction			
		an a			•			
		Claim 1, Col. 9, ll. 13-						
		30 (storage router						
		"allow[s] access from						
		$\frac{\text{devices}}{\sigma}$ connected to the						
		first transport medium						
		to the storage devices using native low level,						
		block protocols"						
		(emphasis added); the			н			
		storage router,						
		specifically, the						
		supervisor unit within						
		the storage router,						
		"uses" the NLLBP to						
		permit or enable access).						
		Abstract; Col. 2, Il. 12-						
		15, 17-20, 24-27; Col. 3,						
		11. 59-63; Col. 3, 11. 51-						
		53; Col. 4, ll. 2-6; Col. 5, ll. 1-5; Col. 9, ll. 28-						
		31; Col. 10, ll. 9-11						
		(specification discloses			·			
		that NLLBPs are used						
		by, and at, the storage						
		router to allow access).						
			na an an an tao ao amin' fergalana amin' ang					
		Col. 6, 11. 33-41, 46-56						
		(specification describes						
		two embodiments						
		wherein "devices"						
		making the storage						
		access request are						
		servers).						
		April 6, 2005 Reply to						
	}			· · · · · · ·	1.			
			62					

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Office Action at 10-11,		· ·	
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. E;			
		July 22, 2005 Reply to			
		Office Action at 24-27,			
	· · ·	Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		(Crossroads			
		distinguished Petal,			
		Spring and Oeda as			
		having a server that			
		provided controlled			
		access to storage was			
		required to translate			
		high level file system			
		commands into low level commands in order			
		to send the NLLBP to			
		the storage devices).			
		the storage devices).			
		April 6, 2005 Reply to			
		Office Action at 8-11,			
	· · · · · · · · · · · · · · · · · · ·	19, 22-23, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		E; July 22, 2005 Reply			
		to Office Action at 11-			
		17, 21-28, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
·		F (showing that		-	
		Crossroads did not make			
		a sweeping disclaimer			
		of any use of a "network			
		server"; Crossroads			
			63		

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Actual Claims Language	Spe Crossroads' Proposed Construction	cial Master's Proposed Co Crossroads' Evidence	nstruction of Disputed Ter Defendants' Proposed Construction	rms Defendants' Evidence	Special Master's Construction
		distinguished its			
		invention from Oeda,			
		Petal and Spring based			
		on the requirement that			
		the "network server"			
		that provided controlled			
		access to storage was			
		required to translate the			
		high level file system			
		command into low level			
		commands in order to			
		send the NLLBP to the			
		storage device, not the			
		use of Ethernet			
		networks, Ethernet or			
	· · · ·	TCP/IP).			
		Col. 2, 11. 17-20; Col. 5,			
		11. 19-22, 50-57, 60-63;			
		Col. 6, ll. 32-37; '147			
		Patent, Claim 1, Col. 9,			
	· · · · · · · · · · · · · · · · · · ·	ll. 28-32 (disclosing and	•		
		claiming embodiments			
		using Fibre Channel; the			
		inclusion of "without			
	·	involving network			
		protocols" according to			
		Defendants' expert			
		would prohibit the use			
		of Fibre Channel despite			
		the fact that these are			
		express embodiments).			
		Col. 5, 11. 53-56 (Fibre			
		Channel is a protocol			
		used for			
		communications over			

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Special Master's Proposed Construction of Disputed Terms							
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction		
		"Fibre Channel based networks").			· · · · · · ·		
		networks).					
		Col. 1, 11. 42-53; Col. 3,					
		11. 16-24; Col. 5, 11. 1-5					
		(specification notes that NLLBPs do not involve					
		overhead of high level					
		network protocols or file systems).					
		Col. 6, ll. 31-41, 46-56 (specification has two					
		distinct embodiments in					
		which the "devices"					
		making storage requests are servers).					
		Extrinsic:					
		March 7, 2011 Supp.					
		Decl. of John Levy,					
		Ph.D., ¶2; March 7, 2011 Decl. of Brian					
		Berg ¶42 (experts agree					
		that "NLLBP" is not a term of art).					
		Hr'g Tr. at 121:8-16,					
		March 8, 2011 (parties agree that "NLLBP"					
		should be construed as a					
		single term, consistent with use in					
		specification)					
<u></u>		March 7, 2011 Supp.					

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Decl. of John Levy, Ph.D., ¶13 (Bthernet and TCP/IP protocols are concerned only with delivery of messages). March 7, 2011 Decl. of Brian Berg ¶48 (a SCSI command would be a low level command). March 7, 2011 Decl. of Brian Berg, ¶37 (states that "low level" means "without involving file system protocols."). April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶4 (person of ordinary skill would understand that the specification discloses a server that sends requests for storage access to a storage router using NLLBP). Hr"g Tr. 76:4-10, 82:20- 23, March 8, 2011 (in hypothetical network of Graphic 2 of Defendants' Markman Demonstratives [Fore Decl. ISO PI's Post. Hr"g Cl. Const. Br., Ex. J) the workstation sends	Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Brian Berg ¶48 (a SCSI command, would be a low level command). March 7, 2011 Decl. of Brian Berg, ¶37 (states that "low level" means "without involving file system protocols."). April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶4 (person of ordinary skill would understand that the specification discloses a server that sends requests for storage access to a storage router using NLLBP). Hr'g Tr. 76:4-10, 82:20-23, March 8, 2011 (in hypothetical network of Graphic 2 of Decl. ISO Pl's Post-Hr'g CJ. Const. Br., Ex.			Ph.D., ¶13 (Ethernet and TCP/IP protocols are concerned only with			
Brian Berg, ¶37 (states that "low level" means "without involving file system protocols."). April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶4 (person of ordinary skill would understand that the specification discloses a server that sends requests for storage access to a storage router using NLLBP). Hr'g Tr. 76:4-10, 82:20- 23, March 8, 2011 (in hypothetical network of Graphic 2 of Defendants' Markman Demonstratives (Fore Decl. ISO Pi's Post- Hr'g Cl. Const. Br., Ex.			Brian Berg ¶48 (a SCSI command would be a			
Decl. of John Levy, Ph.D., ¶4 (person of ordinary skill would understand that the specification discloses a server that sends requests for storage access to a storage router using NLLBP). Hr'g Tr. 76:4-10, 82:20- 23, March 8, 2011 (in hypothetical network of Graphic 2 of Defendants' Markman Demonstratives (Fore Decl. ISO Pl's Post- Hr'g Cl. Const. Br., Ex.			Brian Berg, ¶37 (states that "low level" means "without involving			
server that sends requests for storage access to a storage router using NLLBP). Hr'g Tr. 76:4-10, 82:20- 23, March 8, 2011 (in hypothetical network of Graphic 2 of Defendants' Markman Demonstratives (Fore Decl. ISO PI's Post- Hr'g Cl. Const. Br., Ex.			Decl. of John Levy, Ph.D., ¶4 (person of ordinary skill would understand that the			
23, March 8, 2011 (in hypothetical network of Graphic 2 of Defendants' Markman Demonstratives (Fore Decl. ISO Pl's Post- Hr'g Cl. Const. Br., Ex.			server that sends requests for storage access to a storage			
Decl. ISO Pl's Post- Hr'g Cl. Const. Br., Ex.			23, March 8, 2011 (in hypothetical network of Graphic 2 of			
			Decl. ISO Pl's Post- Hr'g Cl. Const. Br., Ex.			

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	Spe	cial Master's Proposed Co	onstruction of Disputed Te	erms	· · ·
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		high level file systems			
		commands to network			
		server); <i>Id.</i> at 200:2-5,			
	•	201:22-24, 202:24-			
		203:3 (Defendants			
		expressly stated that a			
		"device" is a "computer"			
		that is both "reading or			
		writing data from a			
		storage device" and			
		sending NLLBPs and	A CARLES AND A CARL		
		the only "device" that			
		does so in Graphic 2,			
		shown in Crossroads'			
		Post-Hearing Brief is			
		the "network server").			
		Crossroads' Concise			
		Statement of			
		Infringement, Dot Hill			
		Litigation (Case No. A-			
		03-CV-754 SS), Fore			
		Decl. ISO Pl.'s Post-			
		Hr'g Cl. Const. Br., Ex.			·
		H; April 28, 2011 2d			
		Supp. Decl. of John			
		Levy, Ph.D., ¶5			
		(accused devices in Dot			
		Hill litigation were			
		designed to be used in			
		hypothetical system			
		shown in Graphic 2 of		·	· · · · ·
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-			
		Hr'g Cl. Const. Br., Ex.			
		J)).			
			(7		
			67		

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Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		III T (01 10 15			
		Hr'g Tr. at 81:12-15,			
		March 8, 2011 (all parties agree that the			
		Petal, Spring and Oeda	and the second second second		
		references disclose			
		systems with a "server"			
		interposed between			
		workstations and			
		storage devices); Id. at			
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants			
		agree that the			
		"translation"			
		distinguished by			
		patentees during			
		reexamination was from		-	
		high level file system			
		commands into NLLBP			
		requests); Id. at 89:11-			
		16 (parties agree that			
		"allowing access			
		using NLLBP" occurs		·	
		without a translation			
		from a high level file			
		system command to a			
		NLLBP request); Id. at			
		91:14-16, 92:1-5, 152:4-			
		7 (Defendants concede			
		that the "network			
		protocols" described in			
		the Oeda, Petal and			
		Spring references			
		included file system			
		commands thus, including "without			
		involving network			
	<u> </u>	mvorving network			
			68		

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Actual Claims	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Construction		Construction	Evidence	Construction
		protocols" is			
		superfluous to "without			
		involving a translation			
		from a high level file	and the state of the second second		
		system command to a			
		native low level block			
		protocol request.")			
		a parte de transferences			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶7 (CIFS, NFS			
		and FTP are network			
		protocols).			
		March 7, 2011 Decl. of			
		Brian Berg, ¶37			
		(Defendants' expert uses			
		term "network protocol"			
		broadly such that it			
		would include Fibre			
		Channel).			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶6 (under			
		Defendants'			
		construction, a protocol			
		used for communication			
		over "Fibre Channel			
		based networks" would			
		be a network protocol).			
		February 22, 2011 Decl.			
		of John Levy, Ph.D., ¶¶			
		31, 33 (NLLBPs do not		1	
		have the overhead			
		associated with the use		1	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		of higher level protocols to access storage); <i>Id.</i> ¶ 34 (specification describes network servers communicating with storage using NLLBPs).			
laim 8:					
he storage network of aim 7, wherein the ccess controls include n allocation of subsets f storage space to ssociated orkstations , wherein ach subset is only	Workstations: "A remote computing device that connects to the first (Fibre Channel) transport medium, and may consist of a personal computer."	Workstations: Intrinsic: Col. 4, ll. 39-41 (specification defines workstation as a "computing device").	Workstation: A computer including human input/output devices such as a display and keyboard and designed for use by one person at a time.	See claim 1, supra.	"A computer having input/output devices intended for use by humans."
ccessible by the ssociated workstation.		Extrinsic:			
		<i>Chaparral</i> Markman Order at 16, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L (Crossroads' construction consistent with historic			
		construction); <i>Dot Hill</i> Stipulated Definitions of Claim Terms at 2, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. M			
		(parties in <i>Dot Hill</i> litigation adopted Crossroads' proposed construction); Microsoft Press			

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Special Master's Proposed Construction of Disputed Terms								
Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's			
Language	Construction	Evidence	Construction	Evidence	Construction			
Tangang		<u>Computer Dictionary</u> 368 (1991), Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. Z ("workstation" is understood to be a broad term in the art).						
The storage network of claim 7, wherein the access controls include an allocation of subsets of storage space to associated workstations, wherein each subset is only accessible by the associated workstation.	Access control[s]: "Provides controls which limit a device's access to a specific subset of storage devices or sections of a single storage device according to a map."	Access control[s]: Intrinsic: Fig. 3, Col. 3, ll. 7-59, Col. 4, ll. 7-27, 33-35, 40-43, 48-50, 50-53 (Fig. 3 shows embodiment in which all workstations can access global storage device). Col. 4, ll. 7-11 ("access controls" applies to shared storage). July 22, 2005 Reply to Office Action at 13-14, Fore Decl. ISO Crossroads' Post-Hr'g Cl. Const. Br., Ex. F (discussion during reexamination, that the "access controls" feature includes the concept of allowing multiple devices to have access	Access controls: Controls that use a map to permit a particular device to read data from or write data to a particular storage space assigned to the device, and to prevent the device from reading data to or writing data from storage space assigned to other devices.	See claim 1, supra.	"Controls which limit a device's access to a specific subset of storage devices or sections of a single storage device according to a map."			

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Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		Extrinsic:			
		Chaparral Markman			
		Order at 3-7, 15, Fore			
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. L			
		(Crossroads'	 A second s		
		construction parallels			
		historic construction;			
		the invention			
		contemplates using			
		access controls for an			
		entire storage device as			
		well as shared storage;			
		Court has rejected a			
		construction in which a			
		particular subset of			
		storage could only be			
		accessed by a single			
		workstation).			
		Comments on Statement			
		of Reasons for			
		Patentability and/or			
		Confirmation, Fore			
		Decl. ISO Pl.'s Cl.			
		Const. Br., Ex. I			
		(patentees expressly			
		disagreed with any			
		characterization of the			
		claims that were			51.
		"inconsistent with the			
		claim language,			
		specification or prior			
		prosecution history.").			
			L		1
			70		
			72		
		and the second			

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Claim 9:					
The storage network of claim 7, wherein the storage devices comprise hard disk drives.	[No claim term at issue]		[No claim term at issue]		
Claim 10:					
The storage network of claim 7, wherein the storage router	Device: "Computing device that	Device: Intrinsic:	Device: Computer.	See claim 1, supra.	No Construction Necessary.
comprises: a buffer providing memory work space for the storage router;	issues storage access requests."	Claim 1, Col. 9, ll. 27- 30 ("devices" refers to the devices that make			
a first controller operable to connect to and interface with the		requests and are allowed access to storage devices).			
first transport medium, the first controller further operable to pull		Col. 1, 11. 36-37; Col. 2, 11. 4-5; Col. 4, 11. 55-56;			
outgoing data from the buffer and to place incoming data into the		Col. 8, 11. 65-68 (the specification describes the devices that make			
buffer; a second controller operable to connect to		requests to access the storage devices as "computing devices").			
and interface with the second transport medium, the second		Col. 1, ll. 57-60 ("from the perspective of a			
controller further operable to pull outgoing data from the		workstation, or other computing device, seeking to access such			
buffer and to place incoming data into the buffer;		server data, the access is much slower than access to data on a local			
and a supervisor unit coupled to the first		storage device ").			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
controller, the second		Claim 3, Col. 9, ll. 37-			
controller and the		39 (principles of claim			
buffer, the supervisor		differentiation require			
unit operable:		"devices," as a group,			
map between devices		must necessarily be			
connected to the first		broader than			
transport medium and		"workstations").			
the storage devices, to					
implement the access		Col. 6, ll. 31-41, 46-56			
controls for storage		(the specification			
space on the storage		describes "servers" as a			
devices and to process		type of computing			
data in the buffer to		device that can make			
interface between the		storage access requests).			
first controller and the					
second controller to		Abstract, Col. 1, ll. 21-			
allow access from		24, 11. 36-37, 11. 53-56;			
workstations to storage		Col. 2, 11. 4-6; Col. 3, 11.			
devices.		3-6, 41-43; Col. 4, ll.			··· · ·
		38-42, 11. 55-56 Col. 6,			
		11. 45-55; Col. 8, 11. 65-			
		68 ("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			
		workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			
		April 6, 2005 Reply to			
		Office Action at 8, 10,	· · · · ·		
		12, 22, Fore Decl. ISO			- · ·
					-
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to			
		Office Action at 7-15,		·	

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		21-23, 27-29, 32, 33,			
		35-37, 39, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		F ("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
	- · ·	capable of making			
		requests for storage).			
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
	· ·	ordinary skill would understand that in the			
·-					
		embodiments at Col. 6,			
		11. 33-41; 46-56, it is the			·
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			
		(4 th ed. 1995), Fore			
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or			
		appliance. Commonly			
· · · · · · · · · · · · · · · · · · ·	• • • • • • • • • • • • • • • • • • • •		 A second sec second second sec		nadar en en en el en
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Special Master's Proposed Construction of Disputed Terms								
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction			
······································		used in reference to						
		peripherals such as						
		printers, CRTS and disk						
		drives").						
		Hr'g Tr. at 202:24-						
		203:3, 205:4-7, Mar. 8,						
		2011 (Defendants' counsel agreeing that						
		the defining						
		characteristic of a						
		device is that it is the						
		thing that issues storage						
		requests).						
		May 11, 2011 3d Supp.						
		Decl. of John Levy,						
		Ph.D., ¶3 (a "network						
	-	server" is a server that						
		can request access to						
		storage).						
		Microsoft Computer						
		Dictionary 430 (3d Ed.						
		1997), May 11, 2011 3d						
		Supp. Decl. of John						
		Levy, Ph.D., Ex. A						
		(defining "server" as						
		"(1) on a local area						
		network (LAN), a						
		computer running						
		administrative software						
		that controls access to						
		the network and its						
		resources, such as printers and disk drives,						
	1	I DIMICIS AND UISK UNVES.						

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Special Master's Proposed Construction of Disputed Terms						
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction	
		to computers				
		functioning as				
		workstations on the				
		network").				
		Special Master's Report				
		at 22, Dot Hill				
		Litigation, Pl.'s Cl.		and the second		
		Const. Hr'g Ex. P-15				
		(Court previously	and the second second second			
		construed "storage				
		router" as "a data		· · · · · · · · · · · · · · · · · · ·		
		transmitting device that				
		allows users to integrate				
	-	different servers or				
		workstations into a				
		storage network").				
		storage network).				
and a supervisor unit	Implement the access	Implement the access	Access controls:	See claim 1, supra.	"Provides controls	
coupled to the first	controls for storage	controls for storage			which limit a device'	
	space on the storage	space on the storage	Controls that use a map		access to a specific	
-	devices:	devices:	to permit a particular		subset of storage	
buffer, the supervisor			device to read data from	· · · · · ·	devices or sections of	
	"Provides controls	Intrinsic:	or write data to a		single storage device	
o map between devices	which limit a device's		particular storage space		according to a map."	
- 1	access to a specific	Fig. 3, Col. 3, 11. 7-59,	assigned to the device,			
	subset of storage	Col. 4, 11. 7-27, 33-35,	and to prevent the			
	devices or sections of a	40-43, 48-50, 50-53	device from reading			
	single storage device	(Fig. 3 shows	data to or writing data			
	according to a map."	embodiment in which	from storage space			
space on the storage	8	all workstations can	assigned to other			
devices and to process		access global storage	devices.			
data in the buffer to		device).				
interface between the			· · ·			
first controller and the		Col. 4, II. 7-11 ("access				
second controller to		controls" applies to				
allow access from		shared storage).				
					1	

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	Spe	cial Master's Proposed Co	onstruction of Disputed Ter	rms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
devices.		July 22, 2005 Reply to			
		Office Action at 13-14,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		(discussion during			
		reexamination, that the			
		"access controls" feature			
		includes the concept of			
		allowing multiple			
		devices to have access			
		to shared storage).			
	-	Extrinsic:			
	-				
		Chaparral Markman			
		Order at 3-7, 15, Fore			
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. L			
		(Crossroads'			
		construction parallels			
		historic construction;			
	-	the invention			
		contemplates using			
		access controls for an			
		entire storage device as			
		well as shared storage;			
		Court has rejected a			
		construction in which a			
		particular subset of			
		storage could only be			
		accessed by a single			
		workstation).			
		monstation <i>j</i> .			
		Comments on Statement			
		of Reasons for			
		Patentability and/or			
		i alcinautiny allu/or			

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Confirmation, Fore			
		Decl. ISO Pl.'s Cl.			
		Const. Br., Ex. I			
		(patentees expressly			
		disagreed with any			
		characterization of the			
		claims that were			
		"inconsistent with the			
		claim language,			
		specification or prior			
		prosecution history.").			
and a supervisor unit	Workstations:	Workstations:			"A computer having
coupled to the first					input/output devices
controller, the second	"A remote computing	Intrinsic:			intended for use by
controller and the	device that connects to				humans."
buffer, the supervisor	the first (Fibre Channel)	Col. 4, 11. 39-41			
unit operable:	transport medium, and	(specification defines			
o map between devices	may consist of a	workstation as a			
connected to the first	personal computer."	"computing device").			
transport medium and					
the storage devices, to		Extrinsic:			
implement the access					
controls for storage		Chaparral Markman			
space on the storage		Order at 16, Fore Decl.			
devices and to process		ISO Crossroads' Cl.			
data in the buffer to		Const. Br., Ex. L			
interface between the		(Crossroads'			
first controller and the		construction consistent			
second controller to		with historic			
allow access from		construction); Dot Hill			
workstations to		Stipulated Definitions of			
storage devices.		Claim Terms at 2, Fore			
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. M			
		(parties in <i>Dot Hill</i>			
		litigation adopted			
		Crossroads' proposed		2.2	

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		construction); <u>Microsoft Press</u> <u>Computer Dictionary</u> 368 (1991), Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. Z ("workstation" is understood to be a broad term in the art).			
Claim 11: A method for providing	Device:	Device:	Device:	See claim 1, supra.	No Construction
irtual local storage on	Device.	Device.	Device.	see claim 1, supra.	Necessary.
emote storage devices	"Computing device that	Intrinsic:	Computer.		
onnected to one	issues storage access				
ransport medium to levices connected to	requests."	Claim 1, Col. 9, 11. 27-			
nother transport		30 ("devices" refers to the devices that make			
nedium, comprising:		requests and are allowed			
		access to storage			
		devices).			
		Col. 1, 11. 36-37; Col. 2,			
		11. 4-5; Col. 4, 11. 55-56;			
		Col. 8, 11. 65-68 (the			
		specification describes			
		the devices that make			
		requests to access the			
		storage devices as			
		"computing devices").			
		Col. 1, ll. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such server data, the access is			
		much slower than access			
	•			· · ·	I .
			80		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		to data on a local storage device ").			
		Claim 3, Col. 9, ll. 37- 39 (principles of claim differentiation require "devices," as a group, must necessarily be broader than			
		"workstations").			
		Col. 6, ll. 31-41, 46-56 (the specification describes "servers" as a			
		type of computing device that can make storage access requests).			
		Abstract, Col. 1, ll. 21- 24, ll. 36-37, ll. 53-56; Col. 2, ll. 4-6; Col. 3, ll.			
		3-6, 41-43; Col. 4, II. 38-42, II. 55-56 Col. 6, II. 45-55; Col. 8, II. 65-			
		68 ("devices" is used broadly to refer to various computing			
		devices such as workstations, input/output devices,			
		"initiator" and "target" devices).			
		April 6, 2005 Reply to Office Action at 8, 10, 12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		Cl. Const., Ex. E; July			
		22, 2005 Reply to			
		Office Action at 7-15,			
		21-23, 27-29, 32, 33,			
		35-37, 39, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		F ("Device" is used over			
		ninety times in the	and the second second second		
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
		1			
		Extrinsic:			
	· · · · · · · · · · · · · · · · · · ·				
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would	· · · · · ·		
		understand that in the			
		embodiments at Col. 6,			
		II. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			
		(4 th ed. 1995), Fore			
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			

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Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		electromechanical			
		contrivance or			
		appliance. Commonly			
		used in reference to		· .	
		peripherals such as			
		printers, CRTS and disk			
		drives").			
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8,			
		2011 (Defendants'			
		counsel agreeing that			
		the defining			
		characteristic of a			
		device is that it is the			
		thing that issues storage			
		requests).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running		-	
		administrative software			
		that controls access to			
		the network and its			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		resources, such as			
		printers and disk drives,		· · · · · ·	
		and provides resources	and the second second second		· · · · · · · · · · · · · · · · · · ·
		to computers			
		functioning as			and the second sec
		workstations on the			
		network").			
		Special Master's Report			
		at 22, Dot Hill			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			· .
		(Court previously		-	
		construed "storage			
		router" as "a data			
		transmitting device that			
		allows users to integrate			
		different servers or			
		workstations into a			
		storage network").			
				~	
terfacing with a first	Implements access	Implements access	Access controls:	See claim 1, supra.	"Provides controls
transport medium;	controls for storage	controls for storage			which limit a device'
terfacing with a	space on the storage	space on the storage	Controls that use a map		access to a specific
second transport	devices:	devices:	to permit a particular		subset of storage
medium;			device to read data from		devices or sections of
apping between	"Provides controls	Intrinsic:	or write data to a		single storage device
devices connected to	which limit a device's		particular storage space		according to a map."
the first transport	access to a specific	Fig. 3, Col. 3, Il. 7-59,	assigned to the device,		
medium and the	subset of storage	Col. 4, 11. 7-27, 33-35,	and to prevent the		
storage devices and	devices or sections of a	40-43, 48-50, 50-53	device from reading		
that implements	single storage device	(Fig. 3 shows	data to or writing data		
access controls for	according to a map."	embodiment in which all workstations can	from storage space		
storage space on the storage devices; and			assigned to other devices		
storage uevices, and		access global storage device).	uevices		
			[• · · · · · · · · · · · · · · · · · · ·		
		Col. 4, 11. 7-11 ("access			
· · · · · · · · · · · · · · · · · · ·	<u> </u>		L	·	· · · · · · · · · · · · · · · · · · ·
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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		controls" applies to shared storage).			
		July 22, 2005 Reply to			
		Office Action at 13-14,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		(discussion during		· · · · · · · · · · · · · · · · · · ·	
		reexamination, that the			
		"access controls" feature			
		includes the concept of			
		allowing multiple			
		devices to have access			
		to shared storage).			
		Extrinsic:			
		Chaparral Markman			
		Order at 3-7, 15, Fore			
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. L			
		(Crossroads'			
		construction parallels			
		historic construction;			
		the invention			
		contemplates using			
		access controls for an			
		entire storage device as			
		well as shared storage;			
		Court has rejected a			
		construction in which a			
		particular subset of			
		storage could only be			
		accessed by a single			
		workstation).			
		1 · · · · · · · · · · · · · · · · · · ·			

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	Spe	cial Master's Proposed Co	onstruction of Disputed Te	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Comments on Statement of Reasons for Patentability and/or			
		Confirmation, Fore Decl. ISO Pl.'s Cl. Const. Br., Ex. I (patentees expressly			
		disagreed with any characterization of the claims that were			
		"inconsistent with the claim language, specification or prior prosecution history.").			
allowing access from	Allowing access from	Allowing access from	Allowing access to	See claim 1, supra.	"Permit or deny
devices connected to	devices to the	devices to the	the storage devices		access using the
the first transport	storage devices using	storage devices using	using native low level,		NLLBP of the Virtu
medium to the	native low level, block	native low level, block	block protocols:		
storage devices using	protocols:	protocols:			Local Storage witho
native low level,		P	Permitting reading and		involving a translati
block protocols.	"Permit or deny reading	Intrinsic:	writing of data in the		from high level
bisen protocols.	or writing of data using		native low level, block		network protocols o
	the NLLBP of the	Fig. 1, Col. 1, 11. 49-54;	protocol of the storage		file system protocol
	Virtual Local Storage	Col. 3, 11. 17-23 (the	device, without		to a native low level
	without involving a	"storage router" of the	involving network		block protocol
	translation from a high	invention is contrasted	servers, Ethernet		request."
	level file system	with a "network server"	networks, higher-level		request
	command to a native	that allowed access to	protocols such as		
	low level, block	storage devices by	TCP/IP, Ethernet		
	protocol request."	translating high level	protocols, network		
	Frances and another	file system commands	protocols or file system		
		of the "network	protocols, or translation		
		protocol" into low level	from one protocol to		
		requests (i.e., NLLBP)	another.		
		and sending the NLLBP			
		to the physical storage			
		devices).		1	

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			onstruction of Disputed Terr		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Claim 1, Col. 9, ll. 13-			
		30 (storage router			
		"allow[s] access from			
		devices connected to the			
		first transport medium			
		to the storage devices			
		using native low level,			
		block protocols"			
		(emphasis added); the			
		storage router,			
		specifically, the	and the second		
		supervisor unit within			
		the storage router,			
		"uses" the NLLBP to			
		permit or enable access).			
		Col. 4, 11. 7-47			
		(invention of patents-in-			
		suit provides "virtual			
		local storage" that			
		appears to a workstation			
		as local storage, and			
		appears to have the			
		same characteristics of			
		local storage).		-	
		Col. 4, 11. 44-57 ("virtual			
		local storage" is			
		"provided" by the			
		storage router in a			
		manner that is			
		transparent to the			
		devices requesting			
		storage access).			
		3,-			
		Col. 5, Il. 11-17, Il. 24-			

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			onstruction of Disputed Te		~
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		27 (supervisor unit			
		within the storage router			
		processes NLLBP			
		requests from the			
		devices to access			
		permitted storage).			
	· · ·	Abstract; Col. 2, ll. 12-			
		15, 17-20, 24-27; Col. 3,			
		ll. 59-63; Col. 3, ll. 51-			
		53; Col. 4, ll. 2-6; Col.			
		5, 11. 1-5; Col. 9, 11. 28-			
		31; Col. 10, 11. 9-11			
		(specification discloses			
		that NLLBPs are used			
		by, and at, the storage			
		router to allow access).			
		Col 6 11 22 41 46 56			
		Col. 6, ll. 33-41, 46-56 (specification describes			
		two embodiments			
		wherein "devices"			
		making the storage			
		access request are			
		servers).			
		Col. 1, Il. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local			
		storage device ").			
		Claim 3, Col. 9, 11. 37-		· · · · · · · · · · · · · · · · · · ·	

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39 (principles of o differentiation rec "devices," as a gro- must necessarily b broader than "workstations"). Col. 3, ll. 17-23 (1 "network protoco by the prior art "network servers" allow access to st devices is a proto that includes a hig level file system command that mu	uire pup, e he "used to prage col h	
"devices," as a gr must necessarily b broader than "workstations"). Col. 3, ll. 17-23 (1 "network protoco by the prior art "network servers" allow access to st devices is a proto that includes a hig level file system	he "used to prage col h	
must necessarily to broader than "workstations"). Col. 3, ll. 17-23 (1 "network protoco by the prior art "network servers" allow access to st devices is a proto that includes a hig level file system	he "used to prage col h	
broader than "workstations"). Col. 3, ll. 17-23 (1 "network protoco by the prior art "network servers" allow access to st devices is a proto that includes a hig level file system	he "used to prage col h	
"workstations"). Col. 3, ll. 17-23 (1 "network protoco by the prior art "network servers" allow access to st devices is a proto that includes a hig level file system	" used to prage col h	
Col. 3, ll. 17-23 ("network protoco by the prior art "network servers" allow access to st devices is a proto that includes a hig level file system	" used to prage col h	
"network protoco by the prior art "network servers" allow access to st devices is a proto that includes a hig level file system	" used to prage col h	
"network protoco by the prior art "network servers" allow access to st devices is a proto that includes a hig level file system	" used to prage col h	
by the prior art "network servers" allow access to st devices is a proto that includes a hig level file system	to prage col h	
"network servers" allow access to st devices is a proto that includes a hig level file system	orage col h	
allow access to st devices is a proto that includes a hig level file system	orage col h	
devices is a proto that includes a hig level file system	col h	
that includes a higher that includes a higher the system	h	
level file system		
	st be	
translated into low	/ level	
storage requests).		
April 6, 2005 Rep		
Office Action at		
Fore Decl. ISO	10-11,	
Crossroads' Post-	Hr'o	
Cl. Const. Br., Ex		
July 22, 2005 Rep		
Office Action at		
Fore Decl. ISO		
Crossroads' Post-	Hr'g	
Cl. Const. Br., Ex	\mathbf{F} = \mathbf{F} = \mathbf{F}	
(Crossroads		
distinguished Peta		
Spring and Oeda		
having a server th		
provided controlle		
access to storage		
required to transla high level file sys		

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		commands into low			
		level commands in order			
		to send the NLLBP to			
		the storage devices).			
		April 6, 2005 Reply to			
		Office Action at 8-11,			
		19, 22-23, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		E; July 22, 2005 Reply			
		to Office Action at 11-			
		17, 21-28, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		F (showing that			
		Crossroads did not make			
		a sweeping disclaimer			
		of any use of a "network			
		server"; Crossroads			
		distinguished its			
		invention from Oeda,			
		Petal and Spring based			
		on the requirement that			
		the "network server"			
		that provided controlled			
		access to storage was			
		required to translate the			
		high level file system		2	
		command into low level			
		commands in order to			
		send the NLLBP to the			
		storage device, not the			
		use of Ethernet			
		networks, Ethernet or			
		TCP/IP).			
				· · · · ·	
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Special Master's Proposed Construction of Disputed Terms							
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction		
		Col. 2, ll. 17-20; Col. 5, ll. 19-22, 50-57, 60-63;					
		Col. 6, 11. 32-37; '147					
		Patent, Claim 1, Col. 9,					
		11. 28-32 (disclosing and					
		claiming embodiments using Fibre Channel; the					
		inclusion of "without					
		involving network					
		protocols" according to					
		Defendants' expert					
		would prohibit the use					
		of Fibre Channel despite					
		the fact that these are					
		express embodiments).					
		Cal 5 11 52 56 (Eihan					
		Col. 5, ll. 53-56 (Fibre Channel is a protocol					
		used for					
	-	communications over					
		"Fibre Channel based					
		networks").					
		Extrinsic:					
		March 7, 2011 Supp.					
		Decl. of John Levy, Ph.D., ¶¶ 9-13 (data					
		transfer in networks best					
		understood as having					
		layers; when TCP/IP					
		and Ethernet protocols					
		were used by prior art					
		systems to transport					
		high level network file					
		system requests, a					
		network server would					

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		translate such requests		· · · · · · · · · · · · · · · · · · ·	
		into low level requests			
		to access storage); ¶¶6-7			
		(prior art "server" described in patents-in-			
		suit was specifically a			
		device that allowed			
		access between the			
		device requesting			
		"access to data" and the			
		storage devices using			
		something called a			
		"network protocol"; such "servers"			
		implemented file			
		systems and received			
		high level file system			
		protocols from devices			
		requesting data access).			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶4 (person of ordinary skill would			
		understand that the			
		specification discloses a			
		server that sends			
		requests for storage			
		access to a storage			
		router using NLLBP).			
		Mar. 11, 2011 24 Same			
		May 11, 2011 3d Supp. Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
· · ·		storage).		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
			92		
			· · · · ·		4

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
				· · · ·	
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a	in the second		
		computer running			
		administrative software	-		
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers			
		functioning as			
		workstations on the			
		network").			
		Special Master's Report			
		at 22, Dot Hill			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		(Court previously			
		construed "storage			
		router" as "a data			·
		transmitting device that			
		allows users to integrate			·
		different servers or			
		workstations into a			
		storage network").			
	· ·	Hr'g Tr. 76:4-10, 82:20-			
		23, March 8, 2011 (in			
		hypothetical network of			
	l				L
			93		

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Graphic 2 of			
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-			
		Hr'g Cl. Const. Br., Ex.			
		J) the workstation sends			
		high level file systems			
		commands to network			
		server); <i>Id.</i> at 200:2-5,			
		201:22-24, 202:24-			
		203:3 (Defendants			
		expressly stated that a			
		"device" is a "computer"			
		that is both "reading or			
		writing data from a			
		storage device" and			
		sending NLLBPs and			
		the only "device" that			
		does so in Graphic 2,			
		shown in Crossroads'			
		Post-Hearing Brief is			
		the "network server").			
		Crossroads' Concise			
		Statement of			
		Infringement, Dot Hill			
		Litigation (Case No. A-			· · · · ·
		03-CV-754 SS), Fore			
		Decl. ISO Pl.'s Post-			
		Hr'g Cl. Const. Br., Ex.			
		H; April 28, 2011 2d			
		Supp. Decl. of John			
		Levy, Ph.D., ¶5			
		(accused devices in <i>Dot</i>			
		Hill litigation were			
		designed to be used in			
		hypothetical system			
			94		

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	Spe	cial Master's Proposed Co	onstruction of Disputed Ter	ms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		shown in Graphic 2 of		· · · · · · · · · · · · · · · · · · ·	
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-			
		Hr'g Cl. Const. Br., Ex.			
		J)).			
		Hr'g Tr. at 81:12-15,			
		March 8, 2011 (all			
		parties agree that the			
		Petal, Spring and Oeda references disclose			
		systems with a "server"			
		interposed between			· · · · · · · · · · · · · · · · · · ·
		workstations and			
		storage devices); Id. at			
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants			
		agree that the			
		"translation"			
		distinguished by			
		patentees during			
		reexamination was from			
		high level file system			
		commands into NLLBP			
		requests); Id. at 89:11-			
		16 (parties agree that			
		"allowing access			
		using NLLBP" occurs			
		without a translation			
		from a high level file			
		system command to a			
		NLLBP request); <i>Id.</i> at 91:14-16, 92:1-5, 152:4-			
		7 (Defendants concede			
	1	that the "network			
		protocols" described in			
		protocois described In			1

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Crossroads' Proposed Construction	Crossroads' Evidence the Oeda, Petal and Spring references included file system commands thus, including "without	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
	Spring references included file system commands thus,			
	involving network protocols" is superfluous to "without involving a translation from a high level file system command to a native low level block protocol request.")			
	April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶7 (CIFS, NFS and FTP are network protocols).			
	March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses term "network protocol" broadly such that it would include Fibre Channel).			
	April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶3 (a workstation gets "access to the local storage device through native low level block protocols").			
		 involving a translation from a high level file system command to a native low level block protocol request.") April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶7 (CIFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses term "network protocol" broadly such that it would include Fibre Channel). April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶3 (a workstation gets "access to the local storage device through native low level block 	 involving a translation from a high level file system command to a native low level block protocol request.") April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶7 (CIFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses term "network protocol" broadly such that it would include Fibre Channel). April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶3 (a workstation gets "access to the local storage device through native low level block protocols"). 	 involving a translation from a high level file system command to a native low level block protocol request.") April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶7 (CIFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses term "network protocol" broadly such that it would include Fibre Channel). April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶3 (a workstation gets "access to the local storage device through native low level block protocols").

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		March 8, 2011 (Defendants agreed to remove "without involving Ethernet networks, Ethernet protocols, TCP/IP" from their proposed construction).March 7, 2011 Supp. Decl. of John Levy, Ph.D., ¶13 (Ethernet and TCP/IP			
		protocols are concerned only with delivery of messages). February 22, 2011 Decl. of John Levy, Ph.D., ¶36 (NLLBP "used" by the storage router to allow access is the			
		NLLBP sent to it from the device; this NLLBP is the NLLBP appropriate for the virtual local storage, not the NLLBP of the storage device storing the data).			
		Dictionary of Computer and Internet Terms 311 (6 th Ed. 1996), Fore Decl. ISO Pl.'s Cl. Const. Br., Ex. S (defining "native" as "1. designed for a specific hardware or software			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		environment (rather than			
		for compatibility with			
		something else)").	and the second		
		Stin Dofe of Cl Torme			
		Stip. Defs. of Cl. Terms, Fore Decl. ISO Pl.'s			
		Post-Hr'g Cl. Const. Br.,			
		Ex. I (parties agree that			
		"virtual local storage" is			
		"storage space, in a		· · · · · ·	
		storage device that is			
		remotely connected to			
		an initiator device to be			
		within or locally			
		connected to the			
		initiator device").			
		April 28, 2011 2d Supp.	al de la companya de		
		Decl. of John Levy,			
		Ph.D., ¶6 (under Defendants'			
		construction, a protocol			
		used for communication			
		over "Fibre Channel			
		based networks" would			
		be a network protocol).			
					•
llowing access from	Native low level block	Native low level block	Native low level block	See claim 1, supra.	"A set of rules or
devices connected to	protocol ("NLLBP"):	protocol:	protocol:		standards that enable
the first transport					computers to
medium to the storage	Native:	Intrinsic:	Does not need to be		exchange information
devices using native	"Designed for use with		separately construed;		and do not involve t
low level, block	a specific type of	Abstract, Col. 1, 11. 44,	alternatively, may be		overhead of high lev
protocols.	storage device."	Col. 2, 11. 13-14, 26; Col. 3, 11. 17, 22-23, 53,	construed with reference to individual		protocols and file
	Block Protocol:	63; Col. 4, 11. 4-5, 25;	terms as follows:		systems typically
	"A set of rules or	Col. 5, 1. 3; Claim 1,			required by network
		Con 5, 1, 5, Clumin 1,			servers."
		•	98		

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	Spe	cial Master's Proposed C	onstruction of Disputed Te	rms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
	 standards for exchanging information with a block-oriented storage device." Low Level Protocol: "A set of rules or standards that enable computers to exchange information without involving high level file system protocols." Or, in the alternative: Native Low Level Block Protocol: "A set of rules or standards designed for exchanging information with a block-oriented storage device without involving high level file system protocols." 	Col. 9, II. 29-30; Col. 10, I. 10; Col. 10, II. 48- 49 (specification consistently uses "NLLBP" as a single term). Fig. 1; Col. 3, II. 20-23 (network server shown in Fig. 1 communicates with storage devices via NLLBPs even though the SCSI commands are sent by a network server). Fig. 1, Col. 1, II. 49-54; Col. 3, II. 17-23 (the "storage router" of the invention is contrasted with a "network server" that allowed access to storage devices by translating high level file system commands of the "network protocol" into low level requests (i.e., NLLBP) and sending the NLLBP to the physical storage devices). Claim 1, Col. 9, II. 13- 30 (storage router "allow[s] access from devices connected to the	Native:Designed for use with aspecific type of storagedevice.Low-level protocol:A set of rules orstandards that enablecomputers to exchangeinformation withoutinvolving networkservers, Ethernetnetworks, or higher-level protocols such asTCP/IP, Ethernetprotocols, networkprotocols or file systemprotocols.Block protocol:A set of rules orstandards forexchanging informationwith a block-orientedstorage device		

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			onstruction of Disputed Ter		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		to the storage devices			
		using native low level,			
		block protocols"			
		(emphasis added); the			
		storage router,			
	and the second	specifically, the			
		supervisor unit within			
		the storage router,			
		"uses" the NLLBP to			
		permit or enable access).			- · · ·
		Abstract; Col. 2, Il. 12-			
		15, 17-20, 24-27; Col. 3,			
		Il. 59-63; Col. 3, Il. 51-			
		53; Col. 4, 11. 2-6; Col.			
		5, 11. 1-5; Col. 9, 11. 28-			
		31; Col. 10, 11. 9-11			
		(specification discloses			
		that NLLBPs are used			•
		by, and at, the storage			
		router to allow access).			
					••
		Col. 6, ll. 33-41, 46-56			
		(specification describes			
		two embodiments		· · · ·	
		wherein "devices"			
		making the storage			
		access request are			
		servers).			
		Scivers).			
		April 6, 2005 Reply to			
		Office Action at 10-11,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. E;			
		July 22, 2005 Reply to	and the second		
		Office Action at 24-27,			

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Special Master's Proposed Construction of Disputed Terms							
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction		
		Fore Decl. ISO					
		Crossroads' Post-Hr'g					
		Cl. Const. Br., Ex. F					
		(Crossroads					
	· · ·	distinguished Petal,					
		Spring and Oeda as					
		having a server that					
		provided controlled					
		access to storage was					
		required to translate					
		high level file system					
		commands into low					
		level commands in order					
		to send the NLLBP to					
		the storage devices).					
		April 6, 2005 Reply to					
		Office Action at 8-11, 19, 22-23, Fore Decl.		· · · ·			
		ISO Crossroads' Post-					
		Hr'g Cl. Const. Br., Ex.					
		E; July 22, 2005 Reply					
		to Office Action at 11-					
		17, 21-28, Fore Decl.					
		ISO Crossroads' Post-					
		Hr'g Cl. Const. Br., Ex.					
		F (showing that					
		Crossroads did not make					
		a sweeping disclaimer		· · · ·			
		of <i>any</i> use of a "network					
		server"; Crossroads					
		distinguished its					
		invention from Oeda,					
		Petal and Spring based					
		on the requirement that					
		the "network server"	la de la companya de				
		that provided controlled	· · · · ·				

Special Master's Proposed Construction of Disputed Terms							
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction		
		access to storage was					
		required to translate the					
		high level file system					
		command into low level					
		commands in order to					
		send the NLLBP to the					
		storage device, not the					
		use of Ethernet					
		networks, Ethernet or TCP/IP).	and the second				
		ICP/IP).					
		Col. 2, 11. 17-20; Col. 5,					
		11. 19-22, 50-57, 60-63;					
		Col. 6, 11. 32-37; '147					
		Patent, Claim 1, Col. 9,					
		ll. 28-32 (disclosing and					
		claiming embodiments					
		using Fibre Channel; the					
		inclusion of "without					
		involving network					
		protocols" according to					
		Defendants' expert					
		would prohibit the use					
	· · ·	of Fibre Channel despite					
		the fact that these are					
		express embodiments).					
	-						
		Col. 5, ll. 53-56 (Fibre					
		Channel is a protocol					
		used for					
		communications over					
		"Fibre Channel based					
		networks").					
		Col 1 11 42 52 Col 2					
		Col. 1, ll. 42-53; Col. 3, ll. 16-24; Col. 5, ll. 1-5					
		(specification notes that		· · ·			
· · · · · · · · · · · · · · · · · · ·		(specification notes that					
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Special Master's Proposed Construction of Disputed Terms							
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction		
		NLLBPs do not involve			e children a contra		
		overhead of high level					
		network protocols or file					
		systems).					
		Col. 6, ll. 31-41, 46-56					
		(specification has two					
		distinct embodiments in	and the second				
		which the "devices"					
		making storage requests					
		are servers).					
		Extrinsic:					
	·	March 7, 2011 Supp.					
		Decl. of John Levy,					
		Ph.D., ¶2; March 7,					
		2011 Decl. of Brian Berg ¶42 (experts agree					
		that "NLLBP" is not a					
		term of art).					
		term of art).					
		Hr'g Tr. at 121:8-16,					
		March 8, 2011 (parties					
		agree that "NLLBP"					
		should be construed as a					
		single term, consistent					
		with use in					
		specification)					
		March 7, 2011 Supp.		an a			
		Decl. of John Levy,					
		Ph.D., ¶13 (Ethernet and					
		TCP/IP protocols are					
		concerned only with					
		delivery of messages).	e de la compañía de l				

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		March 7, 2011 Decl. of			
		Brian Berg ¶48 (a SCSI	· .		
		command would be a			
		low level command).			
		14. (A. 1997)			
		March 7, 2011 Decl. of			
		Brian Berg, ¶37 (states			
		that "low level" means	and particular second		
		"without involving			
		file system protocols.").		••••••••••••••••••••••••••••••••••••••	
		April 28, 2011 2d Supp.			
		Decl. of John Levy,	· · · · · ·		
		Ph.D., ¶4 (person of	· · · ·		
		ordinary skill would			
		understand that the			
		specification discloses a			
		server that sends			
		requests for storage			
		access to a storage router using NLLBP).			
		router using NLLBP).			
		Hr'g Tr. 76:4-10, 82:20-			
		23, March 8, 2011 (in			
		hypothetical network of			
		Graphic 2 of			
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-			
		Hr'g Cl. Const. Br., Ex.			
		J) the workstation sends			
		high level file systems			
		commands to network		,	
		server); Id. at 200:2-5,			
		201:22-24, 202:24-			
		203:3 (Defendants	the second s		
		expressly stated that a			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		"device" is a "computer"			
		that is both "reading or			
		writing data from a			
		storage device" and			
		sending NLLBPs and			
		the only "device" that			
		does so in Graphic 2,			
	· .	shown in Crossroads'			
		Post-Hearing Brief is			
		the "network server").			
		Crossroads' Concise			
		Statement of			
		Infringement, Dot Hill			
		Litigation (Case No. A-			
		03-CV-754 SS), Fore			
		Decl. ISO Pl.'s Post-			
		Hr'g Cl. Const. Br., Ex.			
		H; April 28, 2011 2d			
		Supp. Decl. of John			
		Levy, Ph.D., ¶5			
		(accused devices in Dot			
		Hill litigation were			
		designed to be used in			
		hypothetical system			
		shown in Graphic 2 of Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-			
		Hr'g Cl. Const. Br., Ex.			
		J)).			
		Hr'g Tr. at 81:12-15,			
		March 8, 2011 (all			
		parties agree that the			
		Petal, Spring and Oeda			
		references disclose		<u> </u>	
			105		
			105		
	1				

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		systems with a "server"			
		interposed between			
		workstations and			
	•	storage devices); Id. at	 A state of the sta		
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants			
		agree that the			
		"translation"			
		distinguished by			
		patentees during			
		reexamination was from			· · · ·
		high level file system			
		commands into NLLBP			
		requests); Id. at 89:11-			
		16 (parties agree that			
		"allowing access			
		using NLLBP" occurs			
		without a translation			
		from a high level file			
		system command to a			
		NLLBP request); Id. at			
		91:14-16, 92:1-5, 152:4-			
		7 (Defendants concede			
		that the "network			
		protocols" described in			
		the Oeda, Petal and			
		Spring references			
		included file system			
		commands thus,			
		including "without			
		involving network			
		protocols" is			
		superfluous to "without			
		involving a translation			
		from a high level file			
		system command to a			
		native low level block			
···· · · · · · · · · · · · · · · · · ·	1				
		1	106		

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Special Master's Proposed Construction of Disputed Terms									
Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's				
Language	Construction	Evidence	Construction	Evidence	Construction				
		protocol request.")			· · · ·				
		April 28, 2011 2d Supp.							
		Decl. of John Levy,							
		Ph.D., ¶7 (CIFS, NFS							
		and FTP are network							
		protocols).							
		March 7, 2011 Decl. of							
		Brian Berg, ¶37							
		(Defendants' expert uses							
		term "network protocol"							
		broadly such that it							
		would include Fibre							
		Channel).							
		April 28, 2011 2d Supp.							
		Decl. of John Levy,							
		Ph.D., ¶6 (under							
		Defendants'							
		construction, a protocol	and the second						
		used for communication							
		over "Fibre Channel							
		based networks" would		•					
		be a network protocol).							
		be a network protocory.							
		February 22, 2011 Decl.							
		of John Levy, Ph.D., ¶¶							
		31, 33 (NLLBPs do not							
		have the overhead							
		associated with the use							
		of higher level protocols							
		to access storage); <i>Id.</i> ¶							
		34 (specification							
		describes network							
		servers communicating with storage using							

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		NLLBPs).			
Claim 12:				1	
The method of claim 11, 1	Device:	Device:	Device:	See claim 1, supra.	No Construction
wherein mapping					Necessary.
between devices '	"Computing device that	Intrinsic:	Computer.		
connected to the first	issues storage access			· · ·	
transport medium and I	requests."	Claim 1, Col. 9, 11. 27-			
the storage devices	-	30 ("devices" refers to			
includes allocating		the devices that make			
subsets of storage space		requests and are allowed			
to associated devices		access to storage			
connected to the first		devices).			
transport medium,					
wherein each subset is		Col. 1, 11. 36-37; Col. 2,			
only accessible by the		11. 4-5; Col. 4, 11. 55-56;			
associated device		Col. 8, 11. 65-68 (the			
connected to the first		specification describes			
transport medium.		the devices that make			
		requests to access the			
		storage devices as			
		"computing devices").			
			i de la constante de		
		Col. 1, ll. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local			
		storage device ").			
		Claim 3, Col. 9, 11. 37-			
		39 (principles of claim			
		differentiation require	1		
		"devices," as a group,			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, ll. 31-41, 46-56			
		(the specification			·
		describes "servers" as a			
	· · · · ·	type of computing			
		device that can make			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, ll.			
		38-42, 11. 55-56 Col. 6,			
		11. 45-55; Col. 8, 11. 65-			
		68 ("devices" is used			
		broadly to refer to	-		
		various computing			
		devices such as			
		workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to			
		Office Action at 7-15,			
		21-23, 27-29, 32, 33,			
		35-37, 39, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
			109		

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		F ("Device" is used over ninety times in the reexamination prosecution history to refer to types of devices capable of making requests for storage).			
		Extrinsic:			
		April 28, 2011 2d Supp. Decl. of John Levy,			
		Ph.D., ¶ 4 (one of ordinary skill would understand that in the embodiments at Col. 6, ll. 33-41; 46-56, it is the			
		server that sends requests for storage access to the storage router using NLLBP).			
		<u>The McGraw-Hill</u> Illustrated Dictionary of			
		Personal Computers 126 (4 th ed. 1995), Fore Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. W (defining device as "a mechanical, electrical or			
		electromechanical contrivance or appliance. Commonly			
		used in reference to peripherals such as printers, CRTS and disk			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8,	and the second		
		2011 (Defendants'			
		counsel agreeing that			
		the defining			
		characteristic of a			
		device is that it is the			
		thing that issues storage			
		requests).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network server" is a server that			
		can request access to			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		<u>Dictionary</u> 430 (30 Ed. 1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers			
		functioning as			
		workstations on the			
		network").			

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Special Master's Report at 22, <i>Dot Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that allows users to integrate different servers or workstations into a storage network").			
Claim 13:					
The method of claim 12, wherein the devices onnected to the first cansport medium omprise workstations.	Device: "Computing device that issues storage access requests."	Device: Intrinsic: Claim 1, Col. 9, 11. 27-	Device: Computer.	See claim 1, supra.	No Construction Necessary.
omprise workstations.	Tequesis.	30 ("devices" refers to the devices that make requests and are allowed access to storage devices).			
		Col. 1, ll. 36-37; Col. 2, ll. 4-5; Col. 4, ll. 55-56; Col. 8, ll. 65-68 (the specification describes the devices that make requests to access the storage devices as "computing devices").			
		Col. 1, ll. 57-60 ("from the perspective of a			

	Special Master's Proposed Construction of Disputed Terms								
Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's				
Language	Construction	Evidence workstation, or other computing device, seeking to access such server data, the access is much slower than access to data on a local storage device ").	Construction	Evidence	Construction				
		Claim 3, Col. 9, ll. 37- 39 (principles of claim differentiation require "devices," as a group, must necessarily be broader than "workstations").							
		Col. 6, ll. 31-41, 46-56 (the specification describes "servers" as a type of computing device that can make storage access requests).							
		Abstract, Col. 1, 11. 21- 24, 11. 36-37, 11. 53-56; Col. 2, 11. 4-6; Col. 3, 11. 3-6, 41-43; Col. 4, 11. 38-42, 11. 55-56 Col. 6, 11. 45-55; Col. 8, 11. 65- 68 ("devices" is used							
		broadly to refer to various computing devices such as workstations, input/output devices, "initiator" and "target" devices).							

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	Spe	cial Master's Proposed Co	onstruction of Disputed Te	rms	:
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Construction	Evidence	Construction		
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to			
		Office Action at 7-15,			
*		21-23, 27-29, 32, 33,			
		35-37, 39, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex. F ("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).	-		
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would understand that in the			
		embodiments at Col. 6,			
		11. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			

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Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		(4 th ed. 1995), Fore			
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or			
		appliance. Commonly			
		used in reference to			
		peripherals such as			
		printers, CRTS and disk			
		drives").			
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8,			
	· · ·	2011 (Defendants'			
		counsel agreeing that			
		the defining			
		characteristic of a			
		device is that it is the			
		thing that issues storage			
		requests).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
		storage).			
		Mianagaft Committee			
		Microsoft Computer Dictionary 430 (3d Ed.			
		<u>Dictionary</u> 430 (30 Ed. 1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		network (LAN), a			
		computer running	and the second		
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers			
		functioning as			
		workstations on the			
		network").			
		Special Master's Report	· · · · · · · · · · · · · · · · · · ·		
		at 22, Dot Hill			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		(Court previously			
		construed "storage			
		router" as "a data			
		transmitting device that			
		allows users to integrate			
		different servers or			
		workstations into a			
		storage network").			
he method of claim 12,	Workstations:	Workstations:	Workstation:	See claim 3, supra.	"A computer having
herein the devices					input/output device
onnected to the first	"A remote computing	Intrinsic:	A computer including		intended for use by
ansport medium	device that connects to		human input/output		humans."
omprise workstations.	the first (Fibre Channel)	Col. 4, 11. 39-41	devices such as a		
	transport medium, and	(specification defines	display and keyboard		
	may consist of a	workstation as a	and designed for use by		
	personal computer."	"computing device").	one person at a time.		
		Extrinsic:			
			2 · · · · · · · · · · · · · · · · · · ·		
	-				•
		· 같은 한 같은 것 같은 것 같이 ? ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^	116		

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Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's	
Language	Construction	Evidence	Construction	Evidence	Construction	
		Chaparral Markman				
		Order at 16, Fore Decl.				
		ISO Crossroads' Cl.				
		Const. Br., Ex. L				
		(Crossroads'				
		construction consistent	-			
		with historic				
		construction); Dot Hill				
		Stipulated Definitions of				
		Claim Terms at 2, Fore				
		Decl. ISO Crossroads'				
		Cl. Const. Br., Ex. M				
		(parties in Dot Hill				
		litigation adopted	the second second			
		Crossroads' proposed				
		construction);				
		Microsoft Press				
		Computer Dictionary				
		368 (1991), Fore Decl. ISO Crossroads' Cl.				
		· · · · · · · · · · · · · · · · · · ·				
		Const. Br., Ex. Z ("workstation" is				
		understood to be a broad				
		term in the art).				
aim 14:		L				
e method of claim 12,	[No claim term at issue]		[No claim term at issue]			
erein the storage				and the second		
vices comprise hard	and the second			Contraction of the second s	and the second	
k drives.	and the second			A.L.L. Superior and the second s		

•

TABLE OF CITATION ABBREVIATIONS

Abbreviation	Document(s)	Date	Exhibit No. or Range
	Joint M	aterials	
Hrg. Tr.	Transcript of <i>Markman</i> Hearing before the Honorable Karl Bayer, Jr.	3/08/2011	
Jt. Ex.	Markman Hearing Joint Exhibits		Jt. Ex. 101-114
	Plaintiff's Pleadi	ngs and Exhibits	
Pl. Br.	Plaintiff Crossroads Systems Inc.'s Markman Brief	2/22/2011	
Pl. Br. Ex.	Exhibits to Declaration of Elizabeth Brown Fore dated 2/22/2011 (in support of Plaintiff's brief)		A-FF
Levy Decl.	Declaration of John Levy, Ph.D.	2/22/2011	
Levy Ex.	Exhibits to Declaration of John Levy, Ph.D.		A-F
Levy Supp.	Supplemental Declaration of John Levy, Ph.D.	3/07/2011	
Levy Supp. Ex.	Exhibits to Supplemental Declaration of John Levy, Ph.D.		A-L
Pl. Hrg. Ex.	Crossroads' Markman Hearing Exhibits		P-1 to P-37
Pl. PHB	Plaintiff Crossroads Systems Inc.'s Post-Hearing Markman Brief	4/29/2011	
Pl. PHB Ex.	Exhibits to Declaration of Elizabeth Brown Fore dated 4/29/2011 (in support of Plaintiff's post- hearing brief)		A-J
Levy 2 nd Supp.	Second Supplemental Declaration of John Levy, Ph.D.	4/28/2011	

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Abbreviation	Document(s)	Date	Exhibit No. or Range
Levy 2 nd Supp. Ex.	Exhibits to Supplemental Declaration of John Levy, Ph.D.		A-D
Pl. RPHB	Plaintiff Crossroads Systems Inc.'s Reply Post- Hearing Brief	5/13/2011	
· · · · · · · · · · · · · · · · · · ·			
9 	Defendants' Pleadi	ngs and Exhibits	
Def. Br.	Brief in Support of Defendants' Proposed Claim Constructions	2/22/2011	
Def. Ex.	Exhibits to Declaration of George W. Webb III (to accompany Defendants' brief) (also entered as Defendants' hearing exhibits)	2/22/2011	Def. Ex. 1-22
Berg Decl.	Declaration of Brian A. Berg	3/07/2011	
Berg App.	Appendices to Declaration of Brian A. Berg		Berg. App. A-J
Def. PHB	Defendants' Post-Hearing Brief on Issues of Claim Construction	4/29/2011	
Def. PHB Ex.	Exhibits to Declaration of George W. Webb III (to accompany Defendants' brief)	4/29/2011	Def. Ex. 23-24
Def. RPHB	Defendants' Reply Post-Hearing Brief on Issues of Claim Construction	5/13/2011	
	Frequently Cite	d Documents	
'035 patent	U.S. Pat. 6,425,035	7/23/2002	Jt. Ex. 101
'147 patent	U.S. Pat. 7,051,147	5/23/2006	Jt. Ex. 102
First Reexam Reply	'035 file history, Reply to Office Action Under <i>Ex Parte</i> Reexamination Dated 2/07/2005	4/06/2005	Def. Ex. 6

Abbreviation	Document(s)	Date	Exhibit No. or Range
Second Reexam Reply	⁶⁰³⁵ file history, Reply to Office Action Under <i>Ex Parte</i> Reexamination Dated 5/24/2005	7/22/2005	Def. Ex. 7
'147 Reply	[•] 147 file history, Reply to Office Action Dated 1/27/2005	7/27/2005	Def. Ex. 9
Horst Decl.	Declaration of Robert W. Horst and exhibits in <i>Crossroads v. Postvision</i> (W.D. Tex. case 1:10- cv-00652-SS)	5/20/2010	Def. Ex. 16

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SPECIAL MASTER'S RECOMMENDED CONSTRUCTIONS PATENT NO. 7,051,147

Term	Special Master's Recommended Construction
Device	No Construction Necessary.
Configuration	No Construction Necessary.
Access control(s)	"Controls which limit a device's access to a specific subset of storage devices or sections of a single storage device according to a map."
Allow accessto the remote storage devices using native low level, block protocol.	"Permit or deny access using the NLLBP of the Virtual Local Storage without involving a translation from high level network protocols or file system protocols to a native low level block protocol request."
Initiator Device	"A device that issues requests for data or storage."
Native low level block protocol (NLLBP)	"A set of rules or standards that enable computers to exchange information and do not involve the overhead of high level protocols and file systems typically required by network servers."
Workstation	"A computer having input/output devices intended for use by humans."
Control Access	"To limit a device's access to a specific subset of storage devices or sections of a single storage device according to a map."

		Special Master's Proposed	Construction of Disputed	Terms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		United States Pat	ent No. 7,051,147	•	
Claim 1:					
A storage router for	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
providing virtual local				2	Necessary.
storage on remote	"Computing device that	Intrinsic:	Computer.		
storage devices to a	issues storage access				
device, comprising:	requests."	Claim 1, ¹ Col. 9, 11. 27-	and the second second second second		
u buffer providing		30 ("devices" refers to			
memory work space	· .	the devices that make			
for the storage router; a		requests and are allowed			
first Fibre Channel		access to storage			
controller operable to		devices).			
connect to and					
interface with a first		Col. 1, 11. 36-37; Col. 2,			
Fibre Channel		11. 4-5; Col. 4, 11. 55-56;			
transport medium;		Col. 8, 11. 65-68 (the			
		specification describes			
		the devices that make			
		requests to access the	· · ·		
		storage devices as			
		"computing devices").			
		Col. 1, 11. 57-60 ("from			
		the perspective of a			
		workstation, or other			
	4	computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39			· · · · · · · · · · · · · · · · · · ·

¹ United States Patent No. 6,425,035 ("the '035 Patent") and United States Patent No. 7,051,147 ("the '147 Patent") share a common specification. To facilitate cross-referencing, unless noted otherwise, all Col:Line cites in the charts of proposed claim constructions are to the '035 Patent.

 $^{^{2}}$ For this and other claim terms common to both the '035 and '147 patents, the parties have not identified any evidentiary issues that are different between the two patents. Therefore, for the sake of brevity and clarity, Defendants avoid repetition of issues addressed in detail in the '035 chart.

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		(principles of claim differentiation require "devices," as a group, must necessarily be			
		broader than "workstations").			
		Col. 6, ll. 31-41, 46-56 (the specification			
		describes "servers" as a type of computing device that can make storage access requests).			
		Abstract, Col. 1, 11. 21- 24, 11. 36-37, 11. 53-56; Col. 2, 11. 4-6; Col. 3, 11. 3-6, 41-43; Col. 4, 11. 38-			
		42, 11. 55-56 Col. 6, 11. 45-55; Col. 8, 11. 65-68 ("devices" is used broadly to refer to various computing			
		devices such as workstations, input/output devices, "initiator" and "target" devices).			
		April 6, 2005 Reply to Office Action at 8, 10, 12, 22, Fore Decl. ISO Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July 22, 2005 Reply to Office Action at 7-15, 21-23, 27-29, 32, 33, 35-37, 39,			

		Special Master's Proposed			
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Constituction	Fore Decl. ISO	Construction	Evidence	
		Crossroads' Post-Hr'g		:	
				•	
		Cl. Const. Br., Ex. F			
	-	("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices		1	
		capable of making			
		requests for storage).			
		Extrinsic:		-	
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would			
		understand that in the			
		embodiments at Col. 6,			
		11. 33-41; 46-56, it is the			
		server that sends			
		requests for storage	· · · · · · · · · · · · · · · · · · ·		
		access to the storage			
		router using NLLBP).			
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			
		$\overline{(4^{th} \text{ ed. 1995})}$, Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or appliance.			
		Commonly used in			
		reference to peripherals			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		such as printers, CRTS			
		and disk drives").			
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8, 2011 (Defendants'			
		counsel agreeing that the defining characteristic of			
		a device is that it is the			
		thing that issues storage		· · · · ·	
		requests).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network		· .	
		server" is a server that			
		can request access to			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed. 1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers functioning			· · ·
	· · · ·	as workstations on the			
	l	network").			

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed Defendants' Proposed	Defendants'	Special Master's
Language	Crossroads Proposed Construction	Evidence	Construction	Evidence	Construction
		Special Master's Report			
		at 22, Dot Hill			
		Litigation, Pl.'s Cl.			· ·
		Const. Hr'g Ex. P-15			
		(Court previously			
		construed "storage			
		router" as "a data			
		transmitting device that			
-		allows users to integrate			
		different servers or			1. State 1.
· · ·		workstations into a			
		storage network").			
				-	
a second Fibre Channel	Configuration:	Configuration:	Configuration:	Intrinsic Evidence	No Construction
controller operable to					Necessary.
controller operable to connect to and interface with a second Fibre Channel transport medium: and	"A modifiable setting of	Intrinsic:	"Map"; otherwise	'147 patent claims 1, 9,	
interface with a second	information."		indefinite.	10, 34, 35 ("a	
Fibre Channel		Col. 2, ll. 19-23; Col. 5,		configuration [] that	
transport medium; and		11. 53-54; Col. 6, 11. 58-		maps")	
a supervisor unit coupled		64 (describing			
to the first and second		"configuration" as		'147 patent claims 15,	
Fibre Channel		information used to		22, 29 ("a configuration	
controllers and the		control operation of the		wherein the	
buffer, the supervisor		storage router and which		configuration includes	
unit operable:		is modifiable).		[the][a] map")	
to maintain a					
configuration for		'147 Patent: Col. 2, 11.		$2:20-23^3$ ("The	· · · ·
remote storage devices		28-32; Col. 9, 11. 36-41		configuration maps")	
connected to the		("configuration" can also			
second Fibre Channel		include mapping		4:13-16	·
transport medium that		information and			
maps between the		additional information,		5:50-53	
device and the remote		such as information			
		needed to "implement[]			1

 3 As in the claim construction briefs previously submitted to the Court, all specification citations are to the '035 patent unless otherwise noted. 5

		Construction	Evidence	Construction
	access controls").			
	Claim 15 Cal 11 11 22			
				-
	under Defendants'			
	proposed construction).			
	Extrinsic:			
	Chaparral Markman			
	ISO Crossroads' Cl.			
	Const. Br., Ex. L (parties			
	to earlier action agreed			
	to construe "maintain a			
			-	
	set of information").			
Access control(s):	Access control(s):	· · · · · · · · · · · · · · · · · · ·	See '035 patent, claim 1.	"Controls which limit a
40 · 1 1· · · ·	.			device's access to a
	Intrinsic:			specific subset of storag
specific subset of storage	Fig. 3, Col. 3, 11. 7-59,			devices or sections of a single storage device
	1 + 1 = 0, $J = 0 = 0$, $J = 1$, $J = 17$, $J = 0$			according to a map."
	"Controls which limit a device's access to a	proposed construction).Extrinsic:Chaparral Markman Order at 16, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L (parties to earlier action agreed to construe "maintain a configuration" to mean "keeping a modifiable setting of information"); February 22, 2011 Decl. of John Levy, Ph.D., ¶46 (person of ordinary skill would understand "maintaining a configuration" to mean "keeping a modifiable set of information").Access control(s):Access control(s):"Controls which limit a device's access to aIntrinsic:	28 (the limitation "operable to maintain a configuration wherein the configuration wherein the configuration includes a map" would be meaningless under Defendants' proposed construction). Extrinsic: Chaparral Markman Order at 16, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L (parties to construe "maintain a configuration" to mean "keeping a modifiable setting of information"); February 22, 2011 Decl. of John Levy, Ph.D., ¶46 (person of ordinary skill would understand "maintaining a configuration" to mean "keeping a modifiable set of information"); February 23, 2011 Decl. of John Levy, Ph.D., ¶46 (person of ordinary skill would understand "Maintaining a configuration" to mean "keeping a modifiable set of information"). Access control(s): "Controls which limit a device's access to a	28 (the limitation "operable to maintain a configuration wherein the configuration includes a map" would be meaningless under Defendants' proposed construction). Extrinsic: Chaparral Markman Order at 16, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L (parties to configuration" to mean "keeping a modifiable setting of information"); February 22, 2011 Decl. of John Levy, Ph.D., ¶46 (person of ordinary skill would understand "maintaining a configuration" to mean "keeping a modifiable set of information"); February 22, 2011 Decl. of John Levy, Ph.D., ¶46 (person of ordinary skill would understand "maintaining a configuration" to mean "keeping a modifiable set of information"). Access control(s): See '035 patent, claim l. "Controls which limit a device's access to a

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
o maintain a	single storage device	40-43, 48-50, 50-53	· · ·		· · · · · · · · · · · · · · · · · · ·
configuration for	according to a map."	(Fig. 3 shows			
remote storage devices		embodiment in which all			
connected to the		workstations can access		·	
second Fibre Channel		global storage device).			
transport medium that		and the second			
maps between the		Col. 4, ll. 7-11 ("access			
device and the remote		controls" applies to			
storage devices and		shared storage).			
that implements access					
controls for storage		July 22, 2005 Reply to			
space on the remote		Office Action at 13-14,			
storage devices;		Fore Decl. ISO		and the second second second second	
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		(discussion during			
		reexamination, that the			
		"access controls" feature		· · · · · · · · · · · · · · · · · · ·	
		includes the concept of			
		allowing multiple			
		devices to have access to			
		shared storage).			
		Extrinsic:			
		Chaparral Markman			
	· · · · · · · · · · · · · · · · · · ·	Order at 3-7, 15, Fore			
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. L			
		(Crossroads'			
		construction parallels			
		historic construction; the			
		invention contemplates			
		using access controls for			
		an entire storage device			
		as well as shared			
		storage; Court has		a de la companya de l	

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		rejected a construction in			
		which a particular subset			
		of storage could only be			
		accessed by a single			
		workstation).			
		Comments on Statement			
		of Reasons for			
		Patentability and/or			
		Confirmation, Fore Decl.			
		ISO Pl.'s Cl. Const. Br.,			
		Ex. I (patentees			
		expressly disagreed with			
		any characterization of			
		the claims that were			
		"inconsistent with the			
		claim language,			
		specification or prior			
		prosecution history.").			
and to process data in	Allow access to the	Allow access to the	Allow accessto the	See '035 patent, claim 1.	"Permit or deny access
the buffer to interface	remote storage devices	remote storage devices	remote storage devices		using the NLLBP of
between the first Fibre	using native low level,	using native low level,	using native low level,		the Virtual Local
Channel controller and	block protocol:	block protocol:	block protocol:	-	Storage without
the second Fibre					involving a translation
Channel controller to	"Permit or deny reading	Intrinsic:	Permit reading and		from high level
allow access from	or writing of data using		writing of data in the		network protocols or
Fibre Channel initiator	the NLLBP of the	Fig. 1, Col. 1, 11. 49-54;	native low level, block		file system protocols
devices to the remote	Virtual Local Storage	Col. 3, 11. 17-23 (the	protocol of the storage		to a native low level
storage devices using	without involving a	"storage router" of the	device, without		
native low level, block	translation from a high	invention is contrasted	involving network		block protocol
protocol in accordance	level file system	with a "network server"	servers, Ethernet		request."
with the configuration.	command to a native low	that allowed access to	networks, higher-level		
	level, block protocol	storage devices by	protocols such as		
	request."	translating high level file	TCP/IP, Ethernet		
		system commands of the	protocols, network		

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		"network protocol" into	protocols or file system		
		low level requests (i.e.,	protocols, or translation		
		NLLBP) and sending the	from one protocol to		
		NLLBP to the physical	another.		
		storage devices).			
		Claim 1, Col. 9, 11. 13-30			
		(storage router "allow[s]			
		access from devices			
		connected to the first		· · · · ·	
		transport medium to the			
		storage devices using			
		native low level, block			
		protocols" (emphasis			
		added); the storage			
		router, specifically, the			
		supervisor unit within			
	· · · · · · · · · · · · · · · · · · ·	the storage router, "uses"			
		the NLLBP to permit or			
		enable access).	· · · · ·		
		Col. 4, 11. 7-47			
		(invention of patents-in-			
		suit provides "virtual			
		local storage" that			
		appears to a workstation			
		as local storage, and			
		appears to have the same			
		characteristics of local			
	. ···				
		storage).			
		Col. 4, 11. 44-57 ("virtual			
		local storage" is			
	1	"provided" by the			
		storage router in a			
		manner that is			· · · ·
		transparent to the			

Language	Construction	Evidence devices requesting storage access). Col. 5, ll. 11-17, ll. 24- 27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage). Abstract; Col. 2, ll. 12-	Construction	Evidence	Construction
		storage access). Col. 5, ll. 11-17, ll. 24- 27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage).			
		27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage).			
		27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage).			
		within the storage router processes NLLBP requests from the devices to access permitted storage).			
		processes NLLBP requests from the devices to access permitted storage).			
		requests from the devices to access permitted storage).			
		devices to access permitted storage).			
		permitted storage).			
		Abstract; Col. 2, II. 12-			
		Adstract, Col. 2, 11, 12-			
		15, 17-20, 24-27; Col. 3,			
		13, 17-20, 24-27, Col. 3, 11. 59-63; Col. 3, 11. 51-			
		53; Col. 4, 11. 2-6; Col. 5,			
		II. 1-5; Col. 9, II. 28-31;			
		Col. 10, ll. 9-11			
		(specification discloses			
		that NLLBPs are used			
	· · · · · · · · · · · · · · · · · · ·	by, and at, the storage			
		router to allow access).			
		Col. 6, 11. 33-41, 46-56			
		(specification describes			
		two embodiments			
		wherein "devices"			
		making the storage			
		access request are			
		servers).			
		C 1 1 11 57 (0 /#C			
		Col. 1, 11. 57-60 ("from			
		the perspective of a			
		workstation, or other computing device,			
		seeking to access such server data, the access is			
		much slower than access			
L				*	<u> </u>

	· · ·							
Special Master's Proposed Construction of Disputed Terms								
Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's			
Language	Construction	Evidence	Construction	Evidence	Construction			
		to data on a local storage		•				
		device ").						
		Claim 3, Col. 9, 11. 37-39						
		(principles of claim						
		differentiation require						
		"devices," as a group,						
		must necessarily be						
		broader than						
		"workstations").						
					· · · · · · · · · · · · · · · · · · ·			
		Col. 3, 11. 17-23 (the						
		"network protocol" used						
		by the prior art "network						
		servers" to allow access						
		to storage devices is a						
		protocol that includes a						
		high level file system						
		command that must be						
		translated into low level						
		storage requests).						
		April 6, 2005 Reply to						
		Office Action at 10-11,						
		Fore Decl. ISO						
		Crossroads' Post-Hr'g						
		Cl. Const. Br., Ex. E;						
		July 22, 2005 Reply to						
		Office Action at 24-27,						
		Fore Decl. ISO						
		Crossroads' Post-Hr'g						
		Cl. Const. Br., Ex. F						
		(Crossroads						
		distinguished Petal,						
		Spring and Oeda as						
		having a server that						
		provided controlled						

	<u> </u>	Special Master's Proposed	Construction of Disputed	Terms	
Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		access to storage was			
· · · · · · · · · · · · · · · · · · ·		required to translate high			
		level file system			
		commands into low level			
		commands in order to			
		send the NLLBP to the			
		storage devices).			
		April 6, 2005 Reply to			
		Office Action at 8-11,			
		19, 22-23, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		E; July 22, 2005 Reply			· · · · · · · · · · · · · · · · · · ·
		to Office Action at 11-			A second second
		17, 21-28, Fore Decl.			
	· · · · ·	ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex. F (showing that			
		Crossroads did not make			
		a sweeping disclaimer of			
-		any use of a "network			
		server"; Crossroads			1. A.
		distinguished its			
		invention from Oeda,			
		Petal and Spring based	2		
		on the requirement that			
		the "network server" that			
		provided controlled	and the second		
		access to storage was			
		required to translate the			
		high level file system			
		command into low level			
		commands in order to			
		send the NLLBP to the			
		storage device, not the			
		use of Ethernet			1

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		networks, Ethernet or			
		TCP/IP).			
		Col. 2, 11. 17-20; Col. 5,			
		11. 19-22, 50-57, 60-63;			
		Col. 6, 11. 32-37; '147			
		Patent, Claim 1, Col. 9,			
		II. 28-32 (disclosing and			
		claiming embodiments			
		using Fibre Channel; the			
		inclusion of "without			
		involving network			
		protocols" according to			
		Defendants' expert			
		would prohibit the use of			
		Fibre Channel despite			
		the fact that these are			
		express embodiments).	·		
	-		·		
		Col. 5, 11. 53-56 (Fibre			
		Channel is a protocol	An		
		used for communications			
		over "Fibre Channel			
		based networks").			
		Extrinsic:			
		March 7, 2011 Supp.		-	
		Decl. of John Levy,			
		Ph.D., ¶¶ 9-13 (data			·
		transfer in networks best			
		understood as having			
		layers; when TCP/IP and		· -	
		Ethernet protocols were			
		used by prior art systems			
		to transport high level			
		network file system			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Crossroads Proposed Construction	Evidence	Construction	Evidence	Construction
× ×		requests, a network			
		server would translate			
		such requests into low			
		level requests to access			
•		storage); ¶6-7 (prior art			
		"server" described in			
1		patents-in-suit was			
		specifically a device that			
		allowed access between			
		the device requesting	$\label{eq:matrix} \left\{ \begin{array}{ll} M_{1} \\ M_{2} \\ M_{3} \\ M$		
		"access to data" and the			
		storage devices using			
		something called a			
		"network protocol"; such			
		"servers" implemented			
		file systems and received			
		high level file system			
		protocols from devices			
		requesting data access).			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶4 (person of			
		ordinary skill would			
	•	understand that the			
		specification discloses a			
		server that sends			
		requests for storage			
		access to a storage router			
		using NLLBP).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
		storage).			

Special Master's Proposed Construction of Disputed Terms								
Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's			
Language	Construction	Evidence	Construction	Evidence	Construction			
		Microsoft Computer						
		Dictionary 430 (3d Ed.						
		1997), May 11, 2011 3d						
		Supp. Decl. of John						
		Levy, Ph.D., Ex. A						
		(defining "server" as						
		"(1) on a local area						
		network (LAN), a						
		computer running administrative software						
		that controls access to						
		the network and its						
	-	resources, such as						
		printers and disk drives,						
		and provides resources			-			
		to computers functioning						
		as workstations on the						
		network").						
		Special Master's Report						
		at 22, Dot Hill						
	· · · · · · · · · · · · · · · · · · ·	Litigation, Pl.'s Cl.						
		Const. Hr'g Ex. P-15						
		(Court previously						
		construed "storage						
		router" as "a data						
		transmitting device that						
		allows users to integrate						
		different servers or						
		workstations into a	-					
		storage network").						
		Hr'g Tr. 76:4-10, 82:20-						
		23, March 8, 2011 (in						
		hypothetical network of						
		Graphic 2 of Defendants'						

Special Master's Proposed Construction of Disputed Terms						
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction	
	·	Markman			· · · ·	
		Demonstratives (Fore				
		Decl. ISO Pl's Post-Hr'g				
		Cl. Const. Br., Ex. J) the				
	-	workstation sends high				
		level file systems				
		commands to network				
		server); Id. at 200:2-5,				
		201:22-24, 202:24-203:3				
		(Defendants expressly				
		stated that a "device" is a				
		"computer" that is both				
		"reading or writing data				
		from a storage device"				
		and sending NLLBPs				
		and the only "device"				
		that does so in Graphic				
		2, shown in Crossroads'				
		Post-Hearing Brief is the				
		"network server").				
		Crossroads' Concise				
		Statement of				
		Infringement, Dot Hill				
		Litigation (Case No. A-				
		03-CV-754 SS), Fore				
		Decl. ISO Pl.'s Post-Hr'g				
	· · · · · · · · · · · · · · · · · · ·	Cl. Const. Br., Ex. H;				
		April 28, 2011 2d Supp.				
		Decl. of John Levy,				
		Ph.D., ¶5 (accused				
		devices in Dot Hill				
		litigation were designed				
		to be used in				
		hypothetical system				
		shown in Graphic 2 of				
	I .	Defendants' Markman				

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		Demonstratives (Fore Decl. ISO Pl's Post-Hr'g			
		Cl. Const. Br., Ex. J)).			
		Hr'g Tr. at 81:12-15,			
		March 8, 2011 (all			
		parties agree that the			
		Petal, Spring and Oeda			
		references disclose			
		systems with a "server"			
		interposed between			
		workstations and			
		storage devices); <i>Id.</i> at			
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants			
		agree that the			
		"translation"			
		distinguished by			
		patentees during			
		reexamination was from			
		high level file system commands into NLLBP			
		requests); <i>Id.</i> at 89:11-16			
		(parties agree that			
		"allowing access			
		using NLLBP" occurs			
		without a translation			
		from a high level file			
		system command to a			
		NLLBP request); Id. at			
		91:14-16, 92:1-5, 152:4-			
		7 (Defendants concede			
		that the "network			
		protocols" described in			
		the Oeda, Petal and			
		Spring references			
		included file system	×		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
9 B		commands thus, including "without involving network protocols" is superfluous to "without involving a translation from a high			
		level file system command to a native low level block protocol request.")			
		April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶7 (CIFS, NFS and FTP are network protocols).			
		March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses term "network protocol" broadly such that it would include Fibre Channel).			
		April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶3 (a workstation gets "access to the local storage device through native low level block protocols").			
		Hr'g Tr. at 129:7-13, March 8, 2011 (Defendants agreed to remove "without			

 Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
	involving Ethernet			а. С
	networks, Ethernet			
	protocols, TCP/IP" from			
	their proposed			
	construction).March 7,			
	2011 Supp. Decl. of			
	John Levy, Ph.D., ¶13			
	(Ethernet and TCP/IP			
	protocols are concerned			
	only with delivery of			
	messages).			
	February 22, 2011 Decl.			
	of John Levy, Ph.D., ¶36			
	(NLLBP "used" by the			
	storage router to allow			
	access is the NLLBP			
	sent to it from the			
	device; this NLLBP is			
	the NLLBP appropriate			
	for the virtual local			
	storage, not the NLLBP			
	of the storage device			
	storing the data).			
	Division			
	Dictionary of Computer			
	and Internet Terms 311 (6 th Ed. 1996), Fore			•
	Decl. ISO Pl.'s Cl.			
	Const. Br., Ex. S (defining "native" as "1.			
	designed for a specific			
	hardware or software			
	environment (rather than			
	for compatibility with			
	something else)").			
	someting cise) j.			
 	L			
	1	9 •		
				•

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		Stip. Defs. of Cl. Terms,	and the second second second		
		Fore Decl. ISO Pl.'s			
		Post-Hr'g Cl. Const. Br.,			
		Ex. I (parties agree that			
		"virtual local storage" is			
		"storage space, in a			
		storage device that is			· · · ·
		remotely connected to an			
		initiator device to be			
		within or locally			
		connected to the initiator			
		device").			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
•		Ph.D., ¶6 (under			
		Defendants'			
		construction, a protocol			
		used for communication		· · · · ·	
		over "Fibre Channel			
		based networks" would			
		be a network protocol).			· · · · · · · · · · · · · · · · · · ·
				· ·	
and to process data in	Initiator Device:	Initiator Device:	Fibre Channel initiator	Extrinsic Evidence	"A device that issues
the buffer to interface			device:		requests for data or
between the first Fibre	"A device that issues	Intrinsic:	· · ·	Def. Ex. 20, Microsoft	storage."
Channel controller and	requests for data or		A computer that issues a	Computer Dictionary	-
the second Fibre	storage."	Col. 3, ll. 41-43; Col. 6,	command on a Fibre	(5th ed. 2002) at 273.	
Channel controller to		11. 19-57 (specification	Channel bus using Fibre		
allow access from		generically refers to	Channel protocol.	Pl. Hrg. Ex. P-17 ⁴ , FC	
Fibre Channel initiato	•	"initiator device" as a		Protocol for SCSI §§ 4-2	
devices to the remote		device requesting access		to 4-2.	
storage devices using		to a target device).			
native low level, block				For proper construction	

⁴ For the sake of clarity, commonly cited doouments are referenced by the abbreviated names used in prior briefing. A table of these abbreviations was included in Defendant's Reply Post-Hearing Brief and is also appended at the end of this chart.

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
protocol in accordance		Extrinsic:		of "device" as	
with the configuration.		Extransic.		"computer" see '035	
with the configuration.		Chaparral Markman		patent, claim 1.	
		Order at 16, Fore Decl.		pulent, claim 1.	
		ISO Crossroads' Cl.			
		Const. Br., Ex. L.			
		(Crossroads'			
		construction is the		· ·	
		historic construction of			
		term).			
and to process data in	Native low level block	Native low level block	Native low level block	See '035 patent, claim 1.	"A set of rules or
the buffer to interface	protocol ("NLLBP"):	protocol:	protocol:		standards that enable
between the first Fibre					computers to exchange
Channel controller and	Native:	Intrinsic:	Does not need to be		information and do no
the second Fibre	"Designed for use with a		separately construed;		involve the overhead
Channel controller to	specific type of storage	Abstract, Col. 1, ll. 44,	alternatively, may be		
allow access from	device."	Col. 2, 11. 13-14, 26; Col.	construed with reference		of high level protocol
Fibre Channel initiator		3, 11. 17, 22-23, 53, 63;	to individual terms as		and file systems
devices to the remote	Block Protocol:	Col. 4, 11. 4-5, 25; Col. 5,	follows:		typically required by
storage devices using	"A set of rules or	1. 3; Claim 1, Col. 9, 11.			network servers."
native low level, block	standards for exchanging	29-30; Col. 10, l. 10;	Native:		
protocol in accordance	information with a	Col. 10, 11. 48-49	Designed for use with a		
with the configuration.	block-oriented storage	(specification	specific type of storage		
	device."	consistently uses	device.		
		"NLLBP" as a single			
	Low Level	term).	Low-level protocol:		
	Protocol:		A set of rules or		
	"A set of rules or	Fig. 1; Col. 3, 11, 20-23	standards that enable		
	standards that enable	(network server shown	computers to exchange		
	computers to exchange	in Fig. 1 communicates	information without		
	information without	with storage devices via	involving network		
	involving high level file	NLLBPs even though	servers, Ethernet		
		the SCSI commands are	networks, or higher-level		
	system protocols."				
	On in the alternation	sent by a network	protocols such as		
	Or, in the alternative:	server).	TCP/IP, Ethernet		
			protocols, network		
	Native Low Level	Fig. 1, Col. 1, Il. 49-54;	protocols or file system		

Special Master's Proposed Construction of Disputed Terms								
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction			
	Block Protocol: "A set of rules or standards designed for exchanging information with a block-oriented storage device without involving high level file system protocols."	Col. 3, ll. 17-23 (the "storage router" of the invention is contrasted with a "network server" that allowed access to storage devices by translating high level file system commands of the "network protocol" into low level requests (i.e., NLLBP) and sending the NLLBP to the physical storage devices).	protocols. Block protocol: A set of rules or standards for exchanging information with a block-oriented storage device					
		Claim 1, Col. 9, ll. 13-30 (storage router "allow[s] access from <u>devices</u> connected to the first transport medium to the storage devices using native low level, block protocols" (emphasis added); the storage router, specifically, the supervisor unit within the storage router, "uses" the NLLBP to permit or enable access).						
		Abstract; Col. 2, ll. 12- 15, 17-20, 24-27; Col. 3, ll. 59-63; Col. 3, ll. 51- 53; Col. 4, ll. 2-6; Col. 5, ll. 1-5; Col. 9, ll. 28-31; Col. 10, ll. 9-11 (specification discloses that NLLBPs are used						

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		by, and at, the storage			
		router to allow access).			
		Col. 6, 11. 33-41, 46-56			
		(specification describes			
		two embodiments			
		wherein "devices"			
		making the storage			
		access request are			
		servers).			
		April 6, 2005 Reply to			
		Office Action at 10-11,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. E;			
		July 22, 2005 Reply to			
		Office Action at 24-27,			,
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		(Crossroads			
		distinguished Petal,			
		Spring and Oeda as	- -		
		having a server that			
		provided controlled			
		access to storage was			
		required to translate high			
		level file system			
		commands into low level			
		commands in order to			
		send the NLLBP to the			
		storage devices).			
		storage devices).			
		April 6, 2005 Reply to			
		Office Action at 8-11,			
		19, 22-23, Fore Decl.	х.		

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		ISO Crossroads' Post-			
•		Hr'g Cl. Const. Br., Ex.			
		E; July 22, 2005 Reply			
		to Office Action at 11-			
		17, 21-28, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		F (showing that			
		Crossroads did not make			
		a sweeping disclaimer of			
		any use of a "network			
		server"; Crossroads			
		distinguished its			
		invention from Oeda,			
		Petal and Spring based			
		on the requirement that			
· · ·		the "network server" that			• •
		provided controlled			
		access to storage was			
		required to translate the			
		high level file system			
		command into low level			
		commands in order to			
		send the NLLBP to the			
		storage device, not the		· · · ·	
		use of Ethernet			
		networks, Ethernet or			
		TCP/IP).			
		Col. 2, 11. 17-20; Col. 5,			
		11. 19-22, 50-57, 60-63;			
		Col. 6, ll. 32-37; '147			
		Patent, Claim 1, Col. 9,			
		ll. 28-32 (disclosing and			
		claiming embodiments			
		using Fibre Channel; the			
		inclusion of "without			

			Construction of Disputed		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		involving network protocols" according to Defendants' expert would prohibit the use of Fibre Channel despite the fact that these are express embodiments).			
		Col. 5, ll. 53-56 (Fibre Channel is a protocol used for communications over "Fibre Channel based networks").			
		Col. 1, ll. 42-53; Col. 3, ll. 16-24; Col. 5, ll. 1-5 (specification notes that NLLBPs do not involve overhead of high level network protocols or file systems).			
		Col. 6, ll. 31-41, 46-56 (specification has two distinct embodiments in which the "devices" making storage requests are servers). Extrinsic:			
		March 7, 2011 Supp. Decl. of John Levy, Ph.D., ¶2; March 7, 2011 Decl. of Brian Berg ¶42 (experts agree that "NLLBP" is not a term			

	· · · · · · · · · · · · · · · · · · ·							
Special Master's Proposed Construction of Disputed Terms								
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction			
		of art).						
		Hr'g Tr. at 121:8-16, March 8, 2011 (parties agree that "NLLBP" should be construed as a single term, consistent with use in specification)						
		March 7, 2011 Supp. Decl. of John Levy, Ph.D., ¶13 (Ethernet and TCP/IP protocols are concerned only with delivery of messages).						
		March 7, 2011 Decl. of Brian Berg ¶48 (a SCSI command would be a low level command).						
		March 7, 2011 Decl. of Brian Berg, ¶37 (states that "low level" means "without involving file system protocols.").						
		April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶4 (person of ordinary skill would understand that the specification discloses a server that sends requests for storage access to a storage router using NLLBP).						

Special Master's Proposed Construction of Disputed TermsActual ClaimsCrossroads' ProposedCrossroads'Defendants' ProposedDefendants'Special Master's									
Language	Crossroads Proposed Construction	Evidence	Defendants' Proposed Construction	Evidence	Special Master's Construction				
<u>0</u>									
		Hr'g Tr. 76:4-10, 82:20-							
		23, March 8, 2011 (in							
		hypothetical network of							
		Graphic 2 of Defendants'							
		Markman							
		Demonstratives (Fore							
		Decl. ISO Pl's Post-Hr'g							
		Cl. Const. Br., Ex. J) the							
		workstation sends high							
		level file systems							
		commands to network							
		server); Id. at 200:2-5,							
		201:22-24, 202:24-203:3							
		(Defendants expressly							
		stated that a "device" is a							
		"computer" that is both							
		"reading or writing data							
		from a storage device"							
		and sending NLLBPs	а. — — — — — — — — — — — — — — — — — — —						
		and the only "device"							
		that does so in Graphic							
		2, shown in Crossroads'							
		Post-Hearing Brief is the							
		"network server").							
		Crossroads' Concise							
		Statement of							
		Infringement, Dot Hill							
		Litigation (Case No. A-							
	1	03-CV-754 SS), Fore							
		Decl. ISO Pl.'s Post Hr'g							
		Cl. Const. Br., Ex. H;							
		April 28, 2011 2d Supp.							
		Decl. of John Levy,							
		Ph.D., ¶5 (accused							

		Special Master's Proposed	Construction of Disputed	Ferms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		litigation were designed			
		to be used in			
		hypothetical system			
		shown in Graphic 2 of			
		Defendants' Markman			
	and the second	Demonstratives (Fore			
		Decl. ISO Pl's Post-Hr'g			
		Cl. Const. Br., Ex. J)).	-		
		Hr'g Tr. at 81:12-15,			
		March 8, 2011 (all		*	
		parties agree that the			
		Petal, Spring and Oeda			
		references disclose			
		systems with a "server"			
		interposed between			
		workstations and			
		storage devices); Id. at			
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants			
		agree that the			
		"translation"			
		distinguished by			
		patentees during			
		reexamination was from			
		high level file system			
		commands into NLLBP			
		requests); Id. at 89:11-16			
		(parties agree that			
		"allowing access			
		using NLLBP" occurs			
		without a translation			
		from a high level file			
		system command to a			
		NLLBP request); Id. at			
		91:14-16, 92:1-5, 152:4-			
		7 (Defendants concede			

		Special Master's Proposed	Construction of Disputed	Terms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
· · · · · · · · · · · · · · · · · · ·		that the "network			
		protocols" described in			
		the Oeda, Petal and			
		Spring references			
		included file system			
		commands thus,			
		including "without			
		involving network			
		protocols" is superfluous			
		to "without involving a			
		translation from a high			
		level file system			
		command to a native low		· .	
		level block protocol			
		request.")			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶7 (CIFS, NFS			
	· · · · · · · · · · · · · · · · · · ·	and FTP are network			
		protocols).			
		March 7, 2011 Decl. of			
		Brian Berg, ¶37			
		(Defendants' expert uses			
		term "network protocol"			
		broadly such that it			
		would include Fibre			
		Channel).			
		4 100 0011 010			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶6 (under			
		Defendants'			
		construction, a protocol	•		
		used for communication			
· · ·		over "Fibre Channel	· · · · · · · · · · · · · · · · · · ·		

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Special Master's Proposed Construction of Disputed Terms							
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction		
· · · ·		based networks" would					
		be a network protocol).					
				· · · ·			
		February 22, 2011 Decl.					
		of John Levy, Ph.D., ¶¶					
		31, 33 (NLLBPs do not		- · · · ·			
		have the overhead					
		associated with the use	and the second second second				
		of higher level protocols					
		to access storage); Id. ¶					
		34 (specification					
		describes network					
		servers communicating					
		with storage using					
		NLLBPs).		· · · · ·			
Claim 2:		1 Call No.		· ·	And a second state of the second states of the		
The storage router of	Configuration:	Configuration:	Configuration:	See claim 1, supra. ⁵	No Construction		
claim 1, wherein the	Configuration	Comgutation		See chann 1, supra.	Necessary.		
configuration	"A modifiable setting of	Intrinsic:	"Map"; otherwise	-			
maintained by the	information."		indefinite.				
supervisor unit includes		Col. 2, 11. 19-23; Col. 5,					
an allocation of subsets		11. 53-54; Col. 6, 11. 58-					
of storage space to		64 (describing					
associated Fibre Channel		"configuration" as					
devices, wherein each		information used to					
subset is only accessible		control operation of the					
by the associated Fibre		storage router and which					
Channel device.		is modifiable).					
		'147 Patent: Col. 2, Il.					
		28-32; Col. 9, 11. 36-41					
		("configuration" can also					
			1	1	1		
		include mapping					

⁵ For this and other claim terms appearing in multiple claims, the parties have not identified any evidentiary issues that are different between different claims. Therefore, for the sake of brevity and clarity, Defendants avoid repetition of issues addressed in detail previously in this chart. 30

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		additional information, such as information needed to "implement[] access controls").			
		Claim 15, Col. 11, ll. 23- 28 (the limitation "operable to maintain a configuration wherein the configuration includes a map" would be meaningless under Defendants'			
		proposed construction). Extrinsic:			
		<i>Chaparral</i> Markman Order at 16, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L (parties to earlier action agreed			
		to construe "maintain a configuration" to mean "keeping a modifiable setting of information");			
		February 22, 2011 Decl. of John Levy, Ph.D., ¶46 (person of ordinary skill would understand			
		"maintaining a configuration" to mean "keeping a modifiable set of information").			
storage router of n 1, wherein the iguration maintained	Device: "Computing device that	Device: Intrinsic:	Device: Computer.	See '035 patent, claim 1.	No Construction Necessary.

a na standar se		Special Master's Proposed	Construction of Disputed	Terms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
by the supervisor unit	issues storage access				
ncludes an allocation of	requests."	Claim 1, Col. 9, 11. 27-30			
subsets of storage space		("devices" refers to the			
o associated Fibre		devices that make			
Channel devices ,		requests and are allowed			
wherein each subset is		access to storage			
only accessible by the		devices).			
ssociated Fibre Channel					
levice.		Col. 1, ll. 36-37; Col. 2,			
		11. 4-5; Col. 4, 11. 55-56;			
		Col. 8, 11. 65-68 (the			
	1	specification describes			
		the devices that make			
		requests to access the			
		storage devices as			
		"computing devices").			
		Col. 1, ll. 57-60 ("from			
		the perspective of a			
		workstation, or other			
	· · ·	computing device,		[
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than	·		
		"workstations").			
		Col. 6, ll. 31-41, 46-56			
	·	(the specification	· · · · · · · · · · · · · · · · · · ·		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		describes "servers" as a			
		type of computing			
		device that can make		·	
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, 11. 38-		· · · · · · · · · · · · · · · · · · ·	
		42, 11. 55-56 Col. 6, 11.			· ·
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			
		workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
	<u> </u>		· · · · · · · · · · · · · · · · · · ·		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
	Construction	requests for storage).	Construction	Evidence	Construction
		requests for storage).			
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			and the second
		ordinary skill would			• · · · · · · · ·
		understand that in the			
		embodiments at Col. 6,			· · ·
		11. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			
				· · · ·	
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			
		$\overline{(4^{th} \text{ ed. } 1995)}$, Fore Decl.			
	· · · · · · · · · · · · · · · · · · ·	ISO Crossroads' Cl.			
		Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or appliance.			
		Commonly used in			
		reference to peripherals			r
		such as printers, CRTS			
		and disk drives").	· · · · ·		
		H-1- T+ 202.24			•
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8,			
		2011 (Defendants'			
		counsel agreeing that the			
		defining characteristic of			
		a device is that it is the			

Actual Claims Crossroads' Proposed Construction Defendants' Proposed Construction Defendants' Evidence Special Master's Construction Image: the second seco	Language Construction Evidence Construction thing that issues storage requests). requests). May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., ¶3 (a "network server" is a server that can request access to storage). Image: Construction Image: Construction Microsoft Computer Dictionary 430 (3d Ed. 1997), May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., Ex. A (defining "server" as "(1) on a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computer structioning as workstations on the network"). Special Master's Report at 22, Dor Hill Litigation, PL'S Cl. Const. Hr'g Ex. P-15 (Contr. Hr'g Ex. P-15 (Contr. Hr'g Ex. P-15 (Contruet "as "a data Image: Construction	Special Master's Proposed Construction of Disputed Terms						
requests). May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., 75 (a "network server" is a server that can request access to storage). Microsoft Computer Dictionary 430 (3d Ed. 1997), May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., Ex. A (defining "server" as "(1) on a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network"). Special Master's Report at 22, Doi Hill Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmiting device that	requests). May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., 75 (a "network server" is a server that can request access to storage). <u>Microsoft Computer</u> Dictionary 430 dEd. 1997), May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., EX. A (defining "server" as "(1) on a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computer's functioning as workstations on the network"). Special Master's Report at 22, <i>Dor Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construct "as "a data transmiting device that allows users to integrate							
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network"). Special Master's Report at 22, <i>Dot Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that	network"). Special Master's Report at 22, <i>Dot Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that allows users to integrate						· · · ·	
Special Master's Report at 22, <i>Dot Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that	Special Master's Report at 22, <i>Dot Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that allows users to integrate				-			
at 22, <i>Dot Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that	at 22, <i>Dot Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that allows users to integrate							
Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that	Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that allows users to integrate							
Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that	Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that allows users to integrate						-	
(Court previously construed "storage router" as "a data transmitting device that	(Court previously construed "storage router" as "a data transmitting device that allows users to integrate							
construed "storage router" as "a data transmitting device that	construed "storage router" as "a data transmitting device that allows users to integrate							
router" as "a data transmitting device that	router" as "a data transmitting device that allows users to integrate	-						
transmitting device that	transmitting device that allows users to integrate		· · · ·					
	allows users to integrate							

	5	Special Master's Proposed	Construction of Disputed	Terms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		different servers or workstations into a storage network").			
Claim 3:					
The storage router of	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
claim 2, wherein the					Necessary.
Fibre Channel devices	"Computing device that	Intrinsic:	Computer.		
comprise workstations.	issues storage access	Claim 1 Cal 0 11 27 20			
	requests."	Claim 1, Col. 9, ll. 27-30 ("devices" refers to the	-		
		devices that make			
		requests and are allowed			
		access to storage			
		devices).			
		Col. 1, ll. 36-37; Col. 2,			
		ll. 4-5; Col. 4, ll. 55-56;			
		Col. 8, 11. 65-68 (the			
		specification describes			
		the devices that make			
		requests to access the			
		storage devices as			
		"computing devices").			
				· · · · · · · · · · · · · · · · · · ·	
		Col. 1, ll. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").		-	

		Special Master's Proposed	Construction of Disputed	Terms	
Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, ll. 31-41, 46-56			
		(the specification			
· .		describes "servers" as a			
		type of computing		-	
		device that can make			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, 11. 38-			
	· · · · · ·	42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to			
	· · ·	various computing			
	· · · · · ·	devices such as			
i.		workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,		· · · · · · · · · · · · · · · · · · ·	

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Fore Decl. ISO			
•		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making requests for storage).			
		requests for storage).			
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would			
		understand that in the			
		embodiments at Col. 6,			
	· · · · · · · · · · · · · · · · · · ·	11. 33-41; 46-56, it is the]	
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			
		$(4^{\text{th}} \text{ ed. 1995})$, Fore Decl.			
		ISO Crossroads' Cl.		· · · · ·	
		Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			· · · · · ·
		electromechanical			
		contrivance or appliance.			
		Commonly used in			
	· · · · · · · · · · · · · · · · · · ·	reference to peripherals			

Actual Claims	Crossroads' Proposed Construction	Special Master's Proposed Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Construction	such as printers, CRTS	Construction	LVIUCHUC	Construction
		and disk drives").			
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8,			
		2011 (Defendants'			
		counsel agreeing that the			
		defining characteristic of			
		a device is that it is the	1		
	· · · · · · · · · · · · · · · · · · ·	thing that issues storage			
		requests).			
					· · ·
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that	• • • • • • • • • • • • • • • • • • •		
		can request access to storage).			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running			
		administrative software			
		that controls access to the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers functioning			
		as workstations on the			
		network").			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Construction		Construction	Evidence	Construction
		Special Master's Report			
		at 22, Dot Hill			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			-
		(Court previously			
		construed "storage			
		router" as "a data			
		transmitting device that			· · ·
		allows users to integrate			· · · · · · · · · · · · · · · · · · ·
		different servers or			
		workstations into a			· · · · · · · · · · · · · · · · · · ·
		storage network").			
he storage router of	Workstations:	Workstations:	Workstation:	See '035 patent, claim 3.	"A computer having
aim 2, wherein the					input/output devices
bre Channel devices	"A remote computing	Intrinsic:	A computer including		intended for use by
omprise workstations.	device that connects to		human input/output		humans."
-	the first (Fibre Channel)	Col. 4, 11. 39-41	devices such as a display		numans.
	transport medium, and	(specification defines	and keyboard and	· · · · · · · · · · · · · · · · · · ·	· · · · ·
	may consist of a	workstation as a	designed for use by one		
	personal computer."	"computing device").	person at a time.		10
				· · · ·	
		Extrinsic:			and the second second second
		Chaparral Markman			
		Order at 16, Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. L			
		(Crossroads'			
		construction consistent			
		with historic			1
		construction); Dot Hill			
		Stipulated Definitions of			
		Claim Terms at 2, Fore			
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. M	·		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		litigation adopted Crossroads' proposed construction); <u>Microsoft</u> <u>Press Computer</u> <u>Dictionary</u> 368 (1991), Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. Z ("workstation" is understood to be a broad term in the art).			
Claim 4: The storage router of	[No claim term at issue]		[No claim term at issue]		
claim 2, wherein the emote storage devices comprise hard disk lrives,					
Claim 5: The storage router of claim 1, wherein each of the first Fibre Channel controller	[No claim term at issue]		[No claim term at issue]		
comprises: Fibre Channel (FC) protocol unit operable to connect to the Fibre Channel transport					
medium; first-in-first-out queue coupled to the Fibre Channel protocol unit; and direct memory access					

Special Master's Proposed Construction of Disputed Terms						
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction	
A storage network,	Workstations:	Workstations:	Workstation:	See '035 patent, claim 3.	"A computer which has	
comprising:				F	human input/output	
a first Fibre Channel	"A remote computing	Intrinsic:	A computer including		devices."(?)	
transport medium;	device that connects to		human input/output			
a second Fibre Channel	the first (Fibre Channel)	Col. 4, 11. 39-41	devices such as a display			
transport medium;	transport medium, and	(specification defines	and keyboard and			
a plurality of	may consist of a	workstation as a	designed for use by one			
workstations	personal computer."	"computing device").	person at a time.			
connected to the first	F F F	····· ,	F			
Fibre Channel		Extrinsic:				
transport medium;						
a plurality of storage		Chaparral Markman				
devices connected to		Order at 16, Fore Decl.				
the second Fibre		ISO Crossroads' Cl.				
Channel transport		Const. Br., Ex. L				
medium; and		(Crossroads'				
a plurality of	-	construction consistent				
workstations connected		with historic				
to the first Fibre		construction); Dot Hill				
Channel transport		Stipulated Definitions of				
medium; a plurality of		Claim Terms at 2, Fore				
storage devices		Decl. ISO Crossroads'				
connected to the		Cl. Const. Br., Ex. M				
second Fibre Channel		(parties in <i>Dot Hill</i>				
transport medium; and		litigation adopted				
,,,,,		Crossroads' proposed				
	· · · · · · · · · · · · · · · · · · ·	construction); Microsoft		· · · · · · · · · · · · · · · · · · ·		
		Press Computer				
		Dictionary 368 (1991),				
		Fore Decl. ISO				
		Crossroads' Cl. Const.				
		Br., Ex. Z ("workstation"				
		is understood to be a				
		broad term in the art).				
a storage router	Access control(s):	Access control(s):	Access controls:	See '035 patent, claim 1.	"Controls which limit a	
interfacing between the				F	device's access to a	
first Fibre Channel	"Controls which limit a	Intrinsic:	Controls that use a map		specific subset of stora	

Special Master's Proposed Construction of Disputed Terms							
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction		
ransport medium and	device's access to a		to permit a particular		devices or sections of a		
he second Fibre	specific subset of storage	Fig. 3, Col. 3, 11. 7-59,	device to read data from		single storage device		
Channel transport	devices or sections of a	Col. 4, Il. 7-27, 33-35,	or write data to a		according to a map."		
nedium, the storage	single storage device	40-43, 48-50, 50-53	particular storage space				
outer providing virtual	according to a map."	(Fig. 3 shows	assigned to the device,				
cal storage on the		embodiment in which all	and to prevent the device				
orage devices to the		workstations can access	from reading data to or				
orkstations and		global storage device).	writing data from				
perable:		giobal storage device).	storage space assigned to				
nap between the		Col. 4, Il. 7-11 ("access	other devices.				
orkstations and the		controls" applies to	other devices.				
torage devices;	· · · · · · · · · · · · · · · · · · ·	shared storage).					
implement access		shared storage).					
ontrols for storage		July 22, 2005 Reply to					
bace on the storage		Office Action at 13-14,					
evices; and		Fore Decl. ISO					
evices, and							
		Crossroads' Post-Hr'g					
		Cl. Const. Br., Ex. F		-			
		(discussion during					
		reexamination, that the					
	· · · · · ·	"access controls" feature					
		includes the concept of					
		allowing multiple					
		devices to have access to					
		shared storage).					
		Extrinsic:					
		Chaparral Markman					
		Order at 3-7, 15, Fore					
		Decl. ISO Crossroads'					
		Cl. Const. Br., Ex. L	the second second second second				
		(Crossroads'					
		construction parallels					
		historic construction; the					
-		invention contemplates					
		using access controls for					

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		an entire storage device			
		as well as shared			
		storage; Court has			
	1	rejected a construction in			
		which a particular subset			
		of storage could only be			a part of the second second
		accessed by a single			
		workstation).	and the second second second		
		Comments on Statement			
		of Reasons for			
		Patentability and/or	· · · · ·		
		Confirmation, Fore Decl.			
		ISO Pl.'s Cl. Const. Br.,			
		Ex. I (patentees			
		expressly disagreed with			· · · · · ·
		any characterization of			
		the claims that were			
		"inconsistent with the	-		
		claim language,		· · · ·	
		specification or prior			
		prosecution history.").			
allow access from the	Allow accessto the	Allow access to the	Allow accessto the	See '035 patent, claim 1.	"Permit or deny access using the NLLBP of
workstations to the	storage devices using	storage devices using	storage devices using		using the NLLBP of
storage devices using	native low level, block	native low level, block	native low level, block	1	the Virtual Local
native low level, block	protocol:	protocol:	protocol:		Storage without
protocol in accordance					involving a translation
with the mapping and	"Permit or deny reading	Intrinsic:	Permit reading and		
access controls.	or writing of data using		writing of data in the		from high level
	the NLLBP of the	Fig. 1, Col. 1, 11. 49-54;	native low level, block		network protocols or
	Virtual Local Storage	Col. 3, 11. 17-23 (the	protocol of the storage		file system protocols
	without involving a	"storage router" of the	device, without		to a native low level
	translation from a high	invention is contrasted	involving network		block protocol
	level file system	with a "network server"	servers, Ethernet		request."
	command to a native low	that allowed access to	networks, higher-level		
	level, block protocol	storage devices by	protocols such as		
				L	<u> </u>
		4	4	-	

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
	request."	translating high level file system commands of the	TCP/IP, Ethernet protocols, network		
		"network protocol" into	protocols or file system		
		low level requests (i.e., NLLBP) and sending the	protocols, or translation from one protocol to		
		NLLBP to the physical	another.		
		storage devices).			
		Claim 1, Col. 9, 11. 13-30			
		(storage router "allow[s]			
		access from <u>devices</u> connected to the first			
		transport medium to the			
		storage devices using native low level, block			
		protocols" (emphasis			
		added); the storage router, specifically, the			
		supervisor unit within			
		the storage router, "uses" the NLLBP to permit or			
		enable access).			
		Col. 4, 11. 7-47			
		(invention of patents-in- suit provides "virtual			
		local storage" that			
		appears to a workstation as local storage, and			
		appears to have the same			
		characteristics of local storage).			
		Col. 4, ll. 44-57 ("virtual local storage" is			
		"provided" by the			
<u></u>	·	storage router in a			
		4	5		

Special Master's Proposed Construction of Disputed Terms							
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction		
		manner that is					
		transparent to the devices requesting					
		storage access).					
		Col. 5, 11. 11-17, 11. 24-					
		27 (supervisor unit					
		within the storage router processes NLLBP					
		requests from the					
		devices to access					
		permitted storage).					
		Abstract; Col. 2, 11. 12-					
		15, 17-20, 24-27; Col. 3,					
		11. 59-63; Col. 3, 11. 51-					
		53; Col. 4, ll. 2-6; Col. 5,					
		11. 1-5; Col. 9, 11. 28-31;					
		Col. 10, 11. 9-11					
		(specification discloses that NLLBPs are used					
		by, and at, the storage					
		router to allow access).					
	-	Col. 6, 11. 33-41, 46-56					
		(specification describes			•		
		two embodiments					
		wherein "devices"					
		making the storage					
		access request are					
		servers).					
		Col. 1, ll. 57-60 ("from					
		the perspective of a			,		
		workstation, or other					
		computing device,					
		seeking to access such					

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		server data, the access is			
		much slower than access		1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than		· · · · · · · · · · · · · · · · · · ·	
		"workstations").			
		Col. 3, ll. 17-23 (the			
		"network protocol" used			
		by the prior art "network			
		servers" to allow access			
		to storage devices is a			
		protocol that includes a			
		high level file system			
		command that must be			
		translated into low level			
		storage requests).			
		April 6, 2005 Reply to			
		Office Action at 10-11,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. E;			
		July 22, 2005 Reply to			
		Office Action at 24-27,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		(Crossroads			
		distinguished Petal,			
		Spring and Oeda as			

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed 7 Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		having a server that			
		provided controlled			
		access to storage was			
		required to translate high			
		level file system			
	· ·	commands into low level			
		commands in order to			
		send the NLLBP to the			
		storage devices).			
		April 6, 2005 Reply to			
		Office Action at 8-11,			
		19, 22-23, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		E; July 22, 2005 Reply			
		to Office Action at 11-			
		17, 21-28, Fore Decl.	· · · · · · ·		
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		F (showing that			
		Crossroads did not make			
		a sweeping disclaimer of			
		any use of a "network			
		server"; Crossroads			
		distinguished its			
		invention from Oeda,			
		Petal and Spring based			
		on the requirement that			
		the "network server" that			
		provided controlled			
		access to storage was			
		required to translate the			
		high level file system			
		command into low level			· · · ·
		commands in order to			
		send the NLLBP to the			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Construction of Disputed 7 Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		storage device, not the			· · · · ·
		use of Ethernet networks, Ethernet or			
		TCP/IP).			
		Col. 2, 11. 17-20; Col. 5,			
		II. 19-22, 50-57, 60-63;			
		Col. 6, ll. 32-37; '147		•	
		Patent, Claim 1, Col. 9,			
	• • • • • • • • • • • • • • • • • • •	11. 28-32 (disclosing and claiming embodiments			
		using Fibre Channel; the			
		inclusion of "without			
		involving network			
		protocols" according to			
		Defendants' expert would prohibit the use of			
		Fibre Channel despite			
		the fact that these are			
		express embodiments).			
		Col. 5, ll. 53-56 (Fibre			
		Channel is a protocol			
		used for communications			
		over "Fibre Channel			
		based networks").			
		Extrinsic:			
		March 7, 2011 Supp.			
		Decl. of John Levy,			
		Ph.D., ¶¶ 9-13 (data transfer in networks best			
		understood as having			
		layers; when TCP/IP and			
		Ethernet protocols were			
		used by prior art systems			

ctual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		to transport high level			
		network file system			
		requests, a network			
		server would translate			
		such requests into low			
		level requests to access			
		storage); ¶¶6-7 (prior art			
		"server" described in			
		patents-in-suit was			
	1	specifically a device that allowed access between			
		the device requesting			
	· · ·	"access to data" and the	-		
		storage devices using			
		something called a			
		"network protocol"; such			
		"servers" implemented			
		file systems and received			
		high level file system			
		protocols from devices			
		requesting data access).			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶4 (person of			
		ordinary skill would			
		understand that the			
		specification discloses a			
		server that sends			
		requests for storage			
		access to a storage router			
		using NLLBP).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that	·		· · · · · · · · · · · · · · · · · · ·

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		can request access to			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers functioning			
		as workstations on the			
		network").			
		Special Master's Report			
		at 22, <i>Dot Hill</i>			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		(Court previously			
		construed "storage			
		router" as "a data			
		transmitting device that allows users to integrate	1		
		different servers or			
		workstations into a			
		storage network").			
		Hr'g Tr. 76:4-10, 82:20-			
		23, March 8, 2011 (in			
	· · · · · · · · · · · · · · · · · · ·		• • • • • • • • • • • • • • • • • • • •	· · ·	
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Language Construction Evidence Construction Evidence Construction hypothetical network of Graphic 2 of Defendants' Markman Graphic 2 of Defendants' Markman Secondants' Deconstratives (Fore Decl. ISO PI's Post-Hr'g Cl. Const. Br., Ex. J) the workstation sends high level file systems commands to network server); <i>Id.</i> at 200:2-5, 201:22-42, 202:42-403:3 (Defendants expressly (Defendants expressly stated that a "device" is a "computer" that is both "reading or writing data from a storage device" and sending NLLBPs and the only "device" that does so in Graphic 2, shown in Crossroads' 2, shown in Crossroads' Post-Hearing Brief is the "network server"). Statement of Infringement, Dot Hill Litigation (Case No. A- 03-CV-754 SS), Fore Decl. ISO PI.'s Post-Hr'g Cl. Const. Br., Ex. H; April 28, 2011 24 Supp. Decl. of John Levy, Ph.D., ¶5 (accused devices in Dar Hill Litigation were designed Statement of	Special Master's Proposed Construction of Disputed Terms							
hypothetical network of Graphic 2 of Defendants' Markman Demonstratives (Fore Decl. ISO PI's Post-Hr"g Cl. Const. Br., Ex. J) the workstation sends high level file systems commands to network servery: <i>Id.</i> at 2002-5, 201:22-24, 202:24-203:3 (Defendants expressly stated that a "device" is a "computer" that is both "reading or writing data from a storage device" and sending NLLBPs and the only "device" that does so in Graphic 2, shown in Crossroads' Post-Hearing Brief is the "network server"). Crossroads' Concise Statement of Infringement, <i>Dot Hill</i> Litigation (Case No. A- 03-CV-754 SS), Fore Decl. ISO PI's Post-Hr"g Cl. Const. Br., Ex. H; April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶5 (accused devices in <i>Dot Hill</i> Litigation were designed	1					Special Master's Construction		
Graphic 2 of Defendants' Markman Demonstratives (Fore Decl. ISO PI's Post-Hri'g C.I. Const. Br., Ex. J) the workstation sends high le welf file systems commands to network server); 1d. at 200:2-5, 201:22-24, 202:24-203:3 (Defendants expressly stated that a "device" is a "computer" that is both "reading or writing data from a storage device" and sending NLLBPs and the only "device" that does so in Graphic 2, shown in Crossroads' Post-Hearing Brief is the "network server"). Crossroads' Concise Statement of Infringement, <i>Dot Hill</i> Litigation (Case No. A- 03-CV-754 SS), Fore Decl. ISO PI's Post-Hri [°] g C.I. Const. Br., Ex. H; April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶5 (accused devices in <i>Dot Hill</i> litigation were designed				· · ·				
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level file systems commands to network server; Ld at 200:2-5, 201:22-24, 202:24-203:3 (Defendants expressly stated that a "device" is a "computer" that is both "reading or writing data from a storage device" and sending NLLBPs and the only "device" that does so in Graphic 2, shown in Crossroads' Post-Hearing Brief is the "network server"). Crossroads' Concise Statement of Infringement, <i>Dot Hill</i> Litigation (Case No. A- 03-CV-754 SS), Fore Decl. ISO Pl.'s Post-Hr'g Cl. Const. Br., Ex. H; April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶5 (accused devices in <i>Dot Hill</i> litigation were designed			Cl. Const. Br., Ex. J) the					
commands to network server); Id. at 200:2-5, 201:22-24, 202:34-203:3 (Defendants expressly stated that a "device" is a "computer" that is both "reading or writing data from a storage device" and sending NLLBPs and the only "device" that does so in Graphic 2, shown in Crossroads' Post-Hearing Brief is the "network server"). Crossroads' Concise Statement of Infringement, Dor Hill Litigation (Case No. A- 03-CV-754 SS), Fore Decl. ISO PL's Post-Hr'g C1. Const. Br., Ex. H; April 28, 2011 2d Supp. Decl. ISO PL's Post-Hr'g C1. Const. Br., Ex. H; April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶5 (accused devices in Dot Hill litigation were designed								
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Statement of Infringement, <i>Dot Hill</i> Litigation (Case No. A- 03-CV-754 SS), Fore Decl. ISO Pl.'s Post-Hr'g Cl. Const. Br., Ex. H; April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶5 (accused devices in <i>Dot Hill</i> litigation were designed								
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Ph.D., ¶5 (accused devices in <i>Dot Hill</i> litigation were designed								
devices in <i>Dot Hill</i> litigation were designed								
litigation were designed								
I to be used in			to be used in					
hypothetical system								

		Special Master's Proposed	Construction of Disputed T		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		shown in Graphic 2 of		· · · · · · · · · · · · · · · · · · ·	
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-Hr'g			
		Cl. Const. Br., Ex. J)).			
		Hr'g Tr. at 81:12-15,			
		March 8, 2011 (all			
		parties agree that the			
		Petal, Spring and Oeda			
		references disclose			
		systems with a "server"			
		interposed between			
		workstations and			
		storage devices); Id. at		· •	
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants		· · · · · · ·	
		agree that the			
		"translation"			
		distinguished by			
		patentees during			
	and the second	reexamination was from			
		high level file system			
		commands into NLLBP			
		requests); Id. at 89:11-16			
		(parties agree that			
		"allowing access			
		using NLLBP" occurs			
		without a translation			
		from a high level file			
		system command to a			
		NLLBP request); Id. at			
		91:14-16, 92:1-5, 152:4-			
		7 (Defendants concede			
		that the "network			
		protocols" described in			
		the Oeda, Petal and	· · · · · · · · · · · · · · · · · · ·		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Spring references			·
		included file system			
		commands thus,			
		including "without			
		involving network			
		protocols" is superfluous			
		to "without involving a			
		translation from a high			
		level file system			
		command to a native low			
		level block protocol			
		request.")			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶7 (CIFS, NFS			
		and FTP are network			
		protocols).			
		protocols).			
		March 7, 2011 Decl. of			
		Brian Berg, ¶37			
		(Defendants' expert uses			
		term "network protocol"			
		broadly such that it			
		would include Fibre			
		Channel).			
		April 28, 2011 2d Supp.			с.
		Decl. of John Levy,			
		Ph.D., ¶3 (a workstation			
		gets "access to the local			
		storage device through			
		native low level block			
		protocols").			
		Ur! = Tr = at 120.7 = 12			
		Hr'g Tr. at 129:7-13, March 8, 2011			
	J				
		54	4		
			•		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
<u> </u>		(Defendants agreed to			
		remove "without			
		involving Ethernet			
		networks, Ethernet			
		protocols, TCP/IP" from			
		their proposed			
		construction).March 7,			
		2011 Supp. Decl. of			
		John Levy, Ph.D., ¶13			
		(Ethernet and TCP/IP			
		protocols are concerned			
		only with delivery of			
		messages).			
	- · · · · · · · · · · · · · · · · · · ·				
		February 22, 2011 Decl.			
		of John Levy, Ph.D., ¶36			
		(NLLBP "used" by the			
		storage router to allow			
		access is the NLLBP sent to it from the			
		device; this NLLBP is the NLLBP appropriate			
		for the virtual local			
		storage, not the NLLBP			
		of the storage device			
		storing the data).			
		Dictionary of Computer			
		and Internet Terms 311			
		(6 th Ed. 1996), Fore			
		Decl. ISO Pl.'s Cl.	· · · ·		
		Const. Br., Ex. S			
		(defining "native" as "1.			
		designed for a specific			
		hardware or software			
		environment (rather than			
		for compatibility with			
		5:	T		
		.	,		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
8 8		something else)").		· · · · · · · · · · · · · · · · · · ·	
		Stip. Defs. of Cl. Terms,			
		Fore Decl. ISO Pl.'s			
		Post-Hr'g Cl. Const. Br., Ex. I (parties agree that			
		"virtual local storage" is			
		"storage space, in a			
		storage device that is			
		remotely connected to an			
		initiator device to be			
		within or locally			
		connected to the initiator			
		device").			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶6 (under Defendants'			
		construction, a protocol	A second second second second		
		used for communication			
		over "Fibre Channel			
		based networks" would			
		be a network protocol).			
allow access from the	Native low level block	Native low level block	Native low level block	See '035 patent, claim 1.	"A set of rules or
workstations to the	protocol ("NLLBP"):	protocol:	protocol:		standards that enable
storage devices using native low level, block	Native:	Intrinsic:	Does not need to be		computers to exchange
protocol in accordance	"Designed for use with a	Intrinsic.	separately construed;		information and do n
with the mapping and	specific type of storage	Abstract, Col. 1, Il. 44,	alternatively, may be		involve the overhead
access controls.	device."	Col. 2, 11. 13-14, 26; Col.	construed with reference		of high level protocol
		3, 11. 17, 22-23, 53, 63;	to individual terms as		and file systems
	Block Protocol:	Col. 4, 11. 4-5, 25; Col. 5,	follows:		typically required by
	"A set of rules or	1. 3; Claim 1, Col. 9, 11.			network servers."
	standards for exchanging	29-30; Col. 10, l. 10;	Native:		
	information with a	Col. 10, 11. 48-49	Designed for use with a		
		5	6	· · · ·	
		J	V		

Special Master's Proposed Construction of Disputed Terms						
ctual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction	
	block-oriented storage	(specification	specific type of storage			
	device."	consistently uses "NLLBP" as a single	device.			
	Low Level	term).	Low-level protocol:			
	Protocol:		A set of rules or			
	"A set of rules or	Fig. 1; Col. 3, II. 20-23	standards that enable			
	standards that enable	(network server shown	computers to exchange			
	computers to exchange	in Fig. 1 communicates	information without			
	information without	with storage devices via	involving network			
	involving high level file	NLLBPs even though	servers, Ethernet			
	system protocols."	the SCSI commands are	networks, or higher-level			
	Or, in the alternative:	sent by a network server).	protocols such as TCP/IP, Ethernet			
			protocols, network			
	Native Low Level	Fig. 1, Col. 1, 11. 49-54;	protocols or file system			
	Block Protocol:	Col. 3, 11. 17-23 (the	protocols.			
		"storage router" of the				
	"A set of rules or	invention is contrasted	Block protocol:			
	standards designed for	with a "network server"	A set of rules or			
	exchanging information	that allowed access to	standards for exchanging			
	with a block-oriented	storage devices by	information with a			
	storage device without	translating high level file	block-oriented storage			
	involving high level file	system commands of the	device			
	system protocols."	"network protocol" into				
		low level requests (i.e.,				
		NLLBP) and sending the				
		NLLBP to the physical				
		storage devices).				
		Claim 1, Col. 9, 11. 13-30				
		(storage router "allow[s]				
		access from <u>devices</u>				
		connected to the first			•	
		transport medium to the				
		storage devices using				
		native low level, block				
		protocols" (emphasis				
			1			

		Special Master's Proposed	Construction of Disputed	Terms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language		added); the storage	Construction		
		router, specifically, the			
		supervisor unit within			
		the storage router, "uses"			
		the NLLBP to permit or			
		enable access).			
		Abstract; Col. 2, ll. 12-			
		15, 17-20, 24-27; Col. 3,			
		11. 59-63; Col. 3, 11. 51-			
		53; Col. 4, ll. 2-6; Col. 5,			
		11. 1-5; Col. 9, 11. 28-31;			
		Col. 10, 11. 9-11			
		(specification discloses			
		that NLLBPs are used			
		by, and at, the storage			
		router to allow access).			
		Col. 6, 11. 33-41, 46-56			
		(specification describes two embodiments			
		wherein "devices"	· ·		
		making the storage			-
		access request are			
		servers).			
		Ser vers).			
		April 6, 2005 Reply to			
		Office Action at 10-11,			
		Fore Decl. ISO			
	1	Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. E;	and the second		
		July 22, 2005 Reply to			
		Office Action at 24-27,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		(Crossroads			

		Special Master's Proposed	Construction of Disputed	Terms	· · · · · · · · · · · · · · · · · · ·
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		distinguished Petal, Spring and Oeda as having a server that provided controlled access to storage was required to translate high level file system commands into low level commands in order to			
		send the NLLBP to the storage devices).			
		April 6, 2005 Reply to Office Action at 8-11, 19, 22-23, Fore Decl. ISO Crossroads' Post- Hr'g Cl. Const. Br., Ex. E; July 22, 2005 Reply			
		to Office Action at 11- 17, 21-28, Fore Decl. ISO Crossroads' Post- Hr'g Cl. Const. Br., Ex. F (showing that Crossroads did not make			
		a sweeping disclaimer of any use of a "network server"; Crossroads distinguished its			
		invention from Oeda, Petal and Spring based on the requirement that the "network server" that provided controlled			
		access to storage was required to translate the high level file system command into low level			

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		commands in order to send the NLLBP to the storage device, not the use of Ethernet networks, Ethernet or			· · · · · · · · · · · · · · · · · · ·
		TCP/IP). Col. 2, ll. 17-20; Col. 5,			
		II. 19-22, 50-57, 60-63; Col. 6, II. 32-37; '147 Patent, Claim 1, Col. 9, II. 28-32 (disclosing and			
		claiming embodiments using Fibre Channel; the inclusion of "without involving network			
		protocols" according to Defendants' expert would prohibit the use of Fibre Channel despite			
		the fact that these are express embodiments). Col. 5, ll. 53-56 (Fibre			
		Channel is a protocol used for communications over "Fibre Channel based networks").			
		Col. 1, 11. 42-53; Col. 3, 11. 16-24; Col. 5, 11. 1-5 (specification notes that NLLBPs do not involve overhead of high level network protocols or file systems).			

Special Master's Proposed Construction of Disputed Terms						
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction	
		Col. 6, ll. 31-41, 46-56 (specification has two distinct embodiments in which the "devices" making storage requests are servers).				
		Extrinsic:				
		March 7, 2011 Supp. Decl. of John Levy, Ph.D., ¶2; March 7, 2011 Decl. of Brian Berg ¶42				
		(experts agree that "NLLBP" is not a term of art).				
		Hr'g Tr. at 121:8-16, March 8, 2011 (parties agree that "NLLBP" should be construed as a single term, consistent with use in specification)				
		March 7, 2011 Supp. Decl. of John Levy, Ph.D., ¶13 (Ethernet and TCP/IP protocols are concerned only with delivery of messages).				
		March 7, 2011 Decl. of Brian Berg ¶48 (a SCSI command would be a low level command).		•		
		March 7, 2011 Decl. of				

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed	Defendants'	Special Master's
			Construction	Evidence	Construction
		Brian Berg, ¶37 (states that "low level" means "without involving file system protocols."). April 28, 2011 2d Supp.			
		Decl. of John Levy, Ph.D., ¶4 (person of ordinary skill would understand that the specification discloses a server that sends			
		requests for storage access to a storage router using NLLBP). Hr'g Tr. 76:4-10, 82:20-			
		23, March 8, 2011 (in hypothetical network of Graphic 2 of Defendants' Markman Demonstratives (Fore Decl. ISO Pl's Post-Hr'g			
		Cl. Const. Br., Ex. J) the workstation sends high level file systems commands to network server); <i>Id.</i> at 200:2-5,			
		201:22-24, 202:24-203:3 (Defendants expressly stated that a "device" is a "computer" that is both "reading or writing data			

	,		e de la construcción de la constru La construcción de la construcción d References		
		Special Master's Proposed	Construction of Disputed	Гerms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		2, shown in Crossroads' Post-Hearing Brief is the "network server").			
		Crossroads' Concise Statement of Infringement, <i>Dot Hill</i> Litigation (Case No. A-			
		03-CV-754 SS), Fore Decl. ISO Pl.'s Post-Hr'g Cl. Const. Br., Ex. H; April 28, 2011 2d Supp.			. .
		Decl. of John Levy, Ph.D., ¶5 (accused devices in <i>Dot Hill</i> litigation were designed			
		to be used in hypothetical system shown in Graphic 2 of Defendants' Markman Demonstratives (Fore			
		Decl. ISO Pl's Post-Hr'g Cl. Const. Br., Ex. J)).			
		Hr'g Tr. at 81:12-15, March 8, 2011 (all parties agree that the Petal, Spring and Oeda			
		references disclose systems with a "server" interposed between workstations and			
		storage devices); <i>Id.</i> at 88:2-89:16; 93:4-7; 100:16-24 (Defendants agree that the			
		"translation"			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		distinguished by			
		patentees during			
		reexamination was from	· .		
		high level file system		•	
		commands into NLLBP			
		requests); Id. at 89:11-16			
		(parties agree that			
		"allowing access			
		using NLLBP" occurs			
		without a translation			
		from a high level file			
		system command to a			
		NLLBP request); Id. at			
		91:14-16, 92:1-5, 152:4-			
		7 (Defendants concede			
		that the "network			
		protocols" described in			
		the Oeda, Petal and			
		Spring references			
		included file system			
		commands thus,			
		including "without			
		involving network			
		protocols" is superfluous			
		to "without involving a			
		translation from a high			
		level file system			
		command to a native low			
		level block protocol			· · ·
		request.")			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶7 (CIFS, NFS			
		and FTP are network			
		protocols).			

		Special Master's Proposed	Construction of Disputed	Terms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses			
		term "network protocol" broadly such that it			
		would include Fibre Channel).			
		April 28, 2011 2d Supp. Decl. of John Levy,			
		Ph.D., ¶6 (under Defendants' construction, a protocol			
		used for communication over "Fibre Channel based networks" would			
		be a network protocol).			
		February 22, 2011 Decl. of John Levy, Ph.D., ¶¶ 31, 33 (NLLBPs do not			
		have the overhead associated with the use			
		of higher level protocols to access storage); <i>Id.</i> ¶ 34 (specification			
		describes network servers communicating with storage using			
		NLLBPs).			, U U
Claim 7: The storage network of	Access control(s):	Access control(s):	Access controls:	See '035 patent, claim 1.	"Controls which limit a
claim 6, wherein the				F, 1	device's access to a
access controls include an allocation of subsets	"Controls which limit a	Intrinsic:	Controls that use a map to permit a particular		specific subset of storage devices or sections of a
an allocation of subsets	device's access to a	A CONTRACT OF A CONTRACT.	i to permit a particular		devices or sections of a

		Special Master's Proposed	Construction of Disputed To	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
ssociated workstations, wherein each subset is nly accessible by the ssociated workstation.	devices or sections of a single storage device according to a map."	Col. 4, ll. 7-27, 33-35, 40-43, 48-50, 50-53 (Fig. 3 shows embodiment in which all workstations can access global storage device).	or write data to a particular storage space assigned to the device, and to prevent the device from reading data to or writing data from		according to a map."
		Col. 4, ll. 7-11 ("access controls" applies to shared storage).	storage space assigned to other devices.		
		July 22, 2005 Reply to Office Action at 13-14, Fore Decl. ISO Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F (discussion during reexamination, that the			
		"access controls" feature includes the concept of allowing multiple devices to have access to			
		shared storage). Extrinsic:			
		Chaparral Markman Order at 3-7, 15, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L			
· · ·		(Crossroads' construction parallels historic construction; the invention contemplates			
		using access controls for an entire storage device as well as shared			

				D.C. 1 ()	ta? Spacial Mastar's	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction	
· · · · ·		storage; Court has				
		rejected a construction in				
		which a particular subset				
		of storage could only be				
		accessed by a single				
		workstation).				
		workstation).				
		Comments on Statement				
	χ.	of Reasons for				
		Patentability and/or				
		Confirmation, Fore Decl.				
		ISO Pl.'s Cl. Const. Br.,				
		Ex. I (patentees				
		expressly disagreed with				
		any characterization of	and the second			
		the claims that were	and the second			
		"inconsistent with the				
		claim language,	and the second			
		specification or prior				
		prosecution history.").				
he storage network of	Workstations:	Workstations:	Workstation:	See '035 patent, claim 3.	"A computer having	
laim 6, wherein the					input/output devices	
ccess controls include	"A remote computing	Intrinsic:	A computer including			
n allocation of subsets	device that connects to		human input/output		intended for use by	
f storage space to	the first (Fibre Channel)	Col. 4, 11. 39-41	devices such as a display		humans."	
ssociated workstations.	transport medium, and	(specification defines	and keyboard and			
wherein each subset is	may consist of a	workstation as a	designed for use by one			
only accessible by the	personal computer."	"computing device").	person at a time.			
ssociated workstation.	personal computer.	computing device).	person at a time.			
ssociated workstation.		Extrinsic:				
		EAUTINSIC:	1 · · · · · · · · · · · · · · · · · · ·			
		Chan ann al Manlana an				
	•	Chaparral Markman				
		Order at 16, Fore Decl.				
		ISO Crossroads' Cl.				
		Const. Br., Ex. L				
		(Crossroads'	1 · · · · · · · · · · · · · · · · · · ·		1	

			Terms	
Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
	construction consistent			
				· · · ·
			· · · ·	
	broad term in the art).			
-		-		
[No claim term at issue]		[No claim term at issue]		
			A A A A A A A A A A A A A A A A A A A	
	and the second			
Configuration	Configurations	Configurations	See alaim 1 summa	No Construction
Configuration:	Configuration:	Configuration:	See claim 1, supra.	No Construction
			See claim 1, supra.	No Construction Necessary.
"A modifiable setting of	Configuration: Intrinsic:	"Map"; otherwise	See claim 1, supra.	
	Intrinsic:		See claim 1, supra.	
"A modifiable setting of	Intrinsic: Col. 2, ll. 19-23; Col. 5,	"Map"; otherwise	See claim 1, supra.	
"A modifiable setting of	Intrinsic: Col. 2, 1l. 19-23; Col. 5, 1l. 53-54; Col. 6, 1l. 58-	"Map"; otherwise	See claim 1, supra.	
"A modifiable setting of	Intrinsic: Col. 2, 1l. 19-23; Col. 5, 1l. 53-54; Col. 6, 1l. 58- 64 (describing	"Map"; otherwise	See claim 1, supra.	
"A modifiable setting of	Intrinsic: Col. 2, ll. 19-23; Col. 5, ll. 53-54; Col. 6, ll. 58- 64 (describing "configuration" as	"Map"; otherwise	See claim 1, supra.	
"A modifiable setting of	Intrinsic: Col. 2, ll. 19-23; Col. 5, ll. 53-54; Col. 6, ll. 58- 64 (describing "configuration" as information used to	"Map"; otherwise	See claim 1, supra.	
"A modifiable setting of	Intrinsic: Col. 2, ll. 19-23; Col. 5, ll. 53-54; Col. 6, ll. 58- 64 (describing "configuration" as	"Map"; otherwise	See claim 1, supra.	
	Crossroads' Proposed Construction	ConstructionEvidenceconstruction consistent with historic construction); Dot Hill Stipulated Definitions of Claim Terms at 2, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. M (parties in Dot Hill litigation adopted Crossroads' proposed construction); Microsoft Press Computer Dictionary 368 (1991), Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. Z ("workstation" is understood to be a broad term in the art).	ConstructionEvidenceConstructionconstruction consistent with historic construction); Dot Hill Stipulated Definitions of Claim Terms at 2, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. M (parties in Dot Hill litigation adopted Crossroads' proposed construction); Microsoft Press Computer Dictionary 368 (1991), Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. Z ("workstation" is understood to be a broad term in the art).	ConstructionEvidenceConstructionEvidenceconstruction consistent with historic construction); Dot Hill Stipulated Definitions of Claim Terms at 2, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. M (parties in Dot Hill litigation adopted Crossroads' proposed construction); Microsoft Press Computer Dictionary 368 (1991), Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. Z ("workstation" is understood to be a broad term in the art).Evidence

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
transport medium, the	· · · · · · · · · · · · · · · · · · ·				
first Fibre Channel		'147 Patent: Col. 2, 11.			
controller further		28-32; Col. 9, ll. 36-41			
operable to pull		("configuration" can also			
outgoing data from the		include mapping			
buffer and to place		information and			
incoming data into the		additional information,			
buffer;		such as information			
second Fibre Channel		needed to "implement[]			
controller operable to		access controls").			
connect to and					
interface with the		Claim 15, Col. 11, ll. 23-			
second Fibre Channel		28 (the limitation			
transport medium, the		"operable to maintain a			
second Fibre Channel		configuration wherein			
controller further		the configuration			
operable to pull		includes a map"			
outgoing data from the		would be meaningless			
buffer and to place		under Defendants'			
incoming data into the		proposed construction).			
buffer; and					
supervisor unit coupled		Extrinsic:			
to the first and second					
Fibre Channel		Chaparral Markman			
controllers and the		Order at 16, Fore Decl.			
buffer, the supervisor		ISO Crossroads' Cl.			
unit operable:		Const. Br., Ex. L (parties			
o maintain a		to earlier action agreed			
configuration for the		to construe "maintain a			
storage devices that		configuration" to mean			
maps between		"keeping a modifiable			
workstations and		setting of information");			
storage devices and		February 22, 2011 Decl.			
that implements the		of John Levy, Ph.D., ¶46		•	
access controls for		(person of ordinary skill		-	
storage space on the		would understand		· · ·	
storage devices; and		"maintaining a			

Special Master's Proposed Construction of Disputed Terms									
Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's				
Language	Construction	Evidence	Construction	Evidence	Construction				
to process data in the		configuration" to mean							
buffer to interface		"keeping a modifiable							
between the first Fibre		set of information").			· · · · · · · · · · · · · · · · · · ·				
Channel controller and									
the second Fibre									
Channel controller to									
allow access from									
workstations to storage									
devices in accordance									
with the configuration.	· ·								
a supervisor unit coupled	Workstations:	Workstations:	Workstation:	See '035 patent, claim 3.	"A computer having				
to the first and second					input/output devices				
Fibre Channel	"A remote computing	Intrinsic:	A computer including		intended for use by				
controllers and the	device that connects to	and the second	human input/output		humans."				
buffer, the supervisor	the first (Fibre Channel)	Col. 4, ll. 39-41	devices such as a display						
unit operable:	transport medium, and	(specification defines	and keyboard and						
o maintain a	may consist of a	workstation as a	designed for use by one						
configuration for the	personal computer."	"computing device").	person at a time.						
storage devices that									
maps between		Extrinsic:							
workstations and									
storage devices and		Chaparral Markman							
that implements the		Order at 16, Fore Decl.		-					
access controls for		ISO Crossroads' Cl.							
storage space on the		Const. Br., Ex. L							
storage devices; and		(Crossroads'							
o process data in the		construction consistent							
buffer to interface		with historic		,					
between the first Fibre		construction); Dot Hill							
Channel controller and		Stipulated Definitions of							
the second Fibre		Claim Terms at 2, Fore							
Channel controller to		Decl. ISO Crossroads'							
allow access from		Cl. Const. Br., Ex. M							
workstations to storage		(parties in Dot Hill							
devices in accordance		litigation adopted		· · · · · · · · · · · · · · · · · · ·					
with the configuration.		Crossroads' proposed construction); Microsoft			·				

Special Master's Proposed Construction of Disputed Terms							
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction		
		Press Computer Dictionary 368 (1991),			-		
		Fore Decl. ISO					
		Crossroads' Cl. Const.			-		
·		Br., Ex. Z ("workstation"			-		
		is understood to be a					
		broad term in the art).					
· · · · · ·							
supervisor unit coupled	Access control(s):	Access control(s):	Access controls:	See '035 patent, claim 1.	"Controls which limit a		
o the first and second			and the state of the state of the		device's access to a		
Fibre Channel	"Controls which limit a	Intrinsic:	Controls that use a map		specific subset of storage		
controllers and the	device's access to a		to permit a particular		devices or sections of a		
ouffer, the supervisor	specific subset of storage	Fig. 3, Col. 3, 11. 7-59,	device to read data from		single storage device		
unit operable:	devices or sections of a	Col. 4, 11. 7-27, 33-35,	or write data to a		according to a map."		
maintain a	single storage device	40-43, 48-50, 50-53	particular storage space				
configuration for the	according to a map."	(Fig. 3 shows	assigned to the device,				
torage devices that		embodiment in which all	and to prevent the device				
naps between		workstations can access	from reading data to or				
workstations and		global storage device).	writing data from				
storage devices and			storage space assigned to other devices.				
hat implements the access controls for		Col. 4, ll. 7-11 ("access controls" applies to	other devices.				
torage space on the		shared storage).					
torage devices; and		shared storage).					
process data in the		July 22, 2005 Reply to					
buffer to interface		Office Action at 13-14,					
between the first Fibre		Fore Decl. ISO					
Channel controller and		Crossroads' Post-Hr'g					
he second Fibre		Cl. Const. Br., Ex. F					
Channel controller to		(discussion during					
llow access from		reexamination, that the					
vorkstations to storage		"access controls" feature					
evices in accordance		includes the concept of					
with the configuration.		allowing multiple					
		devices to have access to					
		shared storage).					
	<u>_</u>						
		7	1				

Actual Claims	Crossroads' Proposed	Special Master's Proposed Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
Dungunge		Extrinsic:			
		Extransic.		-	
		Chaparral Markman		•	
		Order at 3-7, 15, Fore			
		Decl. ISO Crossroads'		•	
	· · · ·	Cl. Const. Br., Ex. L			
		(Crossroads'			
		construction parallels			
		historic construction; the			
		invention contemplates			
	, .	using access controls for			
		an entire storage device			
		as well as shared			
		storage; Court has			
		rejected a construction in			
		which a particular subset			
		of storage could only be			
		accessed by a single			
		workstation).			
		Comments on Statement			
		of Reasons for			
		Patentability and/or			
		Confirmation, Fore Decl.		· · · · · · · · · · · · · · · · · · ·	
		ISO Pl.'s Cl. Const. Br.,			
		Ex. I (patentees			
		expressly disagreed with			
		any characterization of			
		the claims that were			
		"inconsistent with the	$(1,1,2,\dots,n) = (1,1,2,\dots,n) = (1,1,2,\dots,n)$		
		claim language,			
		specification or prior			
		prosecution history.").			
	· ·	prosecution instory.).			
					1

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
laim 10:	and a second second			a second for	
method for providing	Configuration:	Configuration:	Configuration:	See claim 1, supra.	No Construction
virtual local storage on					Necessary.
remote storage devices	"A modifiable setting of	Intrinsic:	"Map"; otherwise		
to Fibre Channel	information."	1. S. R. S. S.	indefinite.		
devices, comprising:		Col. 2, Il. 19-23; Col. 5,			
interfacing with a first		ll. 53-54; Col. 6, ll. 58-			
Fibre Channel		64 (describing			
transport medium;		"configuration" as			
nterfacing with a second		information used to			
Fibre Channel		control operation of the			
transport medium;		storage router and which			
naintaining a		is modifiable).			
configuration for					
remote storage devices		'147 Patent: Col. 2, 11.			
connected to the		28-32; Col. 9, 11. 36-41			
second Fibre Channel		("configuration" can also			
transport medium that		include mapping			
maps between Fibre		information and			
Channel devices and		additional information,			
the remote storage		such as information			
devices and that		needed to "implement[]			
implements access		access controls").			
controls for storage					
space on the remote		Claim 15, Col. 11, ll. 23-			
storage devices; and	,	28 (the limitation			
-		"operable to maintain a			
		configuration wherein			
		the configuration			
		includes a map"			
		would be meaningless			
	· .	under Defendants'			
		proposed construction).			
		Extrinsic:			
					· · · · · · · · · · · · · · · · · · ·
	1	Chaparral Markman			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		Order at 16, Fore Decl.		-	
. · ·	· · · · · · · · · · · · · · · · · · ·	ISO Crossroads' Cl.			
		Const. Br., Ex. L (parties	· .		
		to earlier action agreed			
		to construe "maintain a			
		configuration" to mean			
		"keeping a modifiable			
		setting of information");			
		February 22, 2011 Decl.			
		of John Levy, Ph.D., ¶46			
		(person of ordinary skill			
		would understand			
		"maintaining a			
		configuration" to mean			
		"keeping a modifiable			and the second
		set of information").	· · · · · · · · ·		
A method for providing	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
virtual local storage on					Necessary.
remote storage devices	"Computing device that	Intrinsic:	Computer.		recessury.
to Fibre Channel	issues storage access				
devices, comprising:	requests."	Claim 1, Col. 9, 11. 27-30			
nterfacing with a first	requests.	("devices" refers to the			
Fibre Channel		devices that make			
transport medium;		requests and are allowed			
nterfacing with a second		access to storage			
Fibre Channel		devices).			
transport medium;		devices).			
naintaining a		Col. 1, Il. 36-37; Col. 2,			
configuration for		11. 4-5; Col. 4, 11. 55-56;			
remote storage devices		Col. 8, 11. 65-68 (the			
connected to the		specification describes			
second Fibre Channel		the devices that make			
transport medium that		requests to access the		-	
maps between Fibre		storage devices as			
Channel devices and		"computing devices").		· · · · · · · · · · · · · · · · · · ·	
		computing devices").			
the remote storage devices and that		Col. 1, ll. 57-60 ("from			
ucvices and that		T V ADI. T. H. 37-OUE TOM		1	

		Special Master's Proposed	Construction of Disputed T	'erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
implements access		the perspective of a			
controls for storage		workstation, or other			
space on the remote		computing device,			
storage devices; and		seeking to access such			
		server data, the access is much slower than access			
		to data on a local storage			
		device ").			-
	-	Claim 3, Col. 9, 11. 37-39			
		(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			· · · · ·
		broader than			
		"workstations").			
		Col. 6, 11. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11. 3-6, 41-43; Col. 4, 11. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			
		workstations,			
		input/output devices,			
	l	"initiator" and "target"	ļ		

			Construction of Disputed T		<u></u>
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
]	devices).			
		April 6, 2005 Reply to			
	· · · · · · · · · · · · · · · · · · ·	Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,		-	
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over			
	· · ·	ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).	A second seco		
					and and a second se
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would			
		understand that in the			
		embodiments at Col. 6,			
		11. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).		-	
		The McGraw-Hill			
		Illustrated Dictionary of			

Actual Claims Language	Crossroads' Proposed Construction	Special Master's Proposed Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Personal Computers 126 (4 th ed. 1995), Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. W (defining device as "a mechanical, electrical or electromechanical contrivance or appliance. Commonly used in reference to peripherals such as printers, CRTS and disk drives").			
		Hr'g Tr. at 202:24- 203:3, 205:4-7, Mar. 8, 2011 (Defendants' counsel agreeing that the defining characteristic of a device is that it is the thing that issues storage requests).			
		May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., ¶3 (a "network server" is a server that can request access to storage).			
		Microsoft Computer Dictionary 430 (3d Ed. 1997), May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., Ex. A (defining "server" as "(1) on a local area network (LAN), a			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers functioning			
		as workstations on the			
		network").			
		Special Master's Report			
		at 22, <i>Dot Hill</i>			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		(Court previously			
		construed "storage	·		
		router" as "a data			
		transmitting device that			
		allows users to integrate			
		different servers or			
		workstations into a		· · · · · · · · · · · · · · · · · · ·	· · · .
		storage network").			
				~	
method for providing	Access control(s):	Access control(s):	Access controls:	See '035 patent, claim 1.	"Controls which limit a
virtual local storage on					device's access to a
remote storage devices	"Controls which limit a	Intrinsic:	Controls that use a map		specific subset of storage
to Fibre Channel	device's access to a		to permit a particular		devices or sections of a
devices, comprising:	specific subset of storage	Fig. 3, Col. 3, 11. 7-59,	device to read data from		single storage device
terfacing with a first	devices or sections of a	Col. 4, 11. 7-27, 33-35,	or write data to a		according to a map."
Fibre Channel	single storage device	40-43, 48-50, 50-53	particular storage space		
transport medium;	according to a map."	(Fig. 3 shows	assigned to the device,		
interfacing with a		embodiment in which all	and to prevent the device		
second Fibre Channel		workstations can access	from reading data to or		
transport medium;		global storage device).	writing data from		
aintaining a			storage space assigned to		
configuration for		Col. 4, ll. 7-11 ("access	other devices.		
remote storage devices		controls" applies to			1
		7	Q		

Actual Claims LanguageCrossroads' Constru-connected to the second Fibre Channel transport medium that maps between Fibre Channel devices and the remote storage devices and that implements access controls for storage space on the remote storage devices; and	Proposed action share July 2 Offic Fore Cross Cl. C (discu reexa "acce	Crossroads' Evidence d storage). 22, 2005 Reply to e Action at 13-14, Decl. ISO sroads' Post-Hr'g onst. Br., Ex. F ussion during mination, that the	Construction of Disputed Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
connected to the second Fibre Channel transport medium that maps between Fibre Channel devices and the remote storage devices and that implements access controls for storage space on the remote	share July 2 Offic Fore Cross Cl. C (discu reexa "acce	d storage). 22, 2005 Reply to e Action at 13-14, Decl. ISO sroads' Post-Hr'g onst. Br., Ex. F ussion during			
	allow devic share Extri <i>Chap</i> Order Decl. Cl. C (Cros const histor inven using an en as we storag reject which of sto acces	ess controls" feature des the concept of ving multiple ses to have access to ed storage).			

Special Master's Proposed Construction of Disputed Terms									
	al Claims nguage	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction			
	<u> </u>		Patentability and/or						
			Confirmation, Fore Decl.						
			ISO Pl.'s Cl. Const. Br.,						
			Ex. I (patentees						
			expressly disagreed with						
			any characterization of						
			the claims that were						
			"inconsistent with the			-			
			claim language,		· · · · · ·				
			specification or prior						
			prosecution history.").						
			F	· · · ·					
llowing a	ccess from	Allow accessto the	Allow access to the	Allow accessto the	See '035 patent, claim 1.	"Permit or deny acce using the NLLBP of the Virtual Local Storage without involving a translation from high level network protocols or file system protocols			
Fibre Ch	annel initiator	remote storage devices	remote storage devices	remote storage devices		using the NLLBP of			
devices t	o the remote	using native low level,	using native low level,	using native low level,		the Virtual Local			
storage of	levices using	block protocol:	block protocol:	block protocol:		Storage without			
native lo	w level, block	_		_		involving a translatio			
	in accordance	"Permit or deny reading	Intrinsic:	Permit reading and		from high lovel			
with the	configuration.	or writing of data using		writing of data in the		ironi nign level			
		the NLLBP of the	Fig. 1, Col. 1, Il. 49-54;	native low level, block		network protocols or			
		Virtual Local Storage	Col. 3, ll. 17-23 (the	protocol of the storage					
		without involving a	"storage router" of the	device, without		to a native low level			
		translation from a high	invention is contrasted	involving network		block protocol			
		level file system	with a "network server"	servers, Ethernet	and the second	request."			
		command to a native low	that allowed access to	networks, higher-level					
		level, block protocol	storage devices by	protocols such as	1997 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -				
		request."	translating high level file	TCP/IP, Ethernet					
			system commands of the	protocols, network					
			"network protocol" into	protocols or file system					
			low level requests (i.e.,	protocols, or translation					
			NLLBP) and sending the	from one protocol to					
			NLLBP to the physical	another.					
			storage devices).						
			Claim 1, Col. 9, 11. 13-30						
			(storage router "allow[s] access from devices						
			I BOOGER TROM MANICAR						

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		connected to the first			
		transport medium to the			
		storage devices using			
		native low level, block			
		protocols" (emphasis			
		added); the storage router, specifically, the			
	-	supervisor unit within			
		the storage router, "uses"			
	· · · ·	the NLLBP to permit or			
		enable access).			
		Col. 4, 11. 7-47			
		(invention of patents-in-			
		suit provides "virtual			
		local storage" that			
		appears to a workstation			
		as local storage, and			
		appears to have the same			
		characteristics of local			
		storage).			
		Col. 4, ll. 44-57 ("virtual			
		local storage" is			
		"provided" by the			
		storage router in a			
		manner that is			
		transparent to the			
		devices requesting			
		storage access).			
		Col. 5, ll. 11-17, ll. 24-			
		27 (supervisor unit			
		within the storage router			
		processes NLLBP			
		requests from the			
		devices to access			
		8	1		
		Ο.	A		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		permitted storage).			
		Abstract; Col. 2, Il. 12-			
		15, 17-20, 24-27; Col. 3,			
		11. 59-63; Col. 3, 11. 51-			
		53; Col. 4, 11. 2-6; Col. 5,			
		11. 1-5; Col. 9, 11. 28-31;			
		Col. 10, ll. 9-11	and the second secon		
		(specification discloses that NLLBPs are used			
		by, and at, the storage			
		router to allow access).	an a		
		Col. 6, 11. 33-41, 46-56			
		(specification describes			
		two embodiments			
		wherein "devices"			
		making the storage			
		access request are			
		servers).			
		Col. 1, ll. 57-60 ("from			
		the perspective of a workstation, or other			
		computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage	-		
		device ").			
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim		1	
		differentiation require			
		"devices," as a group, must necessarily be			
	-	broader than			
			<u> </u>		• • • • • • • • • • • • • • • • • • •
		8	2		

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed Te Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
· · · · · ·		"workstations").			
		Col. 3, 11. 17-23 (the			
		"network protocol" used			
		by the prior art "network			
		servers" to allow access			
		to storage devices is a			
		protocol that includes a			
		high level file system			
		command that must be			
		translated into low level			
		storage requests).			
		April 6, 2005 Reply to			
		Office Action at 10-11,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. E;			
		July 22, 2005 Reply to			
		Office Action at 24-27,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		(Crossroads			
		distinguished Petal,			
		Spring and Oeda as			
		having a server that			
		provided controlled			
		access to storage was			
		required to translate high			
		level file system			
		commands into low level			
		commands in order to			
		send the NLLBP to the			
		storage devices).			
		April 6, 2005 Reply to			

		Special Master's Proposed	Construction of Disputed	Terms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Lungungo	Construction	Office Action at 8-11,			
		19, 22-23, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		E; July 22, 2005 Reply			
		to Office Action at 11-			
		17, 21-28, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
i i tra		F (showing that			
		Crossroads did not make			
		a sweeping disclaimer of			
		any use of a "network			
		server"; Crossroads			· · · · ·
		distinguished its			
		invention from Oeda,			
		Petal and Spring based		· · ·	
		on the requirement that			
		the "network server"			
		that provided controlled			
		access to storage was			
		required to translate the		-	
		high level file system			
		command into low level			
· · · · · · · · · · · · · · · · · · ·		commands in order to			
		send the NLLBP to the			
		storage device, not the			
		use of Ethernet	-	· · · · ·	
· · · · · · · · · · · · · · · · · · ·		networks, Ethernet or			-
		TCP/IP).			
		Col. 2, 11. 17-20; Col. 5,			
		11. 19-22, 50-57, 60-63;			
		Col. 6, 11. 32-37; '147			
		Patent, Claim 1, Col. 9,	· · ·		
		Il. 28-32 (disclosing and			
		claiming embodiments			

Special Master's Proposed Construction of Disputed Terms							
Crossroads' Proposed	Crossroads' Evidence	Defendants' Proposed	Defendants'	Special Master's Construction			
	using Fibre Channel; the inclusion of "without involving network protocols" according to Defendants' expert would prohibit the use of Fibre Channel despite the fact that these are						
	express embodiments). Col. 5, ll. 53-56 (Fibre Channel is a protocol used for communications over "Fibre Channel based networks").						
	Extrinsic: March 7, 2011 Supp. Decl. of John Levy, Ph.D., ¶¶ 9-13 (data transfer in networks best understood as having layers; when TCP/IP and Ethernet protocols were						
	to transport high level network file system requests, a network server would translate such requests into low level requests to access storage); ¶¶6-7 (prior art "server" described in						
		Crossroads' Proposed ConstructionCrossroads' Evidenceusing Fibre Channel; the inclusion of "without involving network protocols" according to Defendants' expert would prohibit the use of Fibre Channel despite the fact that these are express embodiments).Col. 5, 11. 53-56 (Fibre Channel is a protocol used for communications over "Fibre Channel based networks").Extrinsic: March 7, 2011 Supp. Decl. of John Levy, Ph.D., ¶¶ 9-13 (data transfer in networks best understood as having layers; when TCP/IP and Ethernet protocols were used by prior art systems to transport high level network file system requests, a network server would translate such requests into low level requests to access storage); ¶¶6-7 (prior art	Crossroads' Proposed ConstructionCrossroads' EvidenceDefendants' Proposed Constructionusing Fibre Channel; the inclusion of "without involving network protocols" according to Defendants' expert would prohibit the use of Fibre Channel despite the fact that these are express embodiments).Col. 5, II. 53-56 (Fibre Channel is a protocol used for communications over "Fibre Channel based networks").Extrinsic:March 7, 2011 Supp. Decl. of John Levy, Ph.D., ¶ 9-13 (data transfer in networks best understood as having layers; when TCP/IP and Ethernet protocols were used by prior art systems to transport high level network file system requests into low level requests to access storage); ¶¶6-7 (prior art "server" described in	Crossroads' Proposed Construction Crossroads' Evidence Defendants' Proposed Construction Defendants' Evidence using Fibre Channel; the inclusion of "without involving network protocols" according to Defendants' expert would prohibit the use of Fibre Channel despite the fact that these are express embodiments). Image: Color State Stat			

	Special Master's Proposed Construction of Disputed Terms						
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction		
		the device requesting "access to data" and the storage devices using something called a "network protocol"; such "servers" implemented file systems and received high level file system protocols from devices					
		requesting data access). April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶4 (person of ordinary skill would understand that the specification discloses a server that sends requests for storage access to a storage router using NLLBP).					
		May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., ¶3 (a "network server" is a server that can request access to storage). <u>Microsoft Computer</u> <u>Dictionary</u> 430 (3d Ed. 1997), May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., Ex. A (defining "server" as "(1) on a local area					

Actual Claims	Crossroads' Proposed	Crossroads'	oads' Defendants' Proposed Defendants'		Special Master's	
Language	Construction	Evidence	Construction	Evidence	Construction	
		computer running				
	1	administrative software				
		that controls access to				
		the network and its				
		resources, such as				
		printers and disk drives,				
		and provides resources				
		to computers functioning				
		as workstations on the				
		network").		• · · · ·		
		network).				
	1	Special Master's Report		(
		at 22, Dot Hill				
		Litigation, Pl.'s Cl.				
	-	Const. Hr'g Ex. P-15				
		(Court previously				
		construed "storage				
		router" as "a data				
		transmitting device that				
		allows users to integrate				
		different servers or				
		workstations into a				
		storage network").				
		Hr'g Tr. 76:4-10, 82:20-				
		23, March 8, 2011 (in				
		hypothetical network of				
		Graphic 2 of Defendants'				
		Markman				
		Demonstratives (Fore				
		Decl. ISO Pl's Post-Hr'g				
		Cl. Const. Br., Ex. J) the				
		workstation sends high				
		level file systems				
		commands to network				
		server); Id. at 200:2-5,				
		201:22-24, 202:24-203:3				

· · · · · · · · · · · · · · · · · · ·		Special Master's Proposed	Construction of Disputed Te	erms	·
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		(Defendants expressly		· · · · · · · · · · · · · · · · · · ·	
		stated that a "device" is a			
		"computer" that is both			
		"reading or writing data			
		from a storage device"		1 · ·	
		and sending NLLBPs			
		and the only "device"			
		that does so in Graphic			
		2, shown in Crossroads'			
		Post-Hearing Brief is the		· · · · · · · · · · · · · · · · · · ·	
		"network server").			• ¹
		Crossroads' Concise			
		Statement of			
		Infringement, Dot Hill			
		Litigation (Case No. A-			
		03-CV-754 SS), Fore			
		Decl. ISO Pl.'s Post-Hr'g			
		Cl. Const. Br., Ex. H;			
		April 28, 2011 2d Supp.		-	
		Decl. of John Levy,			
		Ph.D., ¶5 (accused			
		devices in Dot Hill			
		litigation were designed			
		to be used in			
		hypothetical system			
		shown in Graphic 2 of			
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-Hr'g			
		Cl. Const. Br., Ex. J)).			
		Hr'g Tr. at 81:12-15,			
		March 8, 2011 (all			
		parties agree that the			
		Petal, Spring and Oeda			
		references disclose			

					. .				
	Special Master's Proposed Construction of Disputed Terms								
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction				
		systems with a "server" interposed between workstations and storage devices); <i>Id.</i> at							
		88:2-89:16; 93:4-7; 100:16-24 (Defendants							
		agree that the "translation" distinguished by							
		patentees during reexamination was from high level file system							
		commands into NLLBP requests); <i>Id.</i> at 89:11-16 (parties agree that							
		"allowing access using NLLBP" occurs without a translation							
		from a high level file system command to a NLLBP request); <i>Id.</i> at							
		91:14-16, 92:1-5, 152:4- 7 (Defendants concede that the "network							
		protocols" described in the Oeda, Petal and							
		Spring references included file system commands thus,							
		including "without involving network protocols" is superfluous			C				
		to "without involving a translation from a high level file system							
		command to a native low level block protocol							

Actual Claims	Crossroads' Proposed	Special Master's Proposed Crossroads'	Defendants' Proposed	Defendants'	Special Master's	
Language	Construction	Evidence	Construction	Evidence	Construction	
		request.")			· · · · · · · · · · · · · · · · · · ·	
				-		
		April 28, 2011 2d Supp.				
		Decl. of John Levy,				
		Ph.D., ¶7 (CIFS, NFS				
		and FTP are network				
		protocols).				
	·	March 7, 2011 Decl. of				
		Brian Berg, ¶37				
		(Defendants' expert uses				
		term "network protocol"				
		broadly such that it				
		would include Fibre				
		Channel).				
		April 28, 2011 2d Supp.				
		Decl. of John Levy,				
		Ph.D., ¶3 (a workstation				
		gets "access to the local		· .		
		storage device through				
		native low level block				
		protocols").				
		Hele Te at 100 7 12				
		Hr'g Tr. at 129:7-13, March 8, 2011				
		(Defendants agreed to				
		remove "without		· · ·		
		involving Ethernet				
		networks, Ethernet				
		protocols, TCP/IP" from				
		their proposed				
	· .	construction).March 7, 2011 Supp. Decl. of				
		John Levy, Ph.D., ¶13				
		(Ethernet and TCP/IP				
		protocols are concerned				

Special Master's Proposed Construction of Disputed Terms								
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction			
		only with delivery of messages).						
		February 22, 2011 Decl. of John Levy, Ph.D., ¶36 (NLLBP "used" by the						
		storage router to allow access is the NLLBP sent to it from the device; this NLLBP is						
		the NLLBP appropriate for the virtual local storage, not the NLLBP of the storage device						
		storing the data). Dictionary of Computer						
		and Internet Terms 311 (6 th Ed. 1996), Fore Decl. ISO Pl.'s Cl. Const. Br., Ex. S						
		(defining "native" as "1. designed for a specific hardware or software environment (rather than						
		for compatibility with something else)").						
		Stip. Defs. of Cl. Terms, Fore Decl. ISO Pl.'s Post-Hr'g Cl. Const. Br., Ex. I (parties agree that						
		"virtual local storage" is "storage space, in a storage device that is						
·		remotely connected to an initiator device to be						

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		within or locally connected to the initiator device"). April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶6 (under			
		Defendants' construction, a protocol used for communication over "Fibre Channel based networks" would be a network protocol).			
llowing access from Fibre Channel initiator devices to the remote storage devices using native low level, block protocol in accordance with the configuration.	Initiator Device: "A device that issues requests for data or storage."	Initiator Device: Intrinsic: Col. 3, ll. 41-43; Col. 6, ll. 19-57 (specification generically refers to "initiator device" as a device requesting access to a target device).	Fibre Channel initiator device: A computer that issues a command on a Fibre Channel bus using Fibre Channel protocol.	See claim 1, supra.	"A device that issues requests for data or storage."
		Extrinsic: <i>Chaparral</i> Markman Order at 16, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L. (Crossroads' construction is the historic construction of term).			
0	Native low level block protocol ("NLLBP"):	Native low level block protocol:	Native low level block protocol:	See '035 patent, claim 1.	"A set of rules or standards that enable

Special Master's Proposed Construction of Disputed Terms								
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction			
devices to the remote storage devices using native low level, block protocol in accordance with the configuration.	Native: "Designed for use with a specific type of storage device." Block Protocol: "A set of rules or standards for exchanging information with a block-oriented storage device." Low Level Protocol: "A set of rules or standards that enable computers to exchange information without involving high level file system protocols." Or, in the alternative: Native Low Level Block Protocol: "A set of rules or standards designed for exchanging information with a block-oriented storage device without involving high level file system protocols."	Intrinsic: Abstract, Col. 1, 11. 44, Col. 2, 11. 13-14, 26; Col. 3, 11. 17, 22-23, 53, 63; Col. 4, 11. 4-5, 25; Col. 5, 1. 3; Claim 1, Col. 9, 11. 29-30; Col. 10, 1. 10; Col. 10, 11. 48-49 (specification consistently uses "NLLBP" as a single term). Fig. 1; Col. 3, 11. 20-23 (network server shown in Fig. 1 communicates with storage devices via NLLBPs even though the SCSI commands are sent by a network server). Fig. 1, Col. 1, 11. 49-54; Col. 3, 11. 17-23 (the "storage router" of the invention is contrasted with a "network server" that allowed access to storage devices by translating high level file system commands of the "network protocol" into low level requests (i.e., NLLBP) and sending the NLLBP to the physical	Does not need to be separately construed; alternatively, may be construed with reference to individual terms as follows: Native: Designed for use with a specific type of storage device. Low-level protocol: A set of rules or standards that enable computers to exchange information without involving network servers, Ethernet networks, or higher-level protocols such as TCP/IP, Ethernet protocols or file system protocols. Block protocol: A set of rules or standards for exchanging information with a block-oriented storage device		computers to exchange information and do not involve the overhead of high level protocols and file systems typically required by network servers."			

Actual Claims	Crossroads' Proposed	Special Master's Proposed Construction of Disput Crossroads' Defendants' Propose		Defendants'	Special Master's	
Language	Crossroads' Proposed Construction	Evidence	Construction	Evidence	Construction	
		storage devices).				
		storage ucvices).				
		Claim 1, Col. 9, 11. 13-30				
		(storage router "allow[s]				
		access from devices				
		connected to the first				
		transport medium to the				
		storage devices using				
		native low level, block				
and the second second second second		protocols" (emphasis				
		added); the storage				
		router, specifically, the				
		supervisor unit within	- · ·	-		
		the storage router, "uses"				
		the NLLBP to permit or				
		enable access).				
		chubic access).				
		Abstract; Col. 2, Il. 12-				
		15, 17-20, 24-27; Col. 3,				
		11, 59-63; Col. 3, 11, 51-				
		53; Col. 4, Il. 2-6; Col. 5,				
		11. 1-5; Col. 9, 11. 28-31;				
		Col. 10, ll. 9-11				
		(specification discloses				
		that NLLBPs are used				
		by, and at, the storage				
		router to allow access).				
		Col. 6, ll. 33-41, 46-56				
		(specification describes				
		two embodiments				
		wherein "devices"				
		making the storage				
		access request are servers).				
		SCIVCIS).				
		April 6, 2005 Reply to				
		April 0, 2003 Kepty to				

Actual Claims	Crossroads' Proposed	Special Master's Proposed Crossroads'	Defendants' Proposed	Defendants'	Special Master's	
Language	Construction	Evidence	Construction	Evidence	Construction	
		Office Action at 10-11,				
		Fore Decl. ISO				
		Crossroads' Post-Hr'g				
		Cl. Const. Br., Ex. E;				
	1	July 22, 2005 Reply to				
		Office Action at 24-27,				
		Fore Decl. ISO				
		Crossroads' Post-Hr'g				
		Cl. Const. Br., Ex. F				
		(Crossroads				
		distinguished Petal,				
		Spring and Oeda as		•		
		having a server that				
		provided controlled				
		access to storage was				
		required to translate high				
		level file system	· · ·			
		commands into low level				
		commands in order to	X			
		send the NLLBP to the				
		storage devices).				
		April 6, 2005 Reply to				
		Office Action at 8-11,				
		19, 22-23, Fore Decl.				
		ISO Crossroads' Post-				
		Hr'g Cl. Const. Br., Ex.				
		E; July 22, 2005 Reply				
		to Office Action at 11-				
		17, 21-28, Fore Decl.				
		ISO Crossroads' Post-				
		Hr'g Cl. Const. Br., Ex.				
		F (showing that				
		Crossroads did not make				
		a sweeping disclaimer of				
		any use of a "network				
		server"; Crossroads				

Special Master's Proposed Construction of Disputed Terms							
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction		
		distinguished its invention from Oeda, Petal and Spring based on the requirement that the "network server" that provided controlled access to storage was required to translate the high level file system command into low level commands in order to send the NLLBP to the storage device, not the use of Ethernet networks, Ethernet or TCP/IP).					
		Col. 2, ll. 17-20; Col. 5, ll. 19-22, 50-57, 60-63; Col. 6, ll. 32-37; '147 Patent, Claim 1, Col. 9, ll. 28-32 (disclosing and claiming embodiments using Fibre Channel; the					
		inclusion of "without involving network protocols" according to Defendants' expert would prohibit the use of Fibre Channel despite the fact that these are express embodiments).					
		Col. 5, ll. 53-56 (Fibre Channel is a protocol used for communications over "Fibre Channel					

' Special Master' Construction

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Actual Claime	Crossroade' Proposed	Actual Claims Crossroads' Proposed Crossroads' Defendants' Proposed Defendants' Special Master's						
Language	Construction	Evidence	Construction	Evidence	Construction			
		TCP/IP protocols are						
		concerned only with						
		delivery of messages).						
		March 7, 2011 Decl. of						
		Brian Berg ¶48 (a SCSI						
		command would be a						
		low level command).						
		March 7, 2011 Decl. of						
		Brian Berg, ¶37 (states						
		that "low level" means						
		"without involving						
		file system protocols.").						
		April 28, 2011 2d Supp.						
		Decl. of John Levy,						
		Ph.D., ¶4 (person of						
		ordinary skill would						
		understand that the						
		specification discloses a						
		server that sends						
		requests for storage						
		access to a storage router		•				
		using NLLBP).						
		Hr'g Tr. 76:4-10, 82:20-						
		23, March 8, 2011 (in hypothetical network of						
		Graphic 2 of Defendants'						
	· · · · · · · · · · · · · · · · · · ·	Markman						
		Demonstratives (Fore						
		Decl. ISO Pl's Post-Hr'g						
		Cl. Const. Br., Ex. J) the						
		workstation sends high						
		level file systems						
		commands to network	· ·					

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		server); Id. at 200:2-5,		· · · · · · · · · · · · · · · · · · ·	
		201:22-24, 202:24-203:3			
		(Defendants expressly			
		stated that a "device" is a			
		"computer" that is both			
		"reading or writing data	-		
		from a storage device"			
		and sending NLLBPs			
		and the only "device"			
		that does so in Graphic			
		2, shown in Crossroads'			
		Post-Hearing Brief is the			
		"network server").			
		Crossroads' Concise			
		Statement of			
		Infringement, Dot Hill			
		Litigation (Case No. A-			
		03-CV-754 SS), Fore			
		Decl. ISO Pl.'s Post-Hr'g			
		Cl. Const. Br., Ex. H;			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶5 (accused			
		devices in Dot Hill			
		litigation were designed			
		to be used in			
		hypothetical system			
		shown in Graphic 2 of			
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-Hr'g			
		Cl. Const. Br., Ex. J)).			
	Hele Tr. at 91.10.15				
	Hr'g Tr. at 81:12-15, March 8, 2011 (all				
		parties agree that the			
	·····	parties agree that the		·····	
		99)		

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		Petal, Spring and Oeda			
		references disclose			
		systems with a "server"			
		interposed between			
· · ·		workstations and			
		storage devices); Id. at			
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants			
1		agree that the			
		"translation"		м 	
		distinguished by			
		patentees during			
		reexamination was from			
		high level file system			1
		commands into NLLBP			
		requests); Id. at 89:11-16			
		(parties agree that			
		"allowing access	· · · · · · · · · · · · · · · · · · ·		
		using NLLBP" occurs			
		without a translation			
		from a high level file	. · · · ·		
		system command to a			
		NLLBP request); Id. at			
		91:14-16, 92:1-5, 152:4-			
		7 (Defendants concede			
		that the "network			
		protocols" described in			
		the Oeda, Petal and			
		Spring references			
		included file system			
		commands thus,	1		
		including "without			
		involving network			
		protocols" is superfluous			
		to "without involving a			
		translation from a high			
		level file system			

· · · · · · · · · · · · · · · · · · ·		Special Master's Proposed	Construction of Disputed	Terms	·
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
<u>00</u>		command to a native low			
		level block protocol			
		request.")			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶7 (CIFS, NFS			
		and FTP are network			
		protocols).			
				· · ·	
		March 7, 2011 Decl. of			
		Brian Berg, ¶37			
		(Defendants' expert uses			
		term "network protocol" broadly such that it			
		would include Fibre			
		Channel).			
		Channer).			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶6 (under			
		Defendants'			
		construction, a protocol			
		used for communication			
		over "Fibre Channel			
		based networks" would			
		be a network protocol).			
		February 22, 2011 Decl.		· · · · · · · · · · · · · · · · · · ·	
		of John Levy, Ph.D., ¶¶			
	[31, 33 (NLLBPs do not			
		have the overhead			
		associated with the use			
		of higher level protocols			
		to access storage); Id. ¶			
		34 (specification			
		describes network			· · · · · · · · · · · · · · · · · · ·

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language		servers communicating with storage using NLLBPs).	Construction	Evidence	Construction
Claim 11:					
The method of claim 10, wherein maintaining the	Configuration:	Configuration:	Configuration:	See claim 1, supra.	No Construction Necessary.
configuration includes allocating subsets of	"A modifiable setting of information."	Intrinsic:	"Map"; otherwise indefinite.		Treeessary.
storage space to associated Fibre Channel		Col. 2, ll. 19-23; Col. 5, ll. 53-54; Col. 6, ll. 58-			
devices, wherein each subset is only accessible by the associated Fibre		64 (describing "configuration" as information used to			
Channel device.		control operation of the storage router and which			
		is modifiable).			
		[•] 147 Patent: Col. 2, ll. 28-32; Col. 9, ll. 36-41 ("configuration" can also			
		include mapping information and			
		additional information, such as information			
		needed to "implement[] access controls").			
		Claim 15, Col. 11, ll. 23- 28 (the limitation			
		"operable to maintain a configuration wherein			
		the configuration includes a map" would be meaningless			
		under Defendants' proposed construction).			

Actual Claims		Special Master's Proposed Crossroads'	Defendants' Proposed	Defendants'	Special Master's	
Language	Crossroads' Proposed Construction	Evidence	Construction	Evidence	Construction	
Language		Evidence	Construction	Evidence	Construction	
		Extrinsic:				
		Extrastc.				
		Chaparral Markman				
		Order at 16, Fore Decl.				
		ISO Crossroads' Cl.				
		Const. Br., Ex. L (parties				
		to earlier action agreed				
		to construe "maintain a				
		configuration" to mean "keeping a modifiable		· · · · · · · · · · · · · · · · · · ·		
		setting of information"); February 22, 2011 Decl.				
•		of John Levy, Ph.D., ¶46 (person of ordinary skill				
		would understand				
		"maintaining a				
		configuration" to mean				
		"keeping a modifiable				
•		set of information").				
The method of claim 10,	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction	
wherein maintaining the	Device:	Device:	Device:	See 055 patent, claim 1.	Necessary.	
configuration includes	"Computing device that	Intrinsic:	Computer.		Necessary.	
allocating subsets of	issues storage access	Intrinsic:	Computer.			
		Claim 1, Col. 9, 11. 27-30				
storage space to associated Fibre Channel	requests."	("devices" refers to the				
levices, wherein each		devices that make				
-		requests and are allowed				
subset is only accessible by the associated Fibre		access to storage				
Channel device.		devices).				
Jilaimei device.		devices).				
		Col. 1, 11. 36-37; Col. 2,				
		11. 4-5; Col. 4, 11. 55-56;			· · ·	
		Col. 8, $11.65-68$ (the				
		specification describes the devices that make				
		requests to access the				

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
	· · · · · · · · · · · · · · · · · · ·	storage devices as			
		"computing devices").			
•		Col. 1, ll. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device, seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, ll. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, II. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68 ("devices" is used			
		broadly to refer to			
		various computing			
	· I · · · · · · · · · · · · · · · · · ·		······································		
		10	4		

Actual Claims	Crossroads' Proposed	Special Master's Proposed Crossroads'	Construction of Disputed Te Defendants' Proposed	rms Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		devices such as			
		workstations,	· · · · · · · · · · · · · · · · · · ·		
		input/output devices,			
		"initiator" and "target"			
		devices).			
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would			
		understand that in the			
		embodiments at Col. 6,			
		11. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			

···· - ···					
Actual Claims Language	Crossroads' Proposed Construction	Special Master's Proposed Crossroads' Evidence	Construction of Disputed Defendants' Proposed Construction	Terms Defendants' Evidence	Special Master's Construction
Language	Construction	Evidencerouter using NLLBP).The McGraw-HillIllustrated Dictionary ofPersonal Computers 126(4th ed. 1995), Fore Decl.ISO Crossroads' Cl.Const. Br., Ex. W(defining device as "amechanical, electrical orelectromechanicalcontrivance or appliance.Commonly used inreference to peripheralssuch as printers, CRTSand disk drives").Hr'g Tr. at 202:24-203:3, 205:4-7, Mar. 8,2011 (Defendants'counsel agreeing that thedefining characteristic ofa device is that it is thething that issues storagerequests).May 11, 2011 3d Supp.Decl. of John Levy,Ph.D., ¶3 (a "networkserver" is a server thatcan request access tostorage).Microsoft Computer	Construction	Evidence	
		Microsoft Computer Dictionary 430 (3d Ed. 1997), May 11, 2011 3d Supp. Decl. of John			

		Special Master's Proposed			
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Levy, Ph.D., Ex. A (defining "server" as "(1) on a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network"). Special Master's Report			
		Special Master's Report at 22, <i>Dot Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that allows users to integrate different servers or workstations into a storage network").			
laim 12:					
he method of claim 11, herein the Fibre hannel devices omprise workstations.	Device: "Computing device that issues storage access requests."	Device: Intrinsic: Claim 1, Col. 9, ll. 27-30 ("devices" refers to the devices that make requests and are allowed access to storage	Device: Computer.	See '035 patent, claim 1.	No Construction Necessary.

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		devices).			
		Col. 1, 11. 36-37; Col. 2,			
		ll. 4-5; Col. 4, ll. 55-56;			
		Col. 8, 11. 65-68 (the			
		specification describes			
		the devices that make			
		requests to access the			
		storage devices as			
		"computing devices").			
		0 1 1 11 57 60 440			
		Col. 1, 11. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
	· ·				
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, ll. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
	1	Abstract, Col. 1, ll. 21-			

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	Special Master's Proposed Construction of Disputed Terms								
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction				
	Construction	Evidence24, II. 36-37, II. 53-56;Col. 2, II. 4-6; Col. 3, II.3-6, 41-43; Col. 4, II. 38-42, II. 55-5642, II. 55-56Col. 8, II. 65-68("devices" is usedbroadly to refer tovarious computingdevices such asworkstations,input/output devices,"initiator" and "target"devices).April 6, 2005April 6, 2005Reply toOffice Action at 8, 10,12, 22, Fore Decl. ISOCrossroads' Post-Hr'gCl. Const., Ex. E; July22, 2005Reply to OfficeAction at 7-15, 21-23,27-29, 32, 33, 35-37, 39,Fore Decl. ISOCrossroads' Post-Hr'gCl. Const. Br., Ex. F("Device" is used overninety times in thereexaminationprosecution history torefer to types of devicescapable of makingrequests for storage).	Construction	Evidence	Construction				

Special Master's Proposed Construction of Disputed Terms						
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction	
		Ph.D., ¶ 4 (one of ordinary skill would understand that in the embodiments at Col. 6, II. 33-41; 46-56, it is the server that sends requests for storage access to the storage router using NLLBP). <u>The McGraw-Hill</u> <u>Illustrated Dictionary of</u> <u>Personal Computers</u> 126 (4 th ed. 1995), Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. W (defining device as "a mechanical, electrical or electromechanical contrivance or appliance. Commonly used in reference to peripherals such as printers, CRTS and disk drives"). Hr'g Tr. at 202:24- 2022 2025 4.7 M				
		203:3, 205:4-7, Mar. 8, 2011 (Defendants' counsel agreeing that the defining characteristic of a device is that it is the thing that issues storage requests). May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., ¶3 (a "network				

Special Master's Proposed Construction of Disputed Terms						
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction	
		server" is a server that				
		can request access to				
		storage).				
		Minnageft Commutan				
		Microsoft Computer Dictionary 430 (3d Ed.				
		1997), May 11, 2011 3d Supp. Decl. of John				
		Levy, Ph.D., Ex. A				
	-	(defining "server" as		н ст.		
		"(1) on a local area				
		network (LAN), a	- -			
		computer running				
		administrative software				
		that controls access to				
		the network and its				
		resources, such as				
		printers and disk drives,			·	
		and provides resources				
		to computers functioning				
		as workstations on the			· · ·	
		network").			· · · · · · · · · · · · · · · · · · ·	
		Special Master's Report				
		at 22, Dot Hill				
		Litigation, Pl.'s Cl.				
	· · · · · · · · · · · · · · · · · · ·	Const. Hr'g Ex. P-15				
		(Court previously				
		construed "storage				
		router" as "a data				
		transmitting device that				
		allows users to integrate				
		different servers or				
		workstations into a				
		storage network").				
e method of claim 11,	Workstations:	Workstations:	Workstation:	See '035 patent, claim 3.	"A computer having	
erein the Fibre					input/output devices	
		11	4	L		

		Special Master's Proposed	Construction of Disputed T	ſerms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Channel devices comprise workstations .	"A remote computing device that connects to the first (Fibre Channel) transport medium, and may consist of a personal computer."	Intrinsic: Col. 4, ll. 39-41 (specification defines workstation as a "computing device"). Extrinsic:	A computer including human input/output devices such as a display and keyboard and designed for use by one person at a time.		intended for use by humans."
		<i>Chaparral</i> Markman Order at 16, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L (Crossroads' construction consistent with historic construction); <i>Dot Hill</i> Stipulated Definitions of Claim Terms at 2, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. M (parties in <i>Dot Hill</i> litigation adopted Crossroads' proposed construction); <u>Microsoft</u> <u>Press Computer</u> <u>Dictionary</u> 368 (1991), Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. Z ("workstation"			
Claim 13: The method of claim 11, wherein the remote storage devices comprise	[No claim term at issue]	is understood to be a broad term in the art).	[No claim term at issue]		

Actual Claims	Crossroads' Proposed	Special Master's Proposed Crossroads'	Defendants' Proposed	Special Master's	
Language	Construction	Evidence	Construction	Defendants' Evidence	Construction
nard disk drives.		and the provide statement			
Claim 14:					
An apparatus for providing virtual local storage on a remote	Device: "Computing device that	Device: Intrinsic:	Device: Computer.	See '035 patent, claim 1.	No Construction Necessary.
storage device to a	issues storage access		F		
device operating	requests."	Claim 1, Col. 9, 11. 27-30			
according to a Fibre		("devices" refers to the			
Channel protocol,		devices that make			
comprising:		requests and are allowed			
		access to storage devices).			
		Col. 1, 11. 36-37; Col. 2,			
		11. 4-5; Col. 4, 11. 55-56;	and the second second second		
		Col. 8, 11. 65-68 (the			
		specification describes			
		the devices that make			
		requests to access the			
		storage devices as			
		"computing devices").			
		Col. 1, ll. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim			
		differentiation require		1	
		"devices," as a group,			
		must necessarily be	-		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		broader than			
		"workstations").			
			· · · · · · · · · · · · · · · · · · ·		
		Col. 6, 11. 31-41, 46-56			
		(the specification describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, ll. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23, 27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over			
					· · · · · · · · · · · · · · · ·
		11			
		an an tha Angla Angl Angla Angla Ang	•		

		Special Master's Proposed	Construction of Disputed 7	ſerms	35-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		ninety times in the reexamination prosecution history to refer to types of devices capable of making requests for storage). Extrinsic:			
		April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶ 4 (one of ordinary skill would			
		understand that in the embodiments at Col. 6, ll. 33-41; 46-56, it is the server that sends requests for storage access to the storage router using NLLBP).			
		The McGraw-Hill Illustrated Dictionary of Personal Computers 126 (4 th ed. 1995), Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. W (defining device as "a			
		mechanical, electrical or electromechanical contrivance or appliance. Commonly used in reference to peripherals such as printers, CRTS and disk drives").			
		Hr'g Tr. at 202:24-			

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		203:3, 205:4-7, Mar. 8,			
		2011 (Defendants'			
		counsel agreeing that the			~
		defining characteristic of			
		a device is that it is the			
		thing that issues storage			
		requests).			
	·	May 11, 2011 3d Supp.			
		Decl. of John Levy,			-
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running			
	· · · · · · · · · · · · · · · · · · ·	administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers functioning			
		as workstations on the			
		network").			
		Special Master's Report			
		at 22, <i>Dot Hill</i> Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		Colist. III g Ex. 1-15			
		11	6		

Special Master's Proposed Construction of Disputed Terms								
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction			
		(Court previously construed "storage router" as "a data transmitting device that allows users to integrate different servers or workstations into a storage network").						
a first controller operable to connect to and interface with a first transport medium, wherein the first transport medium is operable according to the Fibre Channel protocol; a second controller operable to connect to and interface with a second transport medium, wherein the second transport medium is operable according to the Fibre Channel protocol; and a supervisor unit coupled to the first controller and the second controller, the supervisor unit operable to control access from the device connected to the first transport medium to	Control access: "To limit a device's access to a specific subset of storage devices or sections of a single storage device according to a map."	Control access: Intrinsic: Fig. 3, Col. 3, ll. 7-59, Col. 4, ll. 7-27, 33-35, 40-43, 48-50, 50-53 (Fig. 3 shows embodiment in which all workstations can access global storage device). Col. 4, ll. 7-11 ("access controls" applies to shared storage). July 22, 2005 Reply to Office Action at 13-14, Fore Decl. ISO Crossroads' Post-Hr'g Cl. Const. Br., Ex. F (discussion during reexamination, that the "access controls" feature includes the concept of allowing multiple devices to have access to	Control access: Use a map to permit a particular device to read data from or write data to a particular storage space assigned to the device, and to prevent the device from reading data to or writing data from storage space assigned to other devices. accessto the remote storage deviceusing native low level, block protocols: Reading and writing of data in the native low level, block protocol of the storage device, without involving network servers, Ethernet networks,	See '035 patent, claim 1. See ''allow[ing] accessusing native low level, block protocol" at '035 patent, claim 1.	"To limit a device's access to a specific subset of storage devices or sections of a single storage device according to a map."			

	:				
			Construction of Disputed		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language device connected to the second transport medium using native low level, block protocols according to a map between the device and the remote storage device.	Construction	Evidence Extrinsic: Chaparral Markman Order at 3-7, 15, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L (Crossroads' construction parallels historic construction; the invention contemplates using access controls for an entire storage device as well as shared storage; Court has rejected a construction in which a particular subset of storage could only be	such as TCP/IP, Ethernet protocols, network protocols or file system protocols, or translation from one protocol to another.	Evidence	Construction
aunamiaan mit aaunlad	Notive low level block	accessed by a single workstation). Comments on Statement of Reasons for Patentability and/or Confirmation, Fore Decl. ISO Pl.'s Cl. Const. Br., Ex. I (patentees expressly disagreed with any characterization of the claims that were "inconsistent with the claim language, specification or prior prosecution history."). Native low level block		Sag (025 nature algum 1	"A set of myles on
supervisor unit coupled to the first controller and the second	Native low level block protocol ("NLLBP"):	Native low level block protocol:	Native low level block protocol:	See '035 patent, claim 1.	"A set of rules or standards that enable computers to exchange

		Special Master's Proposed	Construction of Disputed T	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
controller, the	Native:	Intrinsic:	Does not need to be		information and do not
supervisor unit	"Designed for use with a		separately construed;		involve the overhead
operable to control	specific type of storage	Abstract, Col. 1, 11. 44,	alternatively, may be		of high level protocols
access from the device connected to the first	device."	Col. 2, ll. 13-14, 26; Col.	construed with reference to individual terms as		and file systems
transport medium to	Block Protocol:	3, ll. 17, 22-23, 53, 63; Col. 4, ll. 4-5, 25; Col. 5,	follows:		and file systems typically required by network servers."
the remote storage	"A set of rules or	1. 3; Claim 1, Col. 9, ll.	jouows:		network servers."
device connected to the	standards for exchanging	29-30; Col. 10, l. 10;	Native:		
second transport	information with a	Col. 10, 11. 48-49	Designed for use with a		
medium using native	block-oriented storage	(specification	specific type of storage		E E
low level, block	device."	consistently uses	device.		
protocols according to	device.	"NLLBP" as a single	device.		Č
a map between the	Low Level	term).	Low-level protocol:		
device and the remote	Protocol:		A set of rules or		
storage device.	"A set of rules or	Fig. 1; Col. 3, 11. 20-23	standards that enable		
storage device.	standards that enable	(network server shown	computers to exchange		
	computers to exchange	in Fig. 1 communicates	information without		
	information without	with storage devices via	involving network		
	involving high level file	NLLBPs even though	servers, Ethernet		
	system protocols."	the SCSI commands are	networks, or higher-level		t i i i i i i i i i i i i i i i i i i i
	I	sent by a network	protocols such as		
	Or, in the alternative:	server).	TCP/IP, Ethernet		
	, ,		protocols, network		
	Native Low Level	Fig. 1, Col. 1, 11. 49-54;	protocols or file system		
	Block Protocol:	Col. 3, ll. 17-23 (the	protocols.		Ē.
		"storage router" of the			
	"A set of rules or	invention is contrasted	Block protocol:		
	standards designed for	with a "network server"	A set of rules or		
	exchanging information	that allowed access to	standards for exchanging		
	with a block-oriented	storage devices by	information with a		
	storage device without	translating high level file	block-oriented storage		
	involving high level file	system commands of the	device		
	system protocols."	"network protocol" into			
		low level requests (i.e.,			
		NLLBP) and sending the			
		NLLBP to the physical			
		storage devices).			

		Special Master's Proposed	Construction of Disputed T	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Claim 1, Col. 9, 11. 13-30			
		(storage router "allow[s]			
		access from <u>devices</u>			
		connected to the first			
		transport medium to the		×	
		storage devices using			
		native low level, block			
		protocols" (emphasis			
		added); the storage			
		router, specifically, the supervisor unit within			
		the storage router, "uses"			
		the NLLBP to permit or			
		enable access).			
		Abstract; Col. 2, Il. 12-			
		15, 17-20, 24-27; Col. 3,			
		ll. 59-63; Col. 3, ll. 51-			
		53; Col. 4, 11. 2-6; Col. 5,			
		11. 1-5; Col. 9, 11. 28-31;			
		Col. 10, 11. 9-11			
		(specification discloses			
		that NLLBPs are used by, and at, the storage			
		router to allow access).			
		Touter to anow access).			
		Col. 6, 11. 33-41, 46-56			
		(specification describes			
		two embodiments			
		wherein "devices"			
		making the storage			
		access request are			
		servers).			
		April 6, 2005 Reply to			
		Office Action at 10-11,	· · · · · · · · · · · · · · · · · · ·		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Construction		Construction	Емаенсе	Construction
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. E;			
		July 22, 2005 Reply to			
		Office Action at 24-27, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F (Crossroads			
		distinguished Petal, Spring and Oeda as			
				· · · · · · · · · · · · · · · · · · ·	
		having a server that			
		provided controlled			
		access to storage was			
		required to translate high			
		level file system commands into low level			
		commands into low level			
		send the NLLBP to the			
		storage devices).			
		April 6, 2005 Reply to			
		Office Action at 8-11,			
		19, 22-23, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		E; July 22, 2005 Reply			
		to Office Action at 11-			
		17, 21-28, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		F (showing that			
		Crossroads did not make			
		a sweeping disclaimer of			
		<i>a sweeping disclaimer of</i> <i>any</i> use of a "network			
		server"; Crossroads			
		distinguished its			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		invention from Oeda,			
		Petal and Spring based			
		on the requirement that			
		the "network server"			
		that provided controlled			
		access to storage was			
		required to translate the			
		high level file system			
		command into low level			
		commands in order to			
		send the NLLBP to the			
		storage device, not the			
		use of Ethernet			
		networks, Ethernet or			
		TCP/IP).			
		Col. 2, Il. 17-20; Col. 5,			
		11. 19-22, 50-57, 60-63;			
		Col. 6, 11. 32-37; '147			
		Patent, Claim 1, Col. 9,			
		11. 28-32 (disclosing and			
		claiming embodiments			
		using Fibre Channel; the			
		inclusion of "without			
		involving network			
		protocols" according to			
		Defendants' expert			
		would prohibit the use of			
		Fibre Channel despite			
		the fact that these are			
		express embodiments).			
		Col. 5, 11. 53-56 (Fibre			
		Channel is a protocol			
		used for communications			
		over "Fibre Channel			
		based networks").			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		0-1 1 11 42 52 0-1 2			
		Col. 1, 11. 42-53; Col. 3,			
		ll. 16-24; Col. 5, ll. 1-5			
		(specification notes that NLLBPs do not involve			
		overhead of high level			
		network protocols or file			
		systems).			
		Col. 6, 11. 31-41, 46-56			
		(specification has two			
		distinct embodiments in			
		which the "devices"			
		making storage requests			
		are servers).			
		and the second			
		Extrinsic:			
		March 7, 2011 Supp.			
		Decl. of John Levy,			
		Ph.D., ¶2; March 7, 2011			
		Decl. of Brian Berg ¶42			
		(experts agree that			
		"NLLBP" is not a term			
		of art).			
		Hr'g Tr. at 121:8-16,			
		March 8, 2011 (parties			
		agree that "NLLBP"			
		should be construed as a			
		single term, consistent			
		with use in specification)			
		March 7, 2011 Supp.			
		Decl. of John Levy,			
		Ph.D., ¶13 (Ethernet and			
		TCP/IP protocols are			
		n an an taon a Taon an taon an			
		12	3		

ctual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		concerned only with			
		delivery of messages).			
		March 7, 2011 Decl. of			
		Brian Berg ¶48 (a SCSI			
		command would be a			
		low level command).	· · · ·		
		March 7, 2011 Decl. of			· · · · · ·
		Brian Berg, ¶37 (states			
		that "low level" means			
		"without involving			
		file system protocols.").			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶4 (person of			
		ordinary skill would understand that the			
		specification discloses a			
		server that sends			
		requests for storage			
		access to a storage router using NLLBP).			
		Hr'g Tr. 76:4-10, 82:20-			
		23, March 8, 2011 (in hypothetical network of			
		Graphic 2 of Defendants'			
		Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-Hr'g Cl. Const. Br., Ex. J) the			
		workstation sends high		·	
		level file systems			
		commands to network			
		server); Id. at 200:2-5,			
		12	24		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		201:22-24, 202:24-203:3			
		(Defendants expressly			
		stated that a "device" is a			
		"computer" that is both			
		"reading or writing data			
		from a storage device"			
		and sending NLLBPs			
		and the only "device"			
		that does so in Graphic			
		2, shown in Crossroads'			
		Post-Hearing Brief is the			
		"network server").			
				· · · ·	
		Crossroads' Concise			
		Statement of			
		Infringement, Dot Hill			
		Litigation (Case No. A-			
		03-CV-754 SS), Fore			
		Decl. ISO Pl.'s Post-Hr'g			
		Cl. Const. Br., Ex. H;			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶5 (accused			
		devices in Dot Hill			
		litigation were designed			
		to be used in			
		hypothetical system			
	1	shown in Graphic 2 of			
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-Hr'g			
		Cl. Const. Br., Ex. J)).			
		Hele Tr. of 91,10,15			
		Hr'g Tr. at 81:12-15,			
		March 8, 2011 (all			
		parties agree that the Petal, Spring and Oeda			
	. L	i etai, spring and Oeda			
		12	5		
		14			

ctual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		references disclose			
		systems with a "server"			
		interposed between			
		workstations and			·
		storage devices); Id. at			
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants			
		agree that the			
		"translation"			
		distinguished by			
		patentees during			
		reexamination was from			
		high level file system			
		commands into NLLBP			
		requests); <i>Id.</i> at 89:11-16			
		(parties agree that			
		"allowing access			
		using NLLBP" occurs			
		without a translation			
		from a high level file			
		system command to a			
		NLLBP request); Id. at			
		91:14-16, 92:1-5, 152:4-			
		7 (Defendants concede			
		that the "network			
		protocols" described in			
		the Oeda, Petal and			
		Spring references			
		included file system			
		commands thus,			
		including "without			
		involving network			
		protocols" is superfluous			
		to "without involving a			
		translation from a high			
		level file system			
		command to a native low			
		12			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		level block protocol request.")			· · ·
		request.)			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶7 (CIFS, NFS			
		and FTP are network			
		protocols).			
	· · · ·	March 7, 2011 Decl. of			
		Brian Berg, ¶37			
		(Defendants' expert uses			
		term "network protocol" broadly such that it			
		would include Fibre			
		Channel).			
		April 28, 2011 2d Supp.			
		Decl. of John Levy, Ph.D., ¶6 (under			
		Defendants'			
		construction, a protocol			
		used for communication			
		over "Fibre Channel			
		based networks" would be a network protocol).			
		February 22, 2011 Decl.			
		of John Levy, Ph.D., ¶¶			
		31, 33 (NLLBPs do not			
		have the overhead associated with the use			
		of higher level protocols			
		to access storage); Id. ¶			
		34 (specification			
		describes network			
		servers communicating			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		with storage using NLLBPs).			
Claim 15			and the set of the set		
The apparatus of claim 14, wherein the supervisor unit is further operable to maintain a configuration wherein the configuration includes the map between the device and the remote storage device, and further wherein the map includes virtual LUNs that provide a representation of the storage device.	Configuration: "A modifiable setting of information."	Configuration: Intrinsic: Col. 2, ll. 19-23; Col. 5, ll. 53-54; Col. 6, ll. 58- 64 (describing "configuration" as information used to control operation of the storage router and which is modifiable). '147 Patent: Col. 2, ll. 28-32; Col. 9, ll. 36-41 ("configuration" can also include mapping information and additional information, such as information needed to "implement[] access controls"). Claim 15, Col. 11, ll. 23- 28 (the limitation "operable to maintain a configuration wherein the configuration includes a map"	Configuration: "Map"; otherwise indefinite.	See claim 1, supra.	No Construction Necessary.

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Extrinsic:			
		Chan ann al Manluman			
		Chaparral Markman			
		Order at 16, Fore Decl. ISO Crossroads' Cl.			
		Const. Br., Ex. L (parties			
		to earlier action agreed		· · · · ·	
		to construe "maintain a			
		configuration" to mean			
		"keeping a modifiable			
		setting of information");		and the second	
		February 22, 2011 Decl.			
		of John Levy, Ph.D., ¶46			
		(person of ordinary skill			
		would understand			
		"maintaining a			
		configuration" to mean			
		"keeping a modifiable			
		set of information").			
The apparatus of claim	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
4, wherein the			and a second		Necessary.
upervisor unit is further	"Computing device that	Intrinsic:	Computer.		-
perable to maintain a	issues storage access	The second s	_		
onfiguration wherein	requests."	Claim 1, Col. 9, 11. 27-30			
he configuration		("devices" refers to the			
ncludes the map		devices that make			
etween the device and		requests and are allowed			
he remote storage		access to storage			
evice, and further		devices).			
wherein the map					
ncludes virtual LUNs		Col. 1, 11. 36-37; Col. 2,			
nat provide a		11. 4-5; Col. 4, 11. 55-56;			
epresentation of the		Col. 8, 11. 65-68 (the			
torage device.		specification describes			
		the devices that make			
		requests to access the		1	
		storage devices as			

		Special Master's Proposed	Construction of Disputed T	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		"computing devices").			
		Cal 1 11 57 60 ("from			
		Col. 1, ll. 57-60 ("from the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			· ·
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
4. 					
		Col. 6, ll. 31-41, 46-56			
		(the specification describes "servers" as a			
		type of computing device that can make			
		storage access requests).			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, 11. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		workstations,			
		input/output devices,			
		"initiator" and "target"			· · ·
		devices).			
		April 6, 2005 Reply to	and the second		
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would			
		understand that in the			
		embodiments at Col. 6,			
		11. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		The McGraw-Hill			
		Illustrated Dictionary of	· · · · · · · · · · · · · · · · · · ·		
		Personal Computers 126			
		$(4^{\text{th}} \text{ ed. 1995})$, Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or appliance.			
		Commonly used in			
		reference to peripherals			
		such as printers, CRTS			
		and disk drives").			
		U			
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8, 2011 (Defendants'			
		counsel agreeing that the			
		defining characteristic of			
		a device is that it is the			
		thing that issues storage			
		requests).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
		storage).			
		NC			
		Microsoft Computer	↓ · · · · · · · · · · · · · · · · · · ·		
		Dictionary 430 (3d Ed. 1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers functioning			
		as workstations on the			
		network").			
		Special Master's Report			
		at 22, <i>Dot Hill</i>		· · · · · ·	
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15		· · ·	
		(Court previously			
		construed "storage			
		router" as "a data			
		transmitting device that			
		allows users to integrate			
		different servers or		· · · · · · · · · · · · · · · · · · ·	-
		workstations into a			
		storage network").			
11 • 42					
Claim 16: The apparatus of claim	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
5, wherein the map	Device.	Device.	Device.	See 055 patent, claim 1.	Necessary.
only exposes the device	"Computing device that	Intrinsic:	Computer.		Necessary.
b LUNs that the device	issues storage access	Intrinsic.	Computer.		
	requests."	Claim 1, Col. 9, 11. 27-30			
nay access.	requests.	("devices" refers to the			
		devices that make			
		requests and are allowed			
		access to storage			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		devices).			
		Col. 1, 11. 36-37; Col. 2,			
		11. 4-5; Col. 4, 11. 55-56;			
		Col. 8, 11. 65-68 (the			
		specification describes			
		the devices that make			
		requests to access the			
		storage devices as			
		"computing devices").			
		Col. 1, 11. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, 11. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, Il. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used	-		
		broadly to refer to			
		various computing			
		devices such as			
	·	workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			-
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed 7 Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
	· ·	Ph.D., ¶ 4 (one of ordinary skill would understand that in the embodiments at Col. 6, 11. 33-41; 46-56, it is the server that sends requests for storage access to the storage router using NLLBP).			
		The McGraw-Hill Illustrated Dictionary of Personal Computers 126 (4 th ed. 1995), Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. W (defining device as "a mechanical, electrical or electromechanical contrivance or appliance.			
		Commonly used in reference to peripherals such as printers, CRTS and disk drives").			
		Hr'g Tr. at 202:24- 203:3, 205:4-7, Mar. 8, 2011 (Defendants' counsel agreeing that the defining characteristic of a device is that it is the thing that issues storage requests).			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
<u> </u>		server" is a server that			
		can request access to			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers functioning			
		as workstations on the			
		network").			
		Special Master's Report			
		at 22, <i>Dot Hill</i>			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		(Court previously			
		construed "storage			
		router" as "a data			
		transmitting device that			
		allows users to integrate different servers or			
		workstations into a			
		storage network").			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Claim 17:		Contract 1985			
The apparatus of claim	Configuration:	Configuration:	Configuration:	See claim 1, supra.	No Construction
14, wherein the		a the state of the state of the			Necessary.
supervisor unit is further	"A modifiable setting of	Intrinsic:	"Map"; otherwise		
operable to maintain a	information."		indefinite.		
configuration including		Col. 2, ll. 19-23; Col. 5,	· · ·		
he map, wherein the		11. 53-54; Col. 6, 11. 58-			
nap provides a mapping		64 (describing			
rom a host device ID to		"configuration" as			
a virtual LUN		information used to			
representation of the		control operation of the			
emote storage device to		storage router and which			
physical LUN of the		is modifiable).			
emote storage device.					
C		'147 Patent: Col. 2, 11.			
		28-32; Col. 9, II. 36-41			
		("configuration" can also			
		include mapping			
		information and			
		additional information,			
		such as information			
		needed to "implement[]			
		access controls").			
×		Claim 15, Col. 11, 11. 23-			
		28 (the limitation			
		"operable to maintain a			
		configuration wherein			
		the configuration			
		includes a map"			
		would be meaningless			
		under Defendants'			
		proposed construction).			
		Extrinsic:			· · · · · · · · · · · · · · · · · · ·
		LAU INDIC.			
		Chaparral Markman	1 · · · · · · · · · · · · · · · · · · ·	1	1

		Special Master's Proposed			
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Construction		Construction	Evidence	Construction
		Order at 16, Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. L (parties			
		to earlier action agreed			
		to construe "maintain a			
		configuration" to mean			
		"keeping a modifiable			
		setting of information");			
		February 22, 2011 Decl.			
		of John Levy, Ph.D., ¶46			·
		(person of ordinary skill			
		would understand			
		"maintaining a			
		configuration" to mean			
		"keeping a modifiable			
		set of information").			
Claim 18:					
The apparatus of claim	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
14, wherein the remote			_		Necessary.
storage device further	"Computing device that	Intrinsic:	Computer.		
comprises storage space	issues storage access				
partitioned into virtual	requests."	Claim 1, Col. 9, 11. 27-30			
local storage for the		("devices" refers to the			
device connected to the		devices that make			
device connected to the first transport medium.		requests and are allowed			
		requests and are allowed access to storage			
		requests and are allowed			
		requests and are allowed access to storage devices).			
		requests and are allowed access to storage devices). Col. 1, 1l. 36-37; Col. 2,			
		requests and are allowed access to storage devices). Col. 1, ll. 36-37; Col. 2, ll. 4-5; Col. 4, ll. 55-56;			
		requests and are allowed access to storage devices). Col. 1, 11. 36-37; Col. 2, 11. 4-5; Col. 4, 11. 55-56; Col. 8, 11. 65-68 (the			
		requests and are allowed access to storage devices). Col. 1, II. 36-37; Col. 2, II. 4-5; Col. 4, II. 55-56; Col. 8, II. 65-68 (the specification describes			
		requests and are allowed access to storage devices). Col. 1, ll. 36-37; Col. 2, ll. 4-5; Col. 4, ll. 55-56; Col. 8, ll. 65-68 (the specification describes the devices that make			
		requests and are allowed access to storage devices). Col. 1, ll. 36-37; Col. 2, ll. 4-5; Col. 4, ll. 55-56; Col. 8, ll. 65-68 (the specification describes the devices that make requests to access the			
		requests and are allowed access to storage devices). Col. 1, 11. 36-37; Col. 2, 11. 4-5; Col. 4, 11. 55-56; Col. 8, 11. 65-68 (the specification describes the devices that make requests to access the storage devices as			
		requests and are allowed access to storage devices). Col. 1, ll. 36-37; Col. 2, ll. 4-5; Col. 4, ll. 55-56; Col. 8, ll. 65-68 (the specification describes the devices that make requests to access the			

	A AND AND AND AND AND A AND AND AND AND		Construction of Disputed T		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Col. 1, ll. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim			
		differentiation require			
		"devices," as a group,			
	· · · · · · · · · · · · · · · · · · ·	must necessarily be			
		broader than			
		"workstations").			
		Col. 6, 11. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, ll. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, ll. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			
		workstations,			
		input/output devices,			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		"initiator" and "target"			
		devices).			
			·		
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO	·		
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would			
		understand that in the			
		embodiments at Col. 6,			
		II. 33-41; 46-56, it is the	· · · · · · · · · · · · · · · · · · ·		
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			
		i fouter using NEEDI).			
		The McGraw-Hill			
· · · · · · · · · · · · · · · · · · ·			<u>l</u>	<u></u>	_ _
		14	11		
		a construction of the second	• • • • • • • • • • • • • • • • • • •		

		Special Master's Proposed Construction of Disputed Terms							
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction				
		Illustrated Dictionary of Personal Computers 126 (4 th ed. 1995), Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. W (defining device as "a mechanical, electrical or electromechanical contrivance or appliance. Commonly used in reference to peripherals such as printers, CRTS and disk drives"). Hr'g Tr. at 202:24- 203:3, 205:4-7, Mar. 8, 2011 (Defendants' counsel agreeing that the defining characteristic of a device is that it is the thing that issues storage requests). May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., ¶3 (a "network server" is a server that can request access to storage). <u>Microsoft Computer</u> <u>Dictionary</u> 430 (3d Ed. 1997), May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., Ex. A (defining "server" as "(1) on a local area							

		Special Master's Proposed	Construction of Disputed	Terms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network"). Special Master's Report at 22, <i>Dot Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that allows users to integrate different servers or workstations into a storage network").			
laim 19: he apparatus of claim 8, wherein the	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction Necessary.
approvisor unit is further operable to prevent the evice from accessing my storage on the emote storage device at is not part of a rtual local storage artition assigned to the evice.	"Computing device that issues storage access requests."	Intrinsic: Claim 1, Col. 9, ll. 27-30 ("devices" refers to the devices that make requests and are allowed access to storage devices).	Computer.		iveessary.

· · · · · · · · · · · · · · · · · · ·		Special Master's Proposed	Construction of Disputed Te	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		II. 4-5; Col. 4, II. 55-56; Col. 8, II. 65-68 (the specification describes the devices that make requests to access the storage devices as "computing devices").			
		Col. 1, ll. 57-60 ("from the perspective of a workstation, or other computing device, seeking to access such server data, the access is much slower than access to data on a local storage device ").			
		Claim 3, Col. 9, ll. 37-39 (principles of claim differentiation require "devices," as a group, must necessarily be broader than "workstations").			
		Col. 6, ll. 31-41, 46-56 (the specification describes "servers" as a type of computing device that can make storage access requests).			
		Abstract, Col. 1, ll. 21- 24, ll. 36-37, ll. 53-56; Col. 2, ll. 4-6; Col. 3, ll. 3-6, 41-43; Col. 4, ll. 38-			

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed 7 Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			
		workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			• • • •
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g	· · ·		
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to	· · ·		
		refer to types of devices			
		capable of making			
		requests for storage).			
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would	1		
		understand that in the			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		embodiments at Col. 6,			
		Il. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			
		(4 th ed. 1995), Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or appliance.			
		Commonly used in			
		reference to peripherals such as printers, CRTS			
		and disk drives").			
		and disk dirves <i>j</i> .			
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8,			
		2011 (Defendants'			
		counsel agreeing that the			
		defining characteristic of			
		a device is that it is the			
		thing that issues storage			
		requests).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
		storage).			
		14	6		

			Construction of Disputed		S
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Construction	Evidence	Construction	Evidence	Construction
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A		· · · · · · · · · · · · · · · · · · ·	
		(defining "server" as			
		"(1) on a local area	· · · · ·		
		network (LAN), a			
		computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers functioning			
		as workstations on the			
		network").			
		Special Master's Report			
		at 22, Dot Hill	· · · · · ·		
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		(Court previously construed "storage			
		router" as "a data			
		transmitting device that			
		allows users to integrate			
		different servers or			
		workstations into a			
		storage network").			
im 20:					
apparatus of claim	[No claim term at issue]		[No claim term at issue]		
wherein the first					
troller and the second				174 · · · · · · · · · · · · · · · · · · ·	
troller further			2.2		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
comprise a single controller.					
Claim 21:					
A system for providing virtual local storage on remote storage devices, comprising: a first controller operable to connect to and interface with a first transport medium operable according to a Fibre Channel protocol; a second controller operable to connect to and interface with a second transport medium operable according to the Fibre Channel protocol; at least one device connected to the first transport medium; at least one storage device connected to the second transport medium; and	Device: "Computing device that issues storage access requests."	Device: Intrinsic: Claim 1, Col. 9, II. 27-30 ("devices" refers to the devices that make requests and are allowed access to storage devices). Col. 1, II. 36-37; Col. 2, II. 4-5; Col. 4, II. 55-56; Col. 8, II. 65-68 (the specification describes the devices that make requests to access the storage devices as "computing devices"). Col. 1, II. 57-60 ("from the perspective of a workstation, or other computing device, seeking to access such server data, the access is much slower than access to data on a local storage device "). Claim 3, Col. 9, II. 37-39 (principles of claim differentiation require "devices," as a group,	Device: Computer.	See '035 patent, claim 1.	No Construction Necessary.

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		must necessarily be broader than		· · · · · · · · · · · · · · · · · · ·	
		"workstations").			
		Col. 6, 11. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing device that can make			
		storage access requests).	· · · · · · · · ·		
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, 11. 38-			
		42, 11. 55-56 Col. 6, 11. 45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			
		workstations,			
		input/output devices, "initiator" and "target"			
		devices).			
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July 22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
• ··· ··· ···		Cl. Const. Br., Ex. F			
		14	0		
		14	7		

		Special Master's Proposed	Construction of Disputed Te	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would understand that in the			
		embodiments at Col. 6,			
		ll. 33-41; 46-56, it is the server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			
		Touter using NEEDr).			
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			
		$\frac{1}{(4^{\text{th}} \text{ ed. 1995})}$, Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or appliance.			
		Commonly used in			
		reference to peripherals			
		such as printers, CRTS			
		and disk drives").			

Language Construction Evidence Construction Evidence Construction H'g Tr. at 202:24- 203:3, 205:47, Mar. 8, 2011 (Defendants' counsel agreeing that the defining characteristic of a device is that it is the thing that issues storage requests). Image: Construction Evidence Construction May 11, 2011 3d Supp. Deel. of John Levy, Ph.D., ¶3 (a "network server" is a server that can request access to storage). Microsoft Computer Dictionary 430 (3d Ed. 1997), May 11, 2011 3d Supp. Deel. of John Levy, Ph.D., R.A (defining "server" as "(1) on a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network?". Evidence Construction	Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
2033, 2054-7, Mar. 8, 2011 (Dofendants' counsel agreeing that the defining characteristic of a device is that it is the thing that issues storage requests). May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., ¶3 (a "network server" is a server that can request access to storage). <u>Microsoft Computer Dictionary</u> 430 (3d Ed. 1997), May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., Ex. A (defining "server" as "(1) on a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network", Seport						
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Microsoft Computer Dictionary 430 (3d Ed. 1997), May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., Ex. A (defining "server" as "(1) on a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computer functioning as workstations on the network"). Special Master's Report			can request access to			
Dictionary 430 (3d Ed.1997), May 11, 2011 3dSupp. Decl. of JohnLevy, Ph.D., Ex. A(defining "server" as"(1) on a local areanetwork (LAN), acomputer runningadministrative softwarethat controls access tothe network and itsresources, such asprinters and disk drives,and provides resourcesto computer functioningas workstations on thenetwork").Special Master's Report			storage).			
Dictionary 430 (3d Ed.1997), May 11, 2011 3dSupp. Decl. of JohnLevy, Ph.D., Ex. A(defining "server" as"(1) on a local areanetwork (LAN), acomputer runningadministrative softwarethat controls access tothe network and itsresources, such asprinters and disk drives,and provides resourcesto computer functioningas workstations on thenetwork").Special Master's Report			またと考えていた。			
1997), May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., Ex. A (defining "server" as "(1) on a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network"). Special Master's Report						
Supp. Decl. of John Levy, Ph.D., Ex. A (defining "server" as "(1) on a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network"). Special Master's Report						
Levy, Ph.D., Ex. A (defining "server" as "(1) on a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network"). Special Master's Report						
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computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network"). Special Master's Report						
administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network"). Special Master's Report						
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resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network"). Special Master's Report						
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and provides resources to computers functioning as workstations on the network"). Special Master's Report						
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as workstations on the network"). Special Master's Report						
network"). Special Master's Report						
Special Master's Report			1 1			
			at 22, Dot Hill			

Actual Claims LanguageCrossroads' Proposed ConstructionCrossroads' EvidenceDefendants' Proposed ConstructionDefendants' EvidenceLanguageConstructionConstructionDefendants' Proposed ConstructionDefendants' Proposed EvidenceDefendants' EvidenceSpecial Mass ConstructionLanguageConstructionConstructionConstructionEvidenceConstructionEvidenceConstructionConstructionConstructionEvidenceConstructionEvidenceConstructConstructionConstructionSpecial Mass (Court previously constructionsinge router' as "a data transmitting device that allows users to integrate different servers or workstations into a storage network").Special Mass EvidenceSpecial Mass Evidencean access control device coupled to the first controler and the second controller, the access to a specific subset of storage devices operable to: map between the at leastControl access: Fig. 3, Col. 3, II. 7-59, Col. 4, II. 7-27, 33-35, space assigned to theSee '035 patent, claim 1. access to a specific storage device a construction access:"To limit a device" access to a specific storage device a col. 4, II. 7-27, 33-35, space assigned to theSee '035 patent, claim 1. access to a specific storage device a to a map."	
Image: construct of the second control device control ler and the second controller, the access control device second controller, the access to a specific second controller, the access to a specific second control device second control device subset of storage devices or sections of a singleControl access: control access:	CHOH
one device and a storage space on the at least one storage device; and control access from the at least one device to the at least one device to the at least one device to the at least one storage device, and control access from the at least one device to the at least one storage device using native low level, block protocol in accordance with the map.	vice's ecific ige device a single

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		shared storage).	Ethernet networks,		
		Extrinsic:	higher-level protocols		
		Extrinsic:	such as TCP/IP, Ethernet		
		Chan and Markman	protocols, network		1
		<i>Chaparral</i> Markman Order at 3-7, 15, Fore	protocols or file system		
		Decl. ISO Crossroads'	protocols, or translation from one protocol to		
		Cl. Const. Br., Ex. L	another.		
		(Crossroads'	another.		
		construction parallels historic construction; the			
		invention contemplates			
		using access controls for	and the second		
		an entire storage device			
		as well as shared			
		storage; Court has			
		rejected a construction in			
		which a particular subset			
		of storage could only be			
		accessed by a single			
		workstation).			
		workstationj.			
		Comments on Statement			
		of Reasons for			
		Patentability and/or			
		Confirmation, Fore Decl.			
		ISO Pl.'s Cl. Const. Br.,			
		Ex. I (patentees			
		expressly disagreed with			
		any characterization of			
		the claims that were			
		"inconsistent with the			
		claim language,			
		specification or prior			
		prosecution history.").			
access control device	Native low level block	Native low level block	Native low level block	See '035 patent, claim 1.	"A set of rules or
coupled to the first	protocol ("NLLBP"):	protocol:	protocol:	F, 1.	standards that enable

Special Master's Proposed Construction of Disputed Terms									
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction				
controller and the second controller, the access control device operable to: nap between the at least one device and a storage space on the at least one storage device; and control access from the at least one device to the at least one storage device using native low level, block protocol in accordance with the map.	Native: "Designed for use with a specific type of storage device." Block Protocol: "A set of rules or standards for exchanging information with a block-oriented storage device." Low Level Protocol: "A set of rules or standards that enable computers to exchange information without involving high level file system protocols." Or, in the alternative: Native Low Level Block Protocol: "A set of rules or standards designed for exchanging information with a block-oriented storage device without involving high level file system protocols."	Intrinsic: Abstract, Col. 1, II. 44, Col. 2, II. 13-14, 26; Col. 3, II. 17, 22-23, 53, 63; Col. 4, II. 4-5, 25; Col. 5, I. 3; Claim 1, Col. 9, II. 29-30; Col. 10, I. 10; Col. 10, II. 48-49 (specification consistently uses "NLLBP" as a single term). Fig. 1; Col. 3, II. 20-23 (network server shown in Fig. 1 communicates with storage devices via NLLBPs even though the SCSI commands are sent by a network server). Fig. 1, Col. 1, II. 49-54; Col. 3, II. 17-23 (the "storage router" of the invention is contrasted with a "network server" that allowed access to storage devices by translating high level file system commands of the "network protocol" into low level requests (i.e., NLLBP) and sending the NLLBP to the physical	Does not need to be separately construed; alternatively, may be construed with reference to individual terms as follows: Native: Designed for use with a specific type of storage device. Low-level protocol: A set of rules or standards that enable computers to exchange information without involving network servers, Ethernet networks, or higher-level protocols such as TCP/IP, Ethernet protocols, network protocols or file system protocols. Block protocol: A set of rules or standards for exchanging information with a block-oriented storage device		computers to exchange information and do not involve the overhead of high level protocols and file systems typically required by network servers."				

Actual Claims Language	Crossroads' Proposed Construction	Special Master's Proposed Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
<u> </u>		storage devices).			
		Constant of the second			
	-	Claim 1, Col. 9, ll. 13-30			
		(storage router "allow[s]			
		access from devices			
		connected to the first			
		transport medium to the			
		storage devices using			
		native low level, block			
		protocols" (emphasis			
		added); the storage			
		router, specifically, the			
		supervisor unit within			
		the storage router, "uses"			
		the NLLBP to permit or			
		enable access).			
		Abstract; Col. 2, Il. 12-			
		15, 17-20, 24-27; Col. 3,			
		11. 59-63; Col. 3, 11. 51-			
		53; Col. 4, 11. 2-6; Col. 5,			
		ll. 1-5; Col. 9, ll. 28-31;			
		Col. 10, ll. 9-11			
		(specification discloses			
		that NLLBPs are used			
		by, and at, the storage			
		router to allow access).			
		Col. 6, 11. 33-41, 46-56			
		(specification describes			
		two embodiments wherein "devices"			
		making the storage			
		access request are servers).			

 Construction	Evidence	Construction	Evidence	Construction
	Office Action at 10-11,			
	Fore Decl. ISO			
	Crossroads' Post-Hr'g			
	Cl. Const. Br., Ex. E;			
	July 22, 2005 Reply to			
	Office Action at 24-27,			
	Fore Decl. ISO	·		
	Crossroads' Post-Hr'g			
	Cl. Const. Br., Ex. F			- -
	(Crossroads			· · ·
	distinguished Petal,			
	Spring and Oeda as			
	having a server that			
	provided controlled			
	access to storage was			
	required to translate high			
	level file system			
	commands into low level			
	commands in order to			
	send the NLLBP to the			
	storage devices).	•		
	storage devices).	·		
	April 6, 2005 Reply to			
	Office Action at 8-11,			
	19, 22-23, Fore Decl.			
	ISO Crossroads' Post-			
	Hr'g Cl. Const. Br., Ex.			
	E; July 22, 2005 Reply			
	to Office Action at 11-			
	17, 21-28, Fore Decl.			
	ISO Crossroads' Post-			
	Hr'g Cl. Const. Br., Ex.			
	F (showing that			
	Crossroads did not make			
	a sweeping disclaimer of			
	any use of a "network			
1	server"; Crossroads			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		distinguished its			a construction of the second se
		invention from Oeda,			
		Petal and Spring based			
		on the requirement that			
		the "network server"			
		that provided controlled	· · · · · · · · · · · · · · · · · · ·		
		access to storage was			
		required to translate the			
		high level file system			
		command into low level		- · ·	
		commands in order to			
		send the NLLBP to the			
		storage device, not the			
		use of Ethernet			
		networks, Ethernet or			
		TCP/IP).			
		Col. 2, 11. 17-20; Col. 5,			
		11. 19-22, 50-57, 60-63;			
		Col. 6, ll. 32-37; '147			
		Patent, Claim 1, Col. 9,			
		Il. 28-32 (disclosing and			
		claiming embodiments			
		using Fibre Channel; the			
		inclusion of "without			
		involving network			
		protocols" according to			
		Defendants' expert			
		would prohibit the use of			
		Fibre Channel despite			
		the fact that these are			
		express embodiments).			
		Col. 5, ll. 53-56 (Fibre			
		Channel is a protocol			
		used for communications			
	· · · · · · · · · · · · · · · · · · ·	over "Fibre Channel			

		Special Master's Proposed			
ctual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		based networks").			
		oused networks j.			
		Col. 1, 11. 42-53; Col. 3,			
		11. 16-24; Col. 5, 11. 1-5			
		(specification notes that			
		NLLBPs do not involve			
		overhead of high level			· · · · · · · · · · · · · · · · · · ·
		network protocols or file			
		systems).			
		Col. 6, ll. 31-41, 46-56			
		(specification has two			
		distinct embodiments in			
		which the "devices"			
		making storage requests			
		are servers).			
		Extrinsic:			
		March 7, 2011 Supp.			
		Decl. of John Levy,			
		Ph.D., ¶2; March 7, 2011			
		Decl. of Brian Berg ¶42 (experts agree that			
		"NLLBP" is not a term			
		of art).			
		or art).			
		Hr'g Tr. at 121:8-16,			
		March 8, 2011 (parties			
		agree that "NLLBP"			
		should be construed as a			
		single term, consistent			
		with use in specification)			
		,			
		March 7, 2011 Supp.			
		Decl. of John Levy,			
		Ph.D., ¶13 (Ethernet and	· · ·		
			· · · · · · · · · · · · · · · · · · ·		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Construction of Disputed Te Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		TCP/IP protocols are concerned only with			
		delivery of messages).			
		March 7, 2011 Decl. of			
		Brian Berg ¶48 (a SCSI			
		command would be a low level command).			
		low level command).			
		March 7, 2011 Decl. of			
		Brian Berg, ¶37 (states			
		that "low level" means "without involving			
		file system protocols.").			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶4 (person of ordinary skill would			
		understand that the			
		specification discloses a			
		server that sends			
		requests for storage			
		access to a storage router			
		using NLLBP).			
		Hr'g Tr. 76:4-10, 82:20-			
		23, March 8, 2011 (in			
		hypothetical network of Graphic 2 of Defendants'			
		Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-Hr'g			
		Cl. Const. Br., Ex. J) the			
		workstation sends high			
		level file systems commands to network			
	_ _	Communes to network	<u> </u>		1

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		server); <i>Id.</i> at 200:2-5,			
		201:22-24, 202:24-203:3			
		(Defendants expressly			
		stated that a "device" is a			
		"computer" that is both			
		"reading or writing data			
		from a storage device"			
		and sending NLLBPs			
		and the only "device"			
		that does so in Graphic			
		2, shown in Crossroads'			
		Post-Hearing Brief is the			
		"network server").			
		Crossroads' Concise			
		Statement of			
		Infringement, Dot Hill			
		Litigation (Case No. A-			
		03-CV-754 SS), Fore			
		Decl. ISO Pl.'s Post-Hr'g			
		Cl. Const. Br., Ex. H;			
		April 28, 2011 2d Supp.			r.
		Decl. of John Levy,			
		Ph.D., ¶5 (accused			
		devices in Dot Hill			
		litigation were designed			
		to be used in			
		hypothetical system			
		shown in Graphic 2 of Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-Hr'g			
		Cl. Const. Br., Ex. J)).			
		$\begin{bmatrix} CI. CONSt. BI., EX. J) \end{bmatrix}.$			
		Hr'g Tr. at 81:12-15,			
		March 8, 2011 (all			
		parties agree that the		······································	
		16	50		
		10			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		Petal, Spring and Oeda			
		references disclose			
		systems with a "server"			
		interposed between			
		workstations and			
		storage devices); Id. at			
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants			
		agree that the			
		"translation"			
		distinguished by			
		patentees during			
		reexamination was from			
		high level file system			
		commands into NLLBP			
	· ·	requests); Id. at 89:11-16			
		(parties agree that			
		"allowing access			
		using NLLBP" occurs			
		without a translation			
		from a high level file			
		system command to a			
		NLLBP request); Id. at			
		91:14-16, 92:1-5, 152:4-			
		7 (Defendants concede			
		that the "network			
		protocols" described in			
		the Oeda, Petal and			
		Spring references			
		included file system			
		commands thus,			
		including "without			
		involving network			
		protocols" is superfluous			
		to "without involving a			
		translation from a high			
		level file system			

		Special Master's Proposed		STATISTICS OF STATISTICS OF STATISTICS	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		command to a native low			
		level block protocol			
		request.")			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶7 (CIFS, NFS			
		and FTP are network			
		protocols).			
		March 7, 2011 Decl. of			
		Brian Berg, ¶37			
		(Defendants' expert uses			
		term "network protocol"			
		broadly such that it			
		would include Fibre			
		Channel).			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶6 (under			
		Defendants'			
		construction, a protocol used for communication			
		over "Fibre Channel			
		based networks" would			
		be a network protocol).			
		be a network protocor).			
		February 22, 2011 Decl.			
		of John Levy, Ph.D., ¶¶			
		31, 33 (NLLBPs do not			
		have the overhead			
		associated with the use			
		of higher level protocols			
		to access storage); <i>Id.</i> ¶			
		34 (specification			
		describes network			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		servers communicating with storage using NLLBPs).			
Claim 22:					
The system of claim 21,	Configuration:	Configuration:	Configuration:	See claim 1, supra.	No Construction
wherein the access					Necessary.
ontrol device is further	"A modifiable setting of	Intrinsic:	"Map"; otherwise		
perable to maintain a	information."		indefinite.		
onfiguration wherein		Col. 2, 11. 19-23; Col. 5,			
he configuration ncludes the map	·	11. 53-54; Col. 6, 11. 58- 64 (describing			
between the at least one		"configuration" as			
levice and the at least		information used to			
one storage device, and		control operation of the			
urther wherein the map		storage router and which			
ncludes virtual LUNs		is modifiable).			
hat provide a					
epresentation of the at		'147 Patent: Col. 2, ll.			
east one storage device.		28-32; Col. 9, II. 36-41			
		("configuration" can also		· · · · · · · · · · · · · · · · · · ·	
		include mapping			
	· · ·	information and			
		additional information, such as information			
		needed to "implement[]			
		access controls").			
		Claim 15, Col. 11, ll. 23-			
		28 (the limitation			
		"operable to maintain a			
		configuration wherein			
		the configuration			
		includes a map"			
		would be meaningless			
		under Defendants'			
		proposed construction).			
		16	53		
			-		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Extrinsic:			
		Charry and Masterson			
		<i>Chaparral</i> Markman Order at 16, Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. L (parties			
		to earlier action agreed			
		to construe "maintain a	· · · · ·		
		configuration" to mean			
		"keeping a modifiable			
		setting of information");			
		February 22, 2011 Decl.			
		of John Levy, Ph.D., ¶46			
		(person of ordinary skill			
		would understand			
		"maintaining a			
		configuration" to mean			
		"keeping a modifiable set of information").			
The system of claim 21,	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
wherein the access	Device.	Device.	Device.	See 055 patent, claim 1.	Necessary.
control device is further	"Computing device that	Intrinsic:	Computer.		Treeessary.
operable to maintain a	issues storage access				
configuration wherein	requests."	Claim 1, Col. 9, 11. 27-30			
he configuration	1	("devices" refers to the			
ncludes the map		devices that make			
between the at least one		requests and are allowed			
levice and the at least		access to storage			
one storage device, and		devices).			
further wherein the map					
ncludes virtual LUNs		Col. 1, Il. 36-37; Col. 2,			
hat provide a		II. 4-5; Col. 4, II. 55-56;		1	
epresentation of the at		Col. 8, 11. 65-68 (the			
east one storage device.		specification describes the devices that make			

ctual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		storage devices as			
		"computing devices").			
		Col. 1, ll. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, ll. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, 11. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used		, %	
		broadly to refer to			
	L	various computing			

Actual Claims	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Construction	devices such as	Construction	Evidence	Construction
		workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,		· · · ·	
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g		-	· · · ·
		Cl. Const. Br., Ex. F			
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would			
		understand that in the			
		embodiments at Col. 6,			
		11. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		router using NLLBP).			
		,			
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			
		(4 th ed. 1995), Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or appliance.			
		Commonly used in			
		reference to peripherals			
		such as printers, CRTS			
		and disk drives").			
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8,			
		2011 (Defendants'			
		counsel agreeing that the			
		defining characteristic of			
		a device is that it is the			
		thing that issues storage			
		requests).			
		M 11 2011 24 8			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
	1	Supp. Decl. of John			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Levy, Ph.D., Ex. A (defining "server" as "(1) on a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network"). Special Master's Report at 22, <i>Dot Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that allows users to integrate different servers or workstations into a			
aim 23:	Douises	storage network").		See '025 retert alaim 1	
he system of claim 22, herein the map only poses the at least one vice to LUNs that the least one device may cess.	Device: "Computing device that issues storage access requests."	Device: Intrinsic: Claim 1, Col. 9, ll. 27-30 ("devices" refers to the devices that make	Device: Computer.	See '035 patent, claim 1.	No Construction Necessary .

Actual Claims	Crossroads' Proposed Construction	Crossroads' Evidence	Construction of Disputed To Defendants' Proposed	Defendants' Evidence	Special Master's Construction
Language	Construction	devices).	Construction	Evidence	Construction
		uevices).			· · · · · · · · · · · · · · · · · · ·
		Col. 1, ll. 36-37; Col. 2,			
		11. 4-5; Col. 4, 11. 55-56;			
		Col. 8, 11. 65-68 (the			
		specification describes			
		the devices that make			
		requests to access the			
	· • ·	storage devices as			
		"computing devices").			
		Col. 1, 11. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39	12 C		
		(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, 11. 31-41, 46-56			
		(the specification			
		describes "servers" as a type of computing			
		device that can make			
		storage access requests).			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		24, 11. 36-37, 11. 53-56;		· · · · · ·	
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, 11. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			
		workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Ph.D., ¶ 4 (one of ordinary skill would understand that in the			
		embodiments at Col. 6, 11. 33-41; 46-56, it is the			
		server that sends requests for storage			
		access to the storage router using NLLBP).			
		The McGraw-Hill			
		Illustrated Dictionary of Personal Computers 126			
		(4 th ed. 1995), Fore Decl. ISO Crossroads' Cl.			
		Const. Br., Ex. W (defining device as "a			
		mechanical, electrical or electromechanical			
		contrivance or appliance. Commonly used in			
		reference to peripherals such as printers, CRTS			
		and disk drives").			
		Hr'g Tr. at 202:24- 203:3, 205:4-7, Mar. 8, 2011 (Defendants'			
		counsel agreeing that the defining characteristic of			
		a device is that it is the thing that issues storage			
		requests).			
		May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., ¶3 (a "network			
			/1		
		17	1	· ·	

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		server" is a server that			
		can request access to			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running			
		administrative software			
		that controls access to			
		the network and its		-	
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers functioning			
		as workstations on the			
		network").			
		Special Master's Report			
		at 22, Dot Hill			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		(Court previously			
		construed "storage			
		router" as "a data			
		transmitting device that			
		allows users to integrate			
		different servers or			
		workstations into a			
		storage network").			

		Special Master's Proposed			
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Claim 24:		a anna bha ann an ann ann ann ann			
The system of claim 21, wherein the access	Configuration:	Configuration:	Configuration:	See claim 1, supra.	No Construction Necessary.
wherein the access control device is further operable to maintain a configuration including the map, wherein the map provides a mapping from a host device ID to a virtual LUN representation of the at least one storage device to a physical LUN of the at least one storage device.	"A modifiable setting of information."	Intrinsic: Col. 2, Il. 19-23; Col. 5, Il. 53-54; Col. 6, Il. 58- 64 (describing "configuration" as information used to control operation of the storage router and which is modifiable). '147 Patent: Col. 2, Il. 28-32; Col. 9, Il. 36-41 ("configuration" can also include mapping information and additional information, such as information needed to "implement[] access controls"). Claim 15, Col. 11, Il. 23- 28 (the limitation "operable to maintain a configuration wherein	"Map"; otherwise indefinite.		Necessary.
		the configuration includes a map" would be meaningless under Defendants'			
		proposed construction). Extrinsic:			
		<i>Chaparral</i> Markman			

	Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
			Order at 16, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L (parties to earlier action agreed to construe "maintain a configuration" to mean "keeping a modifiable setting of information"); February 22, 2011 Decl.			
000	Claim 25:		of John Levy, Ph.D., ¶46 (person of ordinary skill would understand "maintaining a configuration" to mean "keeping a modifiable set of information").			
	The system of claim 21, wherein the at least one	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction Necessary.
3	storage device further comprises storage space	"Computing device that	Intrinsic:	Computer.		necessary.
	partitioned into virtual local storage for the at least one device .	issues storage access requests."	Claim 1, Col. 9, ll. 27-30 ("devices" refers to the devices that make requests and are allowed access to storage devices).			
			Col. 1, 11. 36-37; Col. 2, 11. 4-5; Col. 4, 11. 55-56; Col. 8, 11. 65-68 (the specification describes the devices that make requests to access the storage devices as			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Col. 1, ll. 57-60 ("from the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim			
		differentiation require "devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, ll. 31-41, 46-56			
		(the specification describes "servers" as a			
		type of computing	· · · ·		
		device that can make			
		storage access requests).			
		Abstract, Col. 1, 11. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11. 3-6, 41-43; Col. 4, 11. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as workstations,			
	1	+ WORKSTATIONS.			1

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		"initiator" and "target"			
		devices).			
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
		Extrinsic:			
	· · ·	Ame: 1 28 2011 24 Same			
		April 28, 2011 2d Supp. Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would			
	understand that in the				
		embodiments at Col. 6,			
	11. 33-41; 46-56, it is the				
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Illustrated Dictionary of			
		Personal Computers 126			
		(4 th ed. 1995), Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or electromechanical			
		contrivance or appliance.			
		Commonly used in			
		reference to peripherals			
		such as printers, CRTS			
		and disk drives").			
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8,			
		2011 (Defendants'			
		counsel agreeing that the			
		defining characteristic of			
		a device is that it is the			
		thing that issues storage requests).			
		requests).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to storage).			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		network (LAN), a	Construction		
		computer running			
		administrative software			
		that controls access to			
		the network and its		· · · · · · · · · · · · · · · · · · ·	
		resources, such as	-		
		printers and disk drives,			
		and provides resources			
		to computers functioning			
		as workstations on the			
		network").			
		Special Master's Report			
		at 22, Dot Hill			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		(Court previously			
· · · · · ·		construed "storage			
		router" as "a data			
		transmitting device that			
		allows users to integrate	-		
		different servers or			
		workstations into a			
		storage network").			
Claim 26:	COLUMN				
	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
wherein the access				_	Necessary.
	"Computing device that	Intrinsic:	Computer.		
	issues storage access				
	requests."	Claim 1, Col. 9, 11. 27-30			
accessing any storage on		("devices" refers to the			
the at least one storage		devices that make			
levice that is not part of		requests and are allowed			
a virtual local storage		access to storage			
partition assigned to the		devices).			
at least one device .					
		Col. 1, 11. 36-37; Col. 2,			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		ll. 4-5; Col. 4, ll. 55-56; Col. 8, ll. 65-68 (the			
		specification describes			
		the devices that make			
		requests to access the			
		storage devices as			
		"computing devices").			
		Col. 1, ll. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device, seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be broader than			
		"workstations").			
		, , , , , , , , , , , , , , , , , , ,			
		Col. 6, ll. 31-41, 46-56			
		(the specification			
		describes "servers" as a type of computing			
		device that can make			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, 11. 38-			
		17	70		

		Special Master's Proposed	Construction of Disputed T	Ferms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			
		workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).		14 8	
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
		Extrinsic:			
		A			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would			
· · · · · · · · · · · · · · · · · · ·		understand that in the			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		embodiments at Col. 6,			
		11. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			· · ·
		router using NLLBP).			
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			the second s
		$\overline{(4^{th} \text{ ed. 1995})}$, Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or appliance.			
		Commonly used in			
		reference to peripherals			
		such as printers, CRTS			
		and disk drives").			
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8,			
		2011 (Defendants'			
		counsel agreeing that the			-
		defining characteristic of			
		a device is that it is the			
		thing that issues storage			
		requests).			
		N. 11 0011 010			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to storage).			1

	<u> </u>	Special Master's Proposed	Construction of Disputed	Terms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Microsoft Computer Dictionary 430 (3d Ed. 1997), May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., Ex. A (defining "server" as "(1) on a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network"). Special Master's Report at 22, Dot Hill Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that allows users to integrate different servers or workstations into a storage network").			
Claim 27:					
he system of claim 21, wherein the first ontroller and the second ontroller further	[No claim term at issue]		[No claim term at issue]		
		18	32		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
omprise a single ontroller.					
laim 28: method for providing	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
virtual local storage on remote storage devices, comprising: napping between a	"Computing device that issues storage access requests."	Intrinsic: Claim 1, Col. 9, II. 27-30	Computer.		Necessary.
device connected to a first transport medium and a storage device connected to a second transport medium,		("devices" refers to the devices that make requests and are allowed access to storage devices)			
wherein the first transport medium and the second transport medium operate according to a Fibre Channel protocol;		devices). Col. 1, 11. 36-37; Col. 2, 11. 4-5; Col. 4, 11. 55-56; Col. 8, 11. 65-68 (the specification describes the devices that make			
channel preceder,		requests to access the storage devices as "computing devices").			
		Col. 1, ll. 57-60 ("from the perspective of a workstation, or other computing device, seeking to access such server data, the access is much slower than access			
		to data on a local storage device "). Claim 3, Col. 9, ll. 37-39			
		(principles of claim differentiation require "devices," as a group,			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		must necessarily be		· · · · ·	
		broader than			·
		"workstations").			
		Col. 6, 11. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing device that can make			
		storage access requests).			
		storage access requests).			
		Abstract, Col. 1, ll. 21-	· · · · · · · · · · · · · · · · · · ·		
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, 11. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as		· · · ·	-
		workstations,			
		input/output devices, "initiator" and "target"			
		devices).			
		devices).			
· ,		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			-
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed Te Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
		Extrinsic:			
		L'Att miste.			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would			· · · · ·
		understand that in the			
		embodiments at Col. 6,			
		ll. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			
		The McGraw-Hill	-		
		Illustrated Dictionary of			
		Personal Computers 126			
		(4 th ed. 1995), Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or appliance.			
		Commonly used in			
		reference to peripherals			
		such as printers, CRTS and disk drives").			
		and disk drives).			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8,			
		2011 (Defendants'			
		counsel agreeing that the			
		defining characteristic of			
		a device is that it is the			
		thing that issues storage			
		requests).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers functioning			
		as workstations on the			
		network").			
		Special Master's Report			
		at 22, Dot Hill			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that allows users to integrate different servers or workstations into a storage network").		See '025 meterst alaim 1	"Controle which limit o
implementing access controls for storage space on the storage device; and	Access control(s): "Controls which limit a device's access to a specific subset of storage devices or sections of a single storage device according to a map."	Access control(s): Intrinsic: Fig. 3, Col. 3, ll. 7-59, Col. 4, ll. 7-27, 33-35, 40-43, 48-50, 50-53 (Fig. 3 shows embodiment in which all workstations can access global storage device). Col. 4, ll. 7-11 ("access controls" applies to shared storage). July 22, 2005 Reply to Office Action at 13-14, Fore Decl. ISO Crossroads' Post-Hr'g Cl. Const. Br., Ex. F (discussion during reexamination, that the "access controls" feature includes the concept of allowing multiple	Access controls: Controls that use a map to permit a particular device to read data from or write data to a particular storage space assigned to the device, and to prevent the device from reading data to or writing data from storage space assigned to other devices.	See '035 patent, claim 1.	"Controls which limit a device's access to a specific subset of storage devices or sections of a single storage device according to a map."

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		devices to have access to			
		shared storage).			
		Extrinsic:			
		Chaparral Markman			
		Order at 3-7, 15, Fore			
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. L			
		(Crossroads'			
		construction parallels			
		historic construction; the			
		invention contemplates using access controls for			
		an entire storage device			
		as well as shared			
		storage; Court has			
		rejected a construction in			
		which a particular subset			
		of storage could only be accessed by a single			
		workstation).			
		Comments on Statement			
		of Reasons for	·		
		Patentability and/or			
		Confirmation, Fore Decl. ISO Pl.'s Cl. Const. Br.,			
		Ex. I (patentees			
		expressly disagreed with			
		any characterization of			
		the claims that were			
		"inconsistent with the	-		
		claim language,			
		specification or prior prosecution history.").			
		prosecution instory.).			
	I		<u> </u>		
			38		
			• •		

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
allowing access from the device connected to the first transport medium to the storage device using native low level, block protocols.	Allowing access to the storage device using native low level, block protocols: "Permit or deny reading or writing of data using the NLLBP of the Virtual Local Storage without involving a translation from a high level file system command to a native low level, block protocol request."	Allowing access to the storage device using native low level, block protocols: Intrinsic: Fig. 1, Col. 1, II. 49-54; Col. 3, II. 17-23 (the "storage router" of the invention is contrasted with a "network server" that allowed access to storage devices by translating high level file system commands of the "network protocol" into low level requests (i.e., NLLBP) and sending the NLLBP to the physical storage devices). Claim 1, Col. 9, II. 13-30 (storage router "allow[s] access from <u>devices</u> connected to the first transport medium to the storage devices using native low level, block protocols" (emphasis added); the storage router, specifically, the supervisor unit within the storage router, "uses" the NLLBP to permit or enable access).	Allowing accessto the storage devices using native low level, block protocols: Permitting reading and writing of data in the native low level, block protocol of the storage device, without involving network servers, Ethernet networks, higher-level protocols such as TCP/IP, Ethernet protocols, network protocols, or translation from one protocol to another.	See '035 patent, claim 1.	"Permit or deny access using the NLLBP of the Virtual Local Storage without involving a translation from high level network protocols or file system protocols to a native low level block protocol request."

Col. 4, II. 7-47 (invention of patents-in- suit provides "virtual local storage" that appears to a workstation as local storage, and appears to have the same characteristics of local storage). Col. 4, II. 44-57 ("virtual local storage" is "provided" by the storage router in a manner that is transparent to the devices requesting storage access). Col. 5, II. 11-17, II. 24- 27 (supervisor unit within the storage router process NLLBP requests from the devices to access permitted storage). Abstract; Col. 2, II. 12- 15, 17-20, 24-27; Col. 3, II. 19-63; Col. 3, II. 51- 53; Col. 4, II. 2-6; Col. 5, II. 1-5; Col. 9, II. 21- 15, 17-20, 24-27; Col. 3, II. 19-63; Col. 3, II. 51- 53; Col. 4, II. 2-6; Col. 5, II. 1-5; Col. 9, II. 24- 31; Col. 10, II. 9-11 (specification discloses that NLLBPs are used by, and at, the storage protute to allow access).	Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
suit provides "virtual local storage" that appears to hav workstation as local storage, and appears to have the same characteristics of local storage). Col. 4, II. 44-57 ("virtual local storage "is "provided" by the storage router in a manner that is transparent to the devices requesting storage access). Col. 5, II. 11-17, II. 24- 27 (supervision unit within the storage router processes NLLBP requests from the devices to access permitted storage). Abstract; Col. 2, II. 12- 15, 17-20, 24-27; Col. 3, II. 59-63; Col. 3, II. 51- 53; Col. 4, II. 2-6; Col. 5, II. 1-5; Col. 9, II. 28-31; Col. 10, II. 91-11 (specification discloses that NLLBPs are used by, and at, the storage					· · · ·	
local storage" that appears to a workstation as local storage, and appears to have the same characteristics of local storage). Col. 4, 11. 44-57 ("virtual local storage" is "provided" by the storage router in a manner that is transparent to the devices requesting storage access). Col. 5, 11. 11-17, 11. 24- 27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage). Abstract; Col. 2, 11. 12- 15, 17-20, 24-27; Col. 3, 11. 59-63; Col. 3, 11. 51- 53; Col. 4, 11. 2-6; Col. 5, 115; Col. 9, 11. 28- 31; Col. 10, 11. 9-11 ; Col. 10, 11. 9-11 ; Col. 10, 11. 9-11 ; Col. 10, 11. 9-11 ; Specification discloses that NLLBPs are used by, and at, the storage						
appears to a workstation as local storage, and appears to have the same characteristics of local storage). Col. 4, II. 44-57 ("virtual local storage" is "provided" by the storage router in a manner that is transparent to the devices requesting storage access). Col. 5, II. 11-17, II. 24- 27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage). Abstract; Col. 2, II. 12- 15, 17-20, 24-27; Col. 3, II. 59-63; Col. 3, II. 51- 53; Col. 4, II. 2-6; Col. 5, II. 1-5; Col. 9, II. 28-31; Col. 10, II. 9-11 (specification discloses that NLLBPs are used by, and at, the storage			suit provides "virtual			
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characteristics of local storage). Col. 4, II. 44-57 ("virtual local storage" is "provided" by the storage router in a manner that is transparent to the devices requesting storage access). Col. 5, II. 11-17, II. 24- 27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage). Abstract; Col. 2, II. 12- 15, 17-20, 24-27; Col. 3, II. 59-63; Col. 3, II. 51- 53; Col. 4, II. 2-6; Col. 5, II. 1-5; Col. 9, II. 28-31; Col. 10, II. 9-11 (specification discloses that NLLBPs are used by, and at, the storage						$(1, \dots, N_{n-1}) \in \mathbb{R}^{n-1}$
storage). Col. 4, II. 44-57 ("virtual local storage" is "provided" by the storage router in a manner that is transparent to the devices requesting storage access). Col. 5, II. 11-17, II. 24- 27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage). Abstract; Col. 2, II. 12- 15, 17-20, 24-27; Col. 3, 11. 59-63; Col. 3, II. 51- 53; Col. 4, II. 2-6; Col. 5, 115; Col. 9, II. 28-31; Col. 10, II. 9-11 (specification discloses that NLLBPs are used by, and at, the storage						
Col. 4, II. 44-57 ("virtual local storage" is "provided" by the storage router in a manner that is transparent to the devices requesting storage access). Col. 5, II. 11-17, II. 24- 27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage). Abstract; Col. 2, II. 12- 15, 17-20, 24-27; Col. 3, II. 59-63; Col. 3, II. 51- 53; Col. 4, II. 2-6; Col. 5, II. 1-5; Col. 9, II. 28-31; Col. 10, II. 91-11 (specification discloses that NLLBPs are used by, and at, the storage						
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storage router in a manner that is transparent to the devices requesting storage access).Col. 5, II. 11-17, II. 24- 27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage).Abstract; Col. 2, II. 12- 15, 17-20, 24-27; Col. 3, II. 59-63; Col. 4, II. 26- 53; Col. 4, II. 28-31; Col. 10, II. 9-11 (specification discloses that NLLBPs are used by, and at, the storage						
manner that is transparent to the devices requesting storage access).Col. 5, ll. 11-17, ll. 24- 27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage).Abstract; Col. 2, ll. 12- 15, 17-20, 24-27; Col. 3, ll. 59-63; Col. 3, ll. 51- 53; Col. 4, ll. 2-6; Col. 5, ll. 1. 5; Col. 9, ll. 28-31; Col. 10, ll. 9-11 (specification discloses that NLLBPs are used by, and at, the storage						
transparent to the devices requesting storage access).Col. 5, II. 11-17, II. 24- 27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage).Abstract; Col. 2, II. 12- 15, 17-20, 24-27; Col. 3, II. 59-63; Col. 3, II. 51- 53; Col. 4, II. 2-6; Col. 5, II. 1-5; Col. 9, II. 28-31; Col. 10, II. 9-11 (specification discloses that NLLBPs are used by, and at, the storage						
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Col. 5, ll. 11-17, ll. 24- 27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage). Abstract; Col. 2, ll. 12- 15, 17-20, 24-27; Col. 3, ll. 59-63; Col. 3, ll. 51- 53; Col. 4, ll. 2-6; Col. 5, ll. 1-5; Col. 9, ll. 28-31; Col. 10, ll. 9-11 (specification discloses that NLLBPs are used by, and at, the storage						
27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage). Abstract; Col. 2, ll. 12- 15, 17-20, 24-27; Col. 3, ll. 59-63; Col. 3, ll. 51- 53; Col. 4, ll. 2-6; Col. 5, ll. 1-5; Col. 9, ll. 28-31; Col. 10, ll. 9-11 (specification discloses that NLLBPs are used by, and at, the storage			storage access).			
27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage). Abstract; Col. 2, ll. 12- 15, 17-20, 24-27; Col. 3, ll. 59-63; Col. 3, ll. 51- 53; Col. 4, ll. 2-6; Col. 5, ll. 1-5; Col. 9, ll. 28-31; Col. 10, ll. 9-11 (specification discloses that NLLBPs are used by, and at, the storage			Col 5 11 11 17 11 24			
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15, 17-20, 24-27; Col. 3, 11. 59-63; Col. 3, 11. 51- 53; Col. 4, 11. 2-6; Col. 5, 11. 1-5; Col. 9, 11. 28-31; Col. 10, 11. 9-11 (specification discloses that NLLBPs are used by, and at, the storage		-	I			
11. 59-63; Col. 3, 11. 51- 53; Col. 4, 11. 2-6; Col. 5, 11. 1-5; Col. 9, 11. 28-31; Col. 10, 11. 9-11 (specification discloses that NLLBPs are used by, and at, the storage		-	Abstract; Col. 2, ll. 12-			
53; Col. 4, II. 2-6; Col. 5, II. 1-5; Col. 9, II. 28-31; Col. 10, II. 9-11 (specification discloses that NLLBPs are used by, and at, the storage			15, 17-20, 24-27; Col. 3,			
11. 1-5; Col. 9, 11. 28-31; Col. 10, 11. 9-11 (specification discloses that NLLBPs are used by, and at, the storage						
Col. 10, ll. 9-11 (specification discloses that NLLBPs are used by, and at, the storage						
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that NLLBPs are used by, and at, the storage						
by, and at, the storage						

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Col. 6, ll. 33-41, 46-56 (specification describes two embodiments			
		wherein "devices" making the storage access request are servers).			
		Col. 1, ll. 57-60 ("from the perspective of a workstation, or other computing device, seeking to access such server data, the access is much slower than access			
		to data on a local storage device "). Claim 3, Col. 9, 11. 37-39			
		(principles of claim differentiation require "devices," as a group, must necessarily be broader than "workstations").			
		Col. 3, ll. 17-23 (the "network protocol" used by the prior art "network servers" to allow access to storage devices is a			
		protocol that includes a high level file system command that must be translated into low level storage requests).			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		April 6, 2005 Reply to			
		Office Action at 10-11,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. E;			
		July 22, 2005 Reply to			
		Office Action at 24-27,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		(Crossroads			
		distinguished Petal,			
		Spring and Oeda as			
		having a server that			
		provided controlled			
		access to storage was required to translate high			
		level file system			
		commands into low level			
		commands in order to			-
		send the NLLBP to the			·
		storage devices).			
		April 6, 2005 Reply to			
		Office Action at 8-11,			
		19, 22-23, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		E; July 22, 2005 Reply			
		to Office Action at 11- 17, 21-28, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		F (showing that			
		Crossroads did not make			
		a sweeping disclaimer of	· · ·		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
	-	any use of a "network			
		server"; Crossroads			·
		distinguished its			
		invention from Oeda,			
		Petal and Spring based			
		on the requirement that			
		the "network server"			
		that provided controlled			
		access to storage was			
		required to translate the	· · · · · · · · · · · · · · · · · · ·		
		high level file system			
		command into low level			
		commands in order to			
	·	send the NLLBP to the			
		storage device, not the			
		use of Ethernet			
		networks, Ethernet or			
		TCP/IP).			
		Col. 2, 11. 17-20; Col. 5,			
		11. 19-22, 50-57, 60-63;			
		Col. 6, 11. 32-37; '147	•		
	·	Patent, Claim 1, Col. 9,			
		Il. 28-32 (disclosing and			·
		claiming embodiments			
		using Fibre Channel; the			
		inclusion of "without			
		involving network			
		protocols" according to			
		Defendants' expert			
		would prohibit the use of			
		Fibre Channel despite			
		the fact that these are			
		express embodiments).			
		0-1-5-11-52-56 (Piles			
		Col. 5, 11. 53-56 (Fibre			
		Channel is a protocol			
		19	12		
		19			

Actual Claims	Crossroads' Proposed	Special Master's Proposed Construction of Disputed TermsdCrossroads'Defendants' ProposedDefendants'Speci				
Language	Construction	Evidence	Construction	Evidence	Special Master's Construction	
		used for communications				
		over "Fibre Channel				
		based networks").				
		Extrinsic:				
		March 7, 2011 Supp.				
		Decl. of John Levy,				
		Ph.D., ¶¶ 9-13 (data				
		transfer in networks best				
		understood as having				
		layers; when TCP/IP and				
		Ethernet protocols were used by prior art systems				
		to transport high level				
		network file system				
		requests, a network				
		server would translate				
		such requests into low				
		level requests to access				
		storage); ¶¶6-7 (prior art				
		"server" described in				
		patents-in-suit was specifically a device that				
		allowed access between				
		the device requesting				
		"access to data" and the				
		storage devices using				
		something called a				
		"network protocol"; such				
		"servers" implemented				
		file systems and received				
		high level file system protocols from devices				
		requesting data access).				
		requesting data access).				
		April 28, 2011 2d Supp.				

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Decl. of John Levy,			
		Ph.D., ¶4 (person of			
		ordinary skill would			
		understand that the			
		specification discloses a			
		server that sends			
		requests for storage			
		access to a storage router			
		using NLLBP).			
		May 11 2011 2d Summ			
		May 11, 2011 3d Supp. Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers functioning			
		as workstations on the			
		network").			
		Special Master's Report			
· · · · · · · · · · · · · · · · · · ·		Special Master's Report	·		
		19	5		

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		at 22, <i>Dot Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data transmitting device that allows users to integrate different servers or workstations into a storage network"). Hr'g Tr. 76:4-10, 82:20- 23, March 8, 2011 (in hypothetical network of Graphic 2 of Defendants' Markman Demonstratives (Fore Decl. ISO Pl's Post-Hr'g Cl. Const. Br., Ex. J) the workstation sends high level file systems commands to network server); <i>Id.</i> at 200:2-5, 201:22-24, 202:24-203:3 (Defendants expressly stated that a "device" is a "computer" that is both "reading or writing data from a storage device" and sending NLLBPs and the only "device" that does so in Graphic 2, shown in Crossroads' Post-Hearing Brief is the "network server").			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Crossroads' Concise			
		Statement of			
		Infringement, Dot Hill			
		Litigation (Case No. A-			
		03-CV-754 SS), Fore			
		Decl. ISO Pl.'s Post-Hr'g			
		Cl. Const. Br., Ex. H;			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
	· · · · ·	Ph.D., ¶5 (accused			
		devices in Dot Hill			
		litigation were designed			
		to be used in			
		hypothetical system			
		shown in Graphic 2 of			
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-Hr'g			
		Cl. Const. Br., Ex. J)).			
		Hr'g Tr. at 81:12-15,			
		March 8, 2011 (all			
		parties agree that the			
		Petal, Spring and Oeda			
		references disclose			
		systems with a "server"			
		interposed between			
		workstations and			
		storage devices); <i>Id.</i> at			
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants			
		agree that the			
		"translation"			
		distinguished by			
		patentees during			
		reexamination was from			
		high level file system			
		ingli level me system			
		19	7		
		19	7		

commands into NLLBP requests): Id. at 89:11-16 (parties agree that "allowing access using NLLBP" occurs without a translation from a high level file system command to a NLLBP requesty. Id. at 91:14-16, 92:1-5, 152:4- 7 (Defendants concede that the "network protocols" described in the Oeda, Peal and Spring references include file system commands thus, including "without involvingnetwork protocols" is superfluous to "without involving a translation from a high level file system command to a native low level block protocol request.") April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶7 (CUFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses term "network protocol"	Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
(parties agree that "allowing access using NLLBP" occurs without a translation from a high level file system command to a NLLBP request; <i>id.</i> at 91:14-16, 92:1-5, 152:4- 7 (Defendants concede that the "network protocols" described in the Oeda, Petal and Spring references included file system commands thus, including "without involving network protocols" is superfluous to "without involving a translation from a high level file system command to a native low level block protocol request.") April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., \$7 (CIFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, \$37			commands into NLLBP			
"allowing access using NLLBP" occurs without a translation from a high level file system command to a NLLBP request); <i>Id.</i> at 91:14-16, 92:1-5, 152:4- 7 (Defendants concede that the "network protocols" described in the Ocda, Petal and Spring references includeg "without involving network protocols" described in the Ocda, Petal and Spring references including "without involving network protocols" is superfluous to "without involving a translation from a high level file system command to a native low level file system command to a native low level file system command to a native low level file system polic, of John Levy, Ph.D., \$7 (CIFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, \$37 (Defendants' expert uses)						
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 without a translation from a high level file system command to a NLLBP request); <i>Id.</i> at 91:14-16, 92:1-5, 152:4- 7 (Defendants concede that the "network protocols" described in the Oeda, Petal and Spring references included file system commands thus, including "without involving network protocols" is superfluous to "without involving a translation from a high level file system command to a native low level block protocol request.") April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶7 (CIFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses 						
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NLLBP request); <i>ld.</i> at 91:14-16, 92:1-5, 152:4- 7 (Defendants concede that the "network protocols" described in the Oeda, Petal and Spring references included file system commands thus, included file system commands thus, included file system commands thus, involving a translation from a high level file system command to a native low level block protocol request.") April 28, 2011 2d Supp. Dect. of John Levy, Ph.D., fly ClFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, 137			from a high level file			
91:14-16, 92:1-5, 152:4- 7 (Defendants concede that the "network protocols" described in the Oeda, Petal and Spring references included file system commands thus, including "without involving network protocols" is superfluous to "without involving a translation from a high level file system command to a native low level block protocol request.") April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., "77 (CIFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses						
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command to a native low level block protocol request.") April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶7 (CIFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses			translation from a high			
level block protocol request.") April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶7 (CIFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses			level file system			
request.") April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶7 (CIFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses			command to a native low			
April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶7 (CIFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses			level block protocol			
Decl. of John Levy, Ph.D., ¶7 (CIFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses			request.")			
Decl. of John Levy, Ph.D., ¶7 (CIFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses			April 28, 2011 2d Supp.			
Ph.D., ¶7 (CIFS, NFS and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses						
and FTP are network protocols). March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses						
March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses						
Brian Berg, ¶37 (Defendants' expert uses			protocols).			
Brian Berg, ¶37 (Defendants' expert uses			March 7, 2011 Decl. of			
(Defendants' expert uses						
term "network protocol"	1. 1 .					
			term "network protocol"			
		······································	and the state of the			
198			19	8		

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed T Defendants' Proposed	Defendants'	Special Master's
Language	Crossroads' Proposed Construction	Evidence	Construction	Evidence	Construction
88_		broadly such that it			
		would include Fibre			
		Channel).			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a workstation			
		gets "access to the local			
		storage device through			
		native low level block			
		protocols").			
		Hr'g Tr. at 129:7-13,			
		March 8, 2011			
		(Defendants agreed to			
		remove "without			
		involving Ethernet			
		networks, Ethernet			
		protocols, TCP/IP" from			
		their proposed			
		construction).March 7,			
		2011 Supp. Decl. of			
		John Levy, Ph.D., ¶13			
		(Ethernet and TCP/IP			
		protocols are concerned			
		only with delivery of			
		messages).			
		E-b			
		February 22, 2011 Decl.			
		of John Levy, Ph.D., ¶36 (NLLBP "used" by the			
		storage router to allow			
		access is the NLLBP			
		sent to it from the			
		device; this NLLBP is			
		the NLLBP appropriate			
		for the virtual local			

Actual Claims	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Construction	storage, not the NLLBP	Construction	Eviuence	Construction
		of the storage device			
		storing the data).			
		Dictionary of Computer and Internet Terms 311			· · · ·
		$(6^{\text{th}} \text{ Ed. 1996}), \text{ Fore}$			
		Decl. ISO Pl.'s Cl.			
		Const. Br., Ex. S			
		(defining "native" as "1. designed for a specific			
		hardware or software			
		environment (rather than			
		for compatibility with			
		something else)").			
		Stip. Defs. of Cl. Terms,			
		Fore Decl. ISO Pl.'s			
		Post-Hr'g Cl. Const. Br., Ex. I (parties agree that			
		"virtual local storage" is			
		"storage space, in a			
		storage device that is			
		remotely connected to an initiator device to be			
		within or locally			
		connected to the initiator			
		device").			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶6 (under Defendants'			
		construction, a protocol			
		used for communication			
		over "Fibre Channel			
		based networks" would	I		

	· · · · · · · · · · · · · · · · · · ·	special Master's Proposed	Construction of Disputed	lerms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		be a network protocol).			
allowing access from the device connected to the first transport medium to the storage device using native low level, block protocols.	Native low level block protocol ("NLLBP"): Native: "Designed for use with a specific type of storage device." Block Protocol: "A set of rules or standards for exchanging information with a block-oriented storage device." Low Level Protocol: "A set of rules or standards that enable computers to exchange information without involving high level file system protocols." Or, in the alternative: Native Low Level Block Protocol: "A set of rules or standards designed for exchanging information with a block-oriented storage device without	Native low level block protocol: Intrinsic: Abstract, Col. 1, 11. 44, Col. 2, 11. 13-14, 26; Col. 3, 11. 17, 22-23, 53, 63; Col. 4, 11. 4-5, 25; Col. 5, 1. 3; Claim 1, Col. 9, 11. 29-30; Col. 10, 1. 10; Col. 10, 11. 48-49 (specification consistently uses "NLLBP" as a single term). Fig. 1; Col. 3, 11. 20-23 (network server shown in Fig. 1 communicates with storage devices via NLLBPs even though the SCSI commands are sent by a network server). Fig. 1, Col. 1, 11. 49-54; Col. 3, 11. 17-23 (the "storage router" of the invention is contrasted with a "network server" that allowed access to storage devices by translating high level file	Native low level block protocol:Does not need to be separately construed; alternatively, may be construed with reference to individual terms as followsNative: Designed for use with a specific type of storage device.Low-level protocol: A set of rules or standards that enable computers to exchange information without involving network servers, Ethernet networks, or higher-level protocols such as TCP/IP, Ethernet protocols, network protocols.Block protocol: A set of rules or standards for exchanging information with a block-oriented storage	See '035 patent, claim 1.	"A set of rules or standards that enable computers to exchange information and do not involve the overhead of high level protocols and file systems typically required by network servers."

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
d8-	system protocols."	"network protocol" into			
		low level requests (i.e.,			
		NLLBP) and sending the	the second s		
		NLLBP to the physical			
		storage devices).			
		Claim 1, Col. 9, ll. 13-30			
		(storage router "allow[s]			
		access from devices			
		connected to the first			
		transport medium to the			
		storage devices using			
		native low level, block protocols" (emphasis			
		added); the storage			
		router, specifically, the			
		supervisor unit within			
		the storage router, "uses"			
		the NLLBP to permit or			
		enable access).			
		Abstract; Col. 2, Il. 12-			
		15, 17-20, 24-27; Col. 3,			
		11. 59-63; Col. 3, 11. 51-			
		53; Col. 4, 11. 2-6; Col. 5,			
		II. 1-5; Col. 9, II. 28-31;			
		Col. 10, 11, 9-11			
		(specification discloses			
		that NLLBPs are used			
		by, and at, the storage router to allow access).			
		Touter to allow access).	· · · · ·		
		Col. 6, 11. 33-41, 46-56			
		(specification describes			
		two embodiments			
		wherein "devices"			
		making the storage			

Special Master's Proposed Construction of Disputed Terms						
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction	
		access request are servers).				
		April 6, 2005 Reply to Office Action at 10-11, Fore Decl. ISO				
		Crossroads' Post-Hr'g Cl. Const. Br., Ex. E; July 22, 2005 Reply to				
		Office Action at 24-27, Fore Decl. ISO Crossroads' Post-Hr'g				
		Cl. Const. Br., Ex. F (Crossroads distinguished Petal,				
		Spring and Oeda as having a server that provided controlled				
		access to storage was required to translate high level file system				
		commands into low level commands in order to send the NLLBP to the				
		storage devices).				
		April 6, 2005 Reply to Office Action at 8-11, 19, 22-23, Fore Decl.				
		ISO Crossroads' Post- Hr'g Cl. Const. Br., Ex. E; July 22, 2005 Reply				
		to Office Action at 11- 17, 21-28, Fore Decl. ISO Crossroads' Post-				
		Hr'g Cl. Const. Br., Ex. F (showing that				

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Crossroads did not make			
		a sweeping disclaimer of			
		any use of a "network			
		server"; Crossroads			
		distinguished its			
		invention from Oeda,			
		Petal and Spring based			
		on the requirement that			
		the "network server"			
		that provided controlled			
		access to storage was			
		required to translate the			
		high level file system			
		command into low level			
		commands in order to			
		send the NLLBP to the			
		storage device, not the			
		use of Ethernet			
		networks, Ethernet or			
		TCP/IP).			
		Col. 2, 11. 17-20; Col. 5,			
		11. 19-22, 50-57, 60-63;			
		Col. 6, 11. 32-37; '147			
		Patent, Claim 1, Col. 9,			
		11. 28-32 (disclosing and			
		claiming embodiments			
		using Fibre Channel; the inclusion of "without			
		involving network			
		protocols" according to			
		Defendants' expert			
		would prohibit the use of			
		Fibre Channel despite			
		the fact that these are			
		express embodiments).			
		capiess emotuments).			
	1	<u> </u>			
		20	4		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Col. 5, 11. 53-56 (Fibre			
		Channel is a protocol			
		used for communications			
		over "Fibre Channel based networks").			
		based networks).			
		Col. 1, 11. 42-53; Col. 3,			
		11. 16-24; Col. 5, 11. 1-5			
		(specification notes that			
		NLLBPs do not involve			
		overhead of high level			
		network protocols or file			
		systems).			
		Col. 6, ll. 31-41, 46-56			
		(specification has two			
		distinct embodiments in			
		which the "devices"			
		making storage requests			
		are servers).			
		Extrinsic:			
		March 7, 2011 Supp.			
		Decl. of John Levy,			
		Ph.D., ¶2; March 7, 2011			
		Decl. of Brian Berg ¶42			
		(experts agree that			
		"NLLBP" is not a term			
		of art).			
		IIn's Tr of 121.9 16			
		Hr'g Tr. at 121:8-16, March 8, 2011 (parties	and the second second second		
		agree that "NLLBP"			
		should be construed as a			
		single term, consistent			
		with use in specification)			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		March 7, 2011 Supp.			
		Decl. of John Levy,			
		Ph.D., ¶13 (Ethernet and TCP/IP protocols are			
		concerned only with			
		delivery of messages).			
		March 7, 2011 Decl. of			
		Brian Berg ¶48 (a SCSI			
		command would be a			
		low level command).			
		March 7, 2011 Decl. of			
		Brian Berg, ¶37 (states			
		that "low level" means "without involving			
		file system protocols.").			
		April 28, 2011 2d Supp.			
		Decl. of John Levy, Ph.D., ¶4 (person of			
		ordinary skill would			
		understand that the			
		specification discloses a server that sends			
		requests for storage			
		access to a storage router			
		using NLLBP).			
		Hr'g Tr. 76:4-10, 82:20-			
		23, March 8, 2011 (in			
		hypothetical network of Graphic 2 of Defendants'			
		Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-Hr'g			
		20	6		

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Cl. Const. Br., Ex. J) the			
		workstation sends high			
		level file systems			
		commands to network			
		server); <i>Id.</i> at 200:2-5,			
		201:22-24, 202:24-203:3			
		(Defendants expressly			
		stated that a "device" is a			
		"computer" that is both			
		"reading or writing data			
		from a storage device"			
		and sending NLLBPs			
		and the only "device"			
		that does so in Graphic			
		2, shown in Crossroads'			· ·
		Post-Hearing Brief is the			
		"network server").			
			· · · · · · · · · · · · · · · · · · ·		
		Crossroads' Concise			
		Statement of			
		Infringement, Dot Hill			
		Litigation (Case No. A-			
	· ·	03-CV-754 SS), Fore			
		Decl. ISO Pl.'s Post-Hr'g			
		Cl. Const. Br., Ex. H;			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶5 (accused			
		devices in Dot Hill			
		litigation were designed			
		to be used in			
		hypothetical system			
		shown in Graphic 2 of			
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-Hr'g Cl. Const. Br., Ex. J)).			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		Hr'g Tr. at 81:12-15,			
		March 8, 2011 (all			
		parties agree that the			
		Petal, Spring and Oeda			
		references disclose			
		systems with a "server"			
		interposed between			
		workstations and			
		storage devices); Id. at			
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants			
		agree that the			
		"translation"			
		distinguished by			
		patentees during			
		reexamination was from			
		high level file system commands into NLLBP			
		requests); <i>Id.</i> at 89:11-16 (parties agree that			
		"allowing access			
		using NLLBP" occurs			
		without a translation			
		from a high level file			
		system command to a			
		NLLBP request); Id. at			
		91:14-16, 92:1-5, 152:4-	· · · · · · · · · · · · · · · · · · ·		
		7 (Defendants concede			
		that the "network			
		protocols" described in			
		the Oeda, Petal and			
		Spring references			
		included file system			
		commands thus,			
		including "without			
		involving network			

ctual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		protocols" is superfluous			
		to "without involving a			
		translation from a high			
		level file system			
		command to a native low			
		level block protocol			
		request.")			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶7 (CIFS, NFS			
		and FTP are network			
		protocols).			
		Processi,			
		March 7, 2011 Decl. of			
		Brian Berg, ¶37			
		(Defendants' expert uses			
		term "network protocol"			
		broadly such that it			
		would include Fibre			
		Channel).			
		April 28, 2011 2d Supp.		1	
		Decl. of John Levy,			
		Ph.D., ¶6 (under			
		Defendants'			
		construction, a protocol			
		used for communication			
		over "Fibre Channel			
		based networks" would			
		be a network protocol).			
		February 22, 2011 Decl.			
		of John Levy, Ph.D., ¶¶			
		31, 33 (NLLBPs do not			
		have the overhead			
		associated with the use			
		associated with the use	I		

Actual Claims LanguageCrossroads' Proposed ConstructionCrossroads' EvidenceDefendants' Proposed Constructionof higher level protocols to access storage); Id. ¶ 34 (specification describes network servers communicating with storage using NLLBPs).of higher level protocols to access storage); Id. ¶	Defendants' Evidence	Special Master's Construction
to access storage); <i>Id.</i> ¶ 34 (specification describes network servers communicating with storage using		
Claim 29:		
The method of claim 28, further comprisingConfiguration:Configuration:See c	laim 1, supra.	No Construction Necessary.
maintaining a "A modifiable setting of Intrinsic: "Map"; otherwise		Necessary.
configuration wherein information."		
the configuration Col. 2, 11. 19-23; Col. 5,		
includes a map between 11. 53-54; Col. 6, 11. 58-		
the device and the one 64 (describing		
storage device, and "configuration" as		
further wherein the map information used to		
includes virtual LUNs control operation of the		
that provide a storage router and which representation of the is modifiable).		
storage device.		
'147 Patent: Col. 2, 11.		
28-32; Col. 9, 11. 36-41		
("configuration" can also		
include mapping		
information and		
additional information, such as information		
needed to "implement[]		
access controls").		
Claim 15, Col. 11, ll. 23-		
28 (the limitation		
"operable to maintain a		
configuration wherein the configuration		

		Special Master's Proposed	Construction of Disputed		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		includes a map"			
		would be meaningless			-
		under Defendants'			
		proposed construction).			
		Extrinsic:			
		Chaparral Markman			
		Order at 16, Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. L (parties			
		to earlier action agreed			
		to construe "maintain a			
		configuration" to mean			
		"keeping a modifiable			
		setting of information");			
		February 22, 2011 Decl.			
		of John Levy, Ph.D., ¶46			
		(person of ordinary skill			
		would understand			
		"maintaining a		· · · · ·	
		configuration" to mean			
		"keeping a modifiable			
		set of information").		· · · · · · · · · · · · · · · · · · ·	
2	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
further comprising					Necessary.
maintaining a	"Computing device that	Intrinsic:	Computer.		
configuration wherein	issues storage access				-
	requests."	Claim 1, Col. 9, 11. 27-30			
includes a map between		("devices" refers to the			
the device and the one		devices that make			
storage device, and		requests and are allowed			
further wherein the map		access to storage			
includes virtual LUNs		devices).			
that provide a representation of the		Col. 1, 11. 36-37; Col. 2,			
storage device.		11. 4-5; Col. 4, 11. 55-56;			
Siorage device.		$11. \pm 3, 001. \pm 11. 55 \pm 50,$		1	I

Actual Claims	Crossroads' Proposed Construction	Crossroads' Evidence	Construction of Disputed Te Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Construction		Construction	Evidence	Construction
		Col. 8, ll. 65-68 (the specification describes			
		the devices that make			
		requests to access the			
		storage devices as			
		"computing devices").			
		Col. 1, ll. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, ll. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
		Abstract, Col. 1, Il. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, ll. 38- 42, ll. 55-56 Col. 6, ll.			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			
		workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			
		April 6 2005 Poply to			
		April 6, 2005 Reply to Office Action at 8, 10,			
		12, 22, Fore Decl. ISO	5		
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
			· · · · · · · · · · · · · · · · · · ·		
		Extrinsic:			
		Amril 28, 2011 24 Summ			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would understand that in the			
		embodiments at Col. 6,			
		embodiments at Col. 6,			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master' Construction
		11. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			
	• • •	(4 th ed. 1995), Fore Decl.			
		ISO Crossroads' Cl.			
	· ·	Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or appliance.			
		Commonly used in			
		reference to peripherals			
		such as printers, CRTS			
		and disk drives").			
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8,			
		2011 (Defendants'			
		counsel agreeing that the			
		defining characteristic of			
		a device is that it is the			
		thing that issues storage			
	· · ·	requests).			
		May 11, 2011 3d Supp.	1		
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to storage).			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		Microsoft Computer			
		Dictionary 430 (3d Ed.	-		
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running			
		administrative software			-
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources	· · ·		
		to computers functioning			
		as workstations on the			
		network").			
		Special Master's Report		· · · ·	
		at 22, <i>Dot Hill</i>			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		(Court previously			
		construed "storage			
		router" as "a data			
		transmitting device that			
		allows users to integrate			
		different servers or			
		workstations into a			
		storage network").			
]
laim 30:					
he method of claim 29,	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
herein the map only		.			Necessary.
poses the device to	"Computing device that	Intrinsic:	Computer.		
UNs that the device	issues storage access				
ay access.	requests."	Claim 1, Col. 9, ll. 27-30			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		("devices" refers to the devices that make			
		requests and are allowed			
		access to storage			
		devices).			
		Col. 1, 11. 36-37; Col. 2,			
		11. 4-5; Col. 4, 11. 55-56;			
		Col. 8, 11. 65-68 (the specification describes			
		the devices that make			
		requests to access the			
		storage devices as			
		"computing devices").			
		Col. 1, ll. 57-60 ("from			
		the perspective of a			
		workstation, or other computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, ll. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing			
			-		
		21	6		

Language	Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		device that can make			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, 11. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			
		workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
	<u>_</u>	1	L		
		21	7		
		21	, /		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language		Extrinsic:	Constituction	LYNUCHUU	
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would			
		understand that in the			
		embodiments at Col. 6,			
		Il. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126 (4 th ed. 1995), Fore Decl.			
		(4° ed. 1993), Fore Deci. ISO Crossroads' Cl.			
		Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or appliance.			
		Commonly used in			
		reference to peripherals			
		such as printers, CRTS			
		and disk drives").			
		Hr'g Tr. at 202:24- 203:3, 205:4-7, Mar. 8,			
		203:3, 203:4-7, Mar. 8, 2011 (Defendants'			
		counsel agreeing that the			
		defining characteristic of			
		a device is that it is the			
		thing that issues storage			
		requests).	and the second		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers functioning			
		as workstations on the			
		network").			
		Special Master's Report			
		at 22, Dot Hill			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		(Court previously			
		construed "storage			
		router" as "a data			
		transmitting device that			
		allows users to integrate different servers or			
		workstations into a			
 		workstations into a			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		storage network").		······································	
Claim 31:			and free of the second s		
The method of claim 28, further comprising maintaining a configuration including a map from a host device ID to a virtual LUN representation of the storage device to a obysical LUN of the storage device.	Configuration: "A modifiable setting of information."	Configuration: Intrinsic: Col. 2, 1l. 19-23; Col. 5, 1l. 53-54; Col. 6, 1l. 58- 64 (describing "configuration" as information used to control operation of the storage router and which is modifiable). '147 Patent: Col. 2, 1l. 28-32; Col. 9, 1l. 36-41 ("configuration" can also include mapping information and additional information, such as information needed to "implement[] access controls"). Claim 15, Col. 11, 1l. 23- 28 (the limitation "operable to maintain a configuration wherein the configuration includes a map" would be meaningless under Defendants' proposed construction). Extrinsic:	Configuration: "Map"; otherwise indefinite.	See claim 1, supra.	No Construction Necessary.

Actual Claims	Crossroads' Proposed	Special Master's Proposed Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		<i>Chaparral</i> Markman Order at 16, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L (parties to earlier action agreed to construe "maintain a configuration" to mean "keeping a modifiable setting of information"); February 22, 2011 Decl. of John Levy, Ph.D., ¶46 (person of ordinary skill would understand "maintaining a configuration" to mean "keeping a modifiable set of information").			
Claim 32:					
,	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
urther comprising partitioning storage pace on the storage	"Computing device that issues storage access	Intrinsic:	Computer.		Necessary.
	requests."	Claim 1, Col. 9, II. 27-30 ("devices" refers to the devices that make requests and are allowed access to storage devices). Col. 1, II. 36-37; Col. 2, II. 4-5; Col. 4, II. 55-56; Col. 8, II. 65-68 (the specification describes the devices that make requests to access the storage devices as			

		Special Master's Proposed	Construction of Disputed 7	ſerms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		"computing devices").		· · · · · · · · · · · · · · · · · · ·	
		Col. 1, ll. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, 11. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, 11. 38-			
		42, 11. 55-56 Col. 6, 11. 45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office	,		
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		("Device" is used over	· · ·		
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would			
		understand that in the			
		embodiments at Col. 6,			
		11. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).	1		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			
		(4 th ed. 1995), Fore Decl.			
		ISO Crossroads' Cl.	-		
		Const. Br., Ex. W			
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or appliance.			
		Commonly used in			
		reference to peripherals			
		such as printers, CRTS			
		and disk drives").			
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8,			
		2011 (Defendants'			
		counsel agreeing that the			
		defining characteristic of			
		a device is that it is the			
		thing that issues storage			
		requests).			
		May 11, 2011 3d Supp.			·
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
		storage).			
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
	I	Levy, Ph.D., Ex. A	l	······································	
		22	A		

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			
		printers and disk drives,			
		and provides resources			
		to computers functioning			
		as workstations on the			
		network").			
		Special Master's Report at 22, <i>Dot Hill</i>			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		(Court previously			
		construed "storage			
		router" as "a data	· · ·		
		transmitting device that			
		allows users to integrate			
		different servers or	· · · ·		
		workstations into a			
		storage network").			
Claim 33:	.			a contract of the second se	
The method of claim 32, further comprising	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction Necessary.
preventing the device	"Computing device that	Intrinsic:	Computer.		inccessary.
from accessing any	issues storage access	Intrast.			
storage on the storage	requests."	Claim 1, Col. 9, 11. 27-30			
levice that is not part of		("devices" refers to the			
a virtual local storage		devices that make			
partition assigned to the		requests and are allowed			
levice.		access to storage			
		devices).			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Col. 1, ll. 36-37; Col. 2,			
		11. 4-5; Col. 4, 11. 55-56;			
		Col. 8, 11. 65-68 (the			
		specification describes			
	·	the devices that make requests to access the			
		storage devices as	· · · · · ·		
		"computing devices").			
		Col. 1, 11. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device, seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		Claim 3, Col. 9, 11. 37-39 (principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, 11. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		22	۱ <u> </u>		- I
		22 			

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Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		Col. 2, 11. 4-6; Col. 3, 11.			
		3-6, 41-43; Col. 4, 11. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to	1 - A		
		various computing			
		devices such as			
		workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			
		April 6, 2005 Reply to			
		Office Action at 8, 10,			
		12, 22, Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const., Ex. E; July			
		22, 2005 Reply to Office			
		Action at 7-15, 21-23,			
		27-29, 32, 33, 35-37, 39,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F	· ·		
		("Device" is used over			
		ninety times in the			
		reexamination			
		prosecution history to			
		refer to types of devices			
		capable of making			
		requests for storage).			
		Extrinsic:			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., \P 4 (one of			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		ordinary skill would			
		understand that in the			
		embodiments at Col. 6,			
		11. 33-41; 46-56, it is the			
		server that sends			
		requests for storage			
		access to the storage			
		router using NLLBP).			
	· · · · · · · · · · · · · · · · · · ·				
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			
		(4 th ed. 1995), Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. W	· · · · ·		
		(defining device as "a			
		mechanical, electrical or			
		electromechanical			
		contrivance or appliance.			
		Commonly used in			
		reference to peripherals			
		such as printers, CRTS			
		and disk drives").			
		Hr'g Tr. at 202:24-			
		203:3, 205:4-7, Mar. 8,			
		2011 (Defendants'			
		counsel agreeing that the			
		defining characteristic of			
		a device is that it is the			
		thing that issues storage			
		requests).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		can request access to			
		storage).			
		Microsoft Computer Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d			
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
		"(1) on a local area			
		network (LAN), a			
		computer running			
		administrative software			
		that controls access to			
		the network and its			
		resources, such as printers and disk drives,			
		and provides resources			
		to computers functioning			
		as workstations on the			
		network").			
		Special Master's Report			
		at 22, <i>Dot Hill</i>			
		Litigation, Pl.'s Cl.			
		Const. Hr'g Ex. P-15			
		(Court previously			
		construed "storage			
		router" as "a data			
		transmitting device that allows users to integrate			
		different servers or			
		workstations into a			
		storage network").			
m 34:			A		
stem for providing tual local storage,	Configuration:	Configuration:	Configuration:	See claim 1, supra.	No Construction Necessary.

Special Master's Proposed Construction of Disputed Terms									
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction				
comprising:	"A modifiable setting of	Intrinsic:	"Map"; otherwise						
a host device;	information."		indefinite.						
a storage device remote		Col. 2, ll. 19-23; Col. 5,							
from the host device,		11. 53-54; Col. 6, 11. 58-							
wherein the storage		64 (describing							
device has a storage	· · · · ·	"configuration" as							
space;		information used to							
a first controller;		control operation of the							
a second controller;		storage router and which							
a first transport medium		is modifiable).							
operable according to a									
Fibre Channel		'147 Patent: Col. 2, ll.							
protocol, wherein the		28-32; Col. 9, 11. 36-41							
first transport medium		("configuration" can also							
connects the host		include mapping							
device to the first		information and							
controller;		additional information,							
a second transport		such as information							
medium operable		needed to "implement[]							
according to the Fibre		access controls").							
Channel protocol,									
wherein the second		Claim 15, Col. 11, ll. 23-							
transport medium		28 (the limitation							
connects the second		"operable to maintain a							
controller to the		configuration wherein							
storage device;		the configuration							
a supervisor unit coupled		includes a map"							
to the first controller		would be meaningless							
and the second		under Defendants'							
controller, the		proposed construction).							
supervisor unit		Entertain							
operable to: maintain a		Extrinsic:							
configuration that									
maps between the host		Chaparral Markman							
device and at least a		Order at 16, Fore Decl. ISO Crossroads' Cl.							
portion of the storage space on the storage		Const. Br., Ex. L (parties							
space on the storage		Const. Dr., LA. D (parties	L						

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
device; and		to earlier action agreed	y.		
-		to construe "maintain a			
		configuration" to mean			
		"keeping a modifiable			
		setting of information");			
		February 22, 2011 Decl.			
		of John Levy, Ph.D., ¶46	1		
		(person of ordinary skill			
		would understand			
		"maintaining a			
		configuration" to mean			
		"keeping a modifiable	- · · ·		
		set of information").			
mplement access	Access control(s):	Access control(s):	Access controls:	See '035 patent, claim 1.	"Controls which limit a
controls according to					device's access to a
the configuration for	"Controls which limit a	Intrinsic:	Controls that use a map		specific subset of storag
-	device's access to a		to permit a particular		devices or sections of a
the storage device	specific subset of storage	Fig. 3, Col. 3, 11. 7-59,	device to read data from		single storage device
using native low level,	devices or sections of a	Col. 4, 11. 7-27, 33-35,	or write data to a		according to a map."
block protocol.	single storage device	40-43, 48-50, 50-53	particular storage space		
	according to a map."	(Fig. 3 shows	assigned to the device,		
		embodiment in which all	and to prevent the device		
		workstations can access	from reading data to or		
		global storage device).	writing data from		
			storage space assigned to		
		Col. 4, 11. 7-11 ("access	other devices.		
		controls" applies to			
		shared storage).			
			Implement access	See "allow access	
		July 22, 2005 Reply to	controlsusing native	[ing]using native low	
		Office Action at 13-14,	low level, block	level, block protocol" at	
		Fore Decl. ISO	protocol:	'035 patent, claim 1.	
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F	Permit reading and		
		(discussion during	writing of data in the		
		reexamination, that the	native low level, block		
		"access controls" feature	protocol of the storage		

		Special Master's Proposed	Construction of Disputed Te	erms	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		includes the concept of	device, without		
		allowing multiple	involving network		
		devices to have access to	servers, Ethernet		
		shared storage).	networks, higher-level		
			protocols such as		
		Extrinsic:	TCP/IP, Ethernet		
			protocols, network		
		Chaparral Markman	protocols or file system		
		Order at 3-7, 15, Fore	protocols, or translation		
		Decl. ISO Crossroads'	from one protocol to		
		Cl. Const. Br., Ex. L	another.		
		(Crossroads'			
		construction parallels			
		historic construction; the			
		invention contemplates			
		using access controls for			
	,	an entire storage device			
		as well as shared			
		storage; Court has			
		rejected a construction in			
		which a particular subset			
		of storage could only be			
		accessed by a single			
		workstation).			
		Comments on Statement			
		of Reasons for			
		Patentability and/or			
		Confirmation, Fore Decl.			
		ISO Pl.'s Cl. Const. Br.,			
		Ex. I (patentees			
		expressly disagreed with			
		any characterization of		·	
		the claims that were			
		"inconsistent with the			
		claim language,			
		specification or prior			

	\$	Special Master's Proposed	Construction of Disputed	Terms	·
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		prosecution history.").			
implement access controls according to the configuration for	Native low level block protocol ("NLLBP"):	Native low level block protocol:	Native low level block protocol:	See '035 patent, claim 1.	"A set of rules or standards that enable computers to exchange
the storage space on the storage device using native low level ,	Native: "Designed for use with a specific type of storage	Intrinsic: Abstract, Col. 1, 11. 44,	Does not need to be separately construed; alternatively, may be		information and do not involve the overhead
block protocol.	device."	Abstract, Col. 1, II. 44, Col. 2, II. 13-14, 26; Col. 3, II. 17, 22-23, 53, 63;	construed with reference to individual terms as		of high level protocols and file systems
	Block Protocol: "A set of rules or	Col. 4, ll. 4-5, 25; Col. 5, 1. 3; Claim 1, Col. 9, ll.	follows:		typically required by network servers."
	standards for exchanging information with a	29-30; Col. 10, l. 10; Col. 10, ll. 48-49	Native: Designed for use with a		
	block-oriented storage device."	(specification consistently uses "NLLBP" as a single	specific type of storage device.		
	Low Level	term).	Low-level protocol:		
	Protocol:		A set of rules or		
	"A set of rules or	Fig. 1; Col. 3, 11. 20-23	standards that enable		
	standards that enable	(network server shown	computers to exchange		
	computers to exchange	in Fig. 1 communicates	information without		
	information without	with storage devices via	involving network		
	involving high level file	NLLBPs even though	servers, Ethernet		
	system protocols."	the SCSI commands are	networks, or higher-level		
		sent by a network	protocols such as		
	Or, in the alternative:	server).	TCP/IP, Ethernet		
			protocols, network		
	Native Low Level	Fig. 1, Col. 1, 11. 49-54;	protocols or file system		
	Block Protocol:	Col. 3, 11. 17-23 (the	protocols.		
"A set of		"storage router" of the			
	"A set of rules or	invention is contrasted	Block protocol:		
	standards designed for	with a "network server"	A set of rules or		
	exchanging information	that allowed access to	standards for exchanging		
	with a block-oriented	storage devices by	information with a		
	storage device without	translating high level file	block-oriented storage		
	involving high level file	system commands of the	device]
	system protocols."	"network protocol" into			1

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		low level requests (i.e.,			- -
		NLLBP) and sending the			
		NLLBP to the physical			
		storage devices).			
		Claim 1, Col. 9, ll. 13-30			
		(storage router "allow[s]			
		access from <u>devices</u>			
		connected to the first			
		transport medium to the			
		storage devices using			
		native low level, block			
		protocols" (emphasis			
		added); the storage			
		router, specifically, the			
		supervisor unit within			
		the storage router, "uses"			<i>'</i>
		the NLLBP to permit or			
		enable access).			
		Abstract; Col. 2, ll. 12-			N
		15, 17-20, 24-27; Col. 3,			
		11. 59-63; Col. 3, 11. 51-			
		53; Col. 4, 11. 2-6; Col. 5,			
		ll. 1-5; Col. 9, ll. 28-31; Col. 10, ll. 9-11			
		(specification discloses			
		that NLLBPs are used			
		by, and at, the storage			
		router to allow access).			
		Touter to allow access).			
		Col. 6, 11. 33-41, 46-56			
		(specification describes			
		two embodiments	-		
		wherein "devices"			
		making the storage			
		access request are			

ctual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed T Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
· · · · ·		servers).			
		April 6, 2005 Reply to			
		Office Action at 10-11,			
		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. E;			
		July 22, 2005 Reply to			
		Office Action at 24-27,			
	· · · ·	Fore Decl. ISO			
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F			
		(Crossroads			
		distinguished Petal,			
		Spring and Oeda as			
		having a server that			
		provided controlled			
		access to storage was			
		required to translate high			
		level file system			
		commands into low level			
		commands in order to			
		send the NLLBP to the			
		storage devices).			
		April 6, 2005 Reply to			
		Office Action at 8-11,			
		19, 22-23, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		E; July 22, 2005 Reply			
		to Office Action at 11-			
		17, 21-28, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		F (showing that			
		Crossroads did not make			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		a sweeping disclaimer of			
		any use of a "network			
		server"; Crossroads			
		distinguished its			
		invention from Oeda,			
		Petal and Spring based			
		on the requirement that			
		the "network server"			
		that provided controlled			
		access to storage was			
		required to translate the			
		high level file system			
		command into low level			
		commands in order to			
		send the NLLBP to the			
		storage device, not the			
		use of Ethernet			
		networks, Ethernet or			
		TCP/IP).			
		Col. 2, 11. 17-20; Col. 5,			
		ll. 19-22, 50-57, 60-63; Col. 6, ll. 32-37; '147			
		Patent, Claim 1, Col. 9,			
		11. 28-32 (disclosing and			
		claiming embodiments			
		using Fibre Channel; the			
		inclusion of "without			
		involving network			
		protocols" according to			
		Defendants' expert			
		would prohibit the use of			
		Fibre Channel despite			
		the fact that these are			
		express embodiments).			
		• • • • • • • • • • • • • • • • • • •			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
<u> </u>	-	Channel is a protocol			
		used for communications			
1		over "Fibre Channel			
		based networks").			
	•				
	· ·	Col. 1, 11. 42-53; Col. 3,	· · · · ·		
		11. 16-24; Col. 5, 11. 1-5			
		(specification notes that			
		NLLBPs do not involve			
		overhead of high level			
		network protocols or file	1		
		systems).			
		Col. 6, 11. 31-41, 46-56			
		(specification has two			
		distinct embodiments in			
		which the "devices"			
		making storage requests			
		are servers).			
		Extrinsic:			
		March 7, 2011 Supp.			
		Decl. of John Levy,			
		Ph.D., ¶2; March 7, 2011			
		Decl. of Brian Berg ¶42			
		(experts agree that			
		"NLLBP" is not a term			
		of art).			
			-		
		Hr'g Tr. at 121:8-16,			
		March 8, 2011 (parties			
		agree that "NLLBP"			
		should be construed as a			
		single term, consistent			
		with use in specification)			

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Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed T Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
· · · · · · · · · · · · · · · · · · ·		March 7, 2011 Supp.			
		Decl. of John Levy,			
		Ph.D., ¶13 (Ethernet and			
		TCP/IP protocols are			
		concerned only with			
		delivery of messages).			
		derivery of messages).			
		March 7, 2011 Decl. of			
		Brian Berg ¶48 (a SCSI			
		command would be a			· · · ·
۰.		low level command).			
		March 7, 2011 Decl. of			
		Brian Berg, ¶37 (states			
		that "low level" means			
		"without involving			
		file system protocols.").			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶4 (person of			
		ordinary skill would			
		understand that the			
		specification discloses a			
		server that sends			
		requests for storage			
		access to a storage router			
		using NLLBP).			
		Hr'g Tr. 76:4-10, 82:20-			
		23, March 8, 2011 (in			
		hypothetical network of			
		Graphic 2 of Defendants'			
		Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-Hr'g			
		Cl. Const. Br., Ex. J) the			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		workstation sends high			
		level file systems			
		commands to network			
		server); Id. at 200:2-5,			
		201:22-24, 202:24-203:3			
		(Defendants expressly			
		stated that a "device" is a			
		"computer" that is both			
		"reading or writing data			
		from a storage device"			
		and sending NLLBPs			
		and the only "device"			
		that does so in Graphic			
		2, shown in Crossroads'			
		Post-Hearing Brief is the			
		"network server").			
		Crossroads' Concise			
		Statement of			
		Infringement, Dot Hill			
		Litigation (Case No. A-			
		03-CV-754 SS), Fore			
		Decl. ISO Pl.'s Post-Hr'g			
		Cl. Const. Br., Ex. H;			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶5 (accused			
		devices in Dot Hill			
		litigation were designed			
		to be used in			
		hypothetical system			
		shown in Graphic 2 of			
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-Hr'g			
		Cl. Const. Br., Ex. J)).			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
0 <u>0</u> <u>0</u>		Hr'g Tr. at 81:12-15,			
		March 8, 2011 (all			
		parties agree that the			
		Petal, Spring and Oeda			
		references disclose			
		systems with a "server"			
		interposed between			
		workstations and			
		storage devices); Id. at			
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants			
		agree that the			
		"translation"			
		distinguished by			
		patentees during			
		reexamination was from	· ·		· -
		high level file system			
		commands into NLLBP			
		requests); Id. at 89:11-16			
		(parties agree that			
		"allowing access		,	
		using NLLBP" occurs			
		without a translation			
		from a high level file			
		system command to a			
		NLLBP request); Id. at			
		91:14-16, 92:1-5, 152:4-			
		7 (Defendants concede			
		that the "network			
		protocols" described in			
		the Oeda, Petal and			
		Spring references			
		included file system			
		commands thus,			
		including "without			
		involving network			
		protocols" is superfluous			

Actual Claims			Construction of Disputed Te		Smacial Masterstr
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		to "without involving a translation from a high level file system command to a native low level block protocol request.") April 28, 2011 2d Supp. Decl. of John Levy,			
		Ph.D., ¶7 (CIFS, NFS and FTP are network protocols).			
		March 7, 2011 Decl. of Brian Berg, ¶37 (Defendants' expert uses term "network protocol" broadly such that it would include Fibre Channel).			
		April 28, 2011 2d Supp. Decl. of John Levy, Ph.D., ¶6 (under Defendants'			
		construction, a protocol used for communication over "Fibre Channel based networks" would be a network protocol).			
		February 22, 2011 Decl. of John Levy, Ph.D., ¶¶ 31, 33 (NLLBPs do not have the overhead			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
· · · · · · · · · · · · · · · · · · ·		to access storage); <i>Id.</i> ¶ 34 (specification describes network servers communicating with storage using NLLBPs).			
Claim 35:					
The system of claim 34, wherein the supervisor unit is further operable to: maintain a configuration that	Configuration: "A modifiable setting of information."	Configuration: Intrinsic: Col. 2, Il. 19-23; Col. 5, Il. 53-54; Col. 6, Il. 58- 64 (describing	Configuration: "Map"; otherwise indefinite.	See claim 1, supra.	No Construction Necessary.
maps from the host device to a virtual representation of at least a portion of the storage space on the storage device to the storage device; and		"configuration" as information used to control operation of the storage router and which is modifiable).			
allow the host device, and allow the host device to access only that portion of the storage space that is contained in the map.		'147 Patent: Col. 2, ll. 28-32; Col. 9, ll. 36-41 ("configuration" can also include mapping information and additional information, such as information needed to "implement[] access controls").			
		Claim 15, Col. 11, II. 23- 28 (the limitation "operable to maintain a configuration wherein the configuration includes a map"			

	Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
			would be meaningless under Defendants' proposed construction). Extrinsic: <i>Chaparral</i> Markman Order at 16, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L (parties to earlier action agreed to construe "maintain a configuration" to mean "keeping a modifiable setting of information"); February 22, 2011 Decl. of John Levy, Ph.D., ¶46 (person of ordinary skill would understand "maintaining a configuration" to mean "keeping a modifiable set of information").			
٢ł	laim 36: he system of claim 35, herein the	Configuration:	Configuration:	Configuration:	See claim 1, supra.	No Construction Necessary.
co a 1 E rej sto	onfiguration comprises map from a host device to a virtual LUN presentation of the prage device to a hysical LUN of the prage device.	"A modifiable setting of information."	Intrinsic: Col. 2, Il. 19-23; Col. 5, Il. 53-54; Col. 6, Il. 58- 64 (describing "configuration" as information used to control operation of the storage router and which is modifiable).	"Map"; otherwise indefinite.		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		'147 Patent: Col. 2, II.			
		28-32; Col. 9, 11. 36-41			
		("configuration" can also			
		include mapping			
		information and			
		additional information,			
		such as information			
		needed to "implement[]			
		access controls").			
		Claim 15, Col. 11, ll. 23-			
		28 (the limitation			
		"operable to maintain a			
		configuration wherein			
		the configuration			
		includes a map"			
		would be meaningless			
		under Defendants'			
		proposed construction).			
		Extrinsic:			
		Extrinsic:			
		Chaparral Markman			
		Order at 16, Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. L (parties			
		to earlier action agreed			
		to construe "maintain a			
		configuration" to mean			
		"keeping a modifiable			
		setting of information");			
		February 22, 2011 Decl. of John Levy, Ph.D., ¶46			
		(person of ordinary skill			
		would understand			
		"maintaining a			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Dungunge		configuration" to mean "keeping a modifiable set of information").		Lividence	Construction
Claim 37:	a second dense de la second de la Receiver de la second			L. Martin	alementaria de la companya de la com
The system of claim 34, wherein the storage levice further comprises storage space partitioned nto virtual local storage for the host device.	[No claim term at issue]		[No claim term at issue]		
laim 38:					
The system of claim 37, wherein the supervisor unit is further operable to prevent the host levice from accessing my storage on the torage device that is not eart of a virtual local	[No claim term at issue]		[No claim term at issue]		
torage partition ssigned to the host levice.					
Claim 39:			Constant and the second s		
The system of claim 37, wherein the supervisor unit is further operable o prevent the host levice from accessing my storage on the torage device that is not bart of a virtual local torage partition ssigned to the host levice.	[No claim term at issue]		[No claim term at issue]		

TABLE OF CITATION ABBREVIATIONS

Abbreviation	Document(s)	Date	Exhibit No. or Range
	Joint Ma	iterials	
Hrg. Tr.	Transcript of <i>Markman</i> Hearing before the Honorable Karl Bayer, Jr.	3/08/2011	
Jt. Ex.	Markman Hearing Joint Exhibits		Jt. Ex. 101-114
	Plaintiff's Pleadin	igs and Exhibits	
Pl. Br.	Plaintiff Crossroads Systems Inc.'s Markman Brief	2/22/2011	
Pl. Br. Ex.	Exhibits to Declaration of Elizabeth Brown Fore dated 2/22/2011 (in support of Plaintiff's brief)		A-FF
Levy Decl.	Declaration of John Levy, Ph.D.	2/22/2011	
Levy Ex.	Exhibits to Declaration of John Levy, Ph.D.		A-F
Levy Supp.	Supplemental Declaration of John Levy, Ph.D.	3/07/2011	
Levy Supp. Ex.	Exhibits to Supplemental Declaration of John Levy, Ph.D.		A-L
Pl. Hrg. Ex.	Crossroads' Markman Hearing Exhibits		P-1 to P-37
Pl. PHB	Plaintiff Crossroads Systems Inc.'s Post-Hearing Markman Brief	4/29/2011	
Pl. PHB Ex.	Exhibits to Declaration of Elizabeth Brown Fore dated 4/29/2011 (in support of Plaintiff's post- hearing brief)		A-J
Levy 2 nd Supp.	Second Supplemental Declaration of John Levy, Ph.D.	4/28/2011	

Abbreviation	Document(s)	Date	Exhibit No. or Range
Levy 2 nd Supp. Ex.	Exhibits to Supplemental Declaration of John Levy, Ph.D.		A-D
Pl. RPHB	Plaintiff Crossroads Systems Inc.'s Reply Post- Hearing Brief	5/13/2011	
· · · · ·	Defendants' Plead	ings and Exhibits	
Def. Br.	Brief in Support of Defendants' Proposed Claim Constructions	2/22/2011	
Def. Ex.	Exhibits to Declaration of George W. Webb III (to accompany Defendants' brief) (also entered as Defendants' hearing exhibits)	2/22/2011	Def. Ex. 1-22
Berg Decl.	Declaration of Brian A. Berg	3/07/2011	
Berg App.	Appendices to Declaration of Brian A. Berg		Berg. App. A-J
Def. PHB	Defendants' Post-Hearing Brief on Issues of Claim Construction	4/29/2011	
Def. PHB Ex.	Exhibits to Declaration of George W. Webb III (to accompany Defendants' brief)	4/29/2011	Def. Ex. 23-24
Def. RPHB	Defendants' Reply Post-Hearing Brief on Issues of Claim Construction	5/13/2011	
	Frequently Cite	ed Documents	
°035 patent	U.S. Pat. 6,425,035	7/23/2002	Jt. Ex. 101
'147 patent	U.S. Pat. 7,051,147	5/23/2006	Jt. Ex. 102
First Reexam Reply	'035 file history, Reply to Office Action Under <i>Ex Parte</i> Reexamination Dated 2/07/2005	4/06/2005	Def. Ex. 6

Abbreviation	Document(s)	Date	Exhibit No. or Range
Second Reexam Reply	'035 file history, Reply to Office Action Under <i>Ex Parte</i> Reexamination Dated 5/24/2005	7/22/2005	Def. Ex. 7
'147 Reply	'147 file history, Reply to Office Action Dated 1/27/2005	7/27/2005	Def. Ex. 9
Horst Decl.	Declaration of Robert W. Horst and exhibits in <i>Crossroads v. Postvision</i> (W.D. Tex. case 1:10- cv-00652-SS)	5/20/2010	Def. Ex. 16