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

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CLERK US DISTRICT COURT WESTERN DISTRICT OF TEXAS

CROSSROAD SYSTEMS, INC.

Case No. 1:10-CV-6524SS

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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.

Plaintiff,

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 9th day of August, 2011.

Karl Bayer

Special Master

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.

<u>/s/ Karl Bayer</u> Karl Bayer

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

Term	Special Master's Recommended Construction
Device	No Construction Necessary.
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."

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

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.

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.

Actual Claims	Crossmonds' Dramas-1	Special Master's Proposed Crossroads' Proposed Crossroads'		Defendants'	Special Master's
Language	Crossroads Proposed Construction	Evidence	Defendants' Proposed Construction	Evidence	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	1 .	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, ll. 21-		access.")	
		24, 11. 36-37, 11. 53-56;			
	•	Col. 2, Il. 4-6; Col. 3, Il.		Second Reexam Reply	
		3-6, 41-43; Col. 4, Il.	1	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	
	and the second second	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	
The state of the s		"initiator" and "target"	-	invention of the '035	
		devices).		Patent provides a	
		1. 3.6.2005.5		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 Office Action at 7-15,		NLLBPs with the ability to control access	

A -4I Claire			onstruction of Disputed To		C
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
	- Could action	21-23, 27-29, 32, 33,	Construction	between host computers	
		35-37, 39, Fore Decl.	* 4	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	İ	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	
	4 100 100 100 100 100 100 100 100 100 10	server that sends		particular workstations	
		requests for storage		to specific assigned	
		access to the storage	S No. 1	subsets of storage	
	**	router using NLLBP).		devices or portions	
		TI M. C. IIII		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	

	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
1 1		used in reference to		controls which limit a	
		peripherals such as		computer's access")	
		printers, CRTS and disk			
		drives").		Def. Ex. 19, Rudolf	
				Graf, Modern	
		Hr'g Tr. at 202:24-		Dictionary of	
		203:3, 205:4-7, Mar. 8,		Electronics (1999) at	
		2011 (Defendants'		353	
		counsel agreeing that		D 6 D 60 16 6	
		the defining		Def. Ex. 20, Microsoft	
		characteristic of a device is that it is the		Computer Dictionary	
				(5th ed. 2002) at 256	
		thing that issues storage		Berg Decl. ¶ 59-63.	
		requests).		Beig Deci. § 39-03.	•
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that	1		
		can request access to			
		storage).			
		3.5			
		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 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		
	<u> </u>	and provides resources			

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			٠.
		workstations on the	A Company		
		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			
	1 - 1 - 	different servers or			
		workstations into a			
		storage network").			
		Sierage neurona y.			
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, Il. 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				shown in FIG. 3, for	

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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	i e e e e	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 the	(workstations A, B, C	
medium to the storage		Extrinsic:		and D). These subsets	
devices using native				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	
		Decl. ISO Crossroads'		58 and appear to the	
		Cl. Const. Br., Ex. L	·	associated workstation	
		(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		(Wernesmiter 2)	
		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	7	13 ("[T] the access	
		accessed by a single		controls provide the	
		workstation).		capability to permit or	
		workstationj.		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 Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's 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	
				overwriting or	
			the contract of the contract o	modifying data in	
			14.	storage assigned to	
			√ in the second of the second	another computer	
				workstation.")	
				First Reexam Reply at	
		The second secon			
		and the second second		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	
4				map that associates the	
				host devices with the	
				remote storage	
				devices")	
		* * * * * * * * * * * * * * * * * * *		devices	
				 	
				Second Reexam Reply	
				at 13 ("By assigning	
				storage devices or	
				portions thereof to	

Special Master's Proposed Construction of Disputed Terms						
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master' Construction	
	y the			particular computer		
				workstations, the		
	·			present invention		
				prevents each computer		
				workstations [sic] from		
•	4.			overwriting or		
				modifying data in		
	·			storage assigned to		
		The second of the second		another workstation").		
	1.			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,		
			1	the storage to which		

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.")	
				U.S. Pat	
				patent Reply to Office	
				Action at 15	
			1		
				U.S. Pat. 6,421,753	
				Patent Reply to Office	
				Action at 12	
				U.S. Pat. 6,738,854	

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
				patent Reply to Office Action at 19 U.S. Pat.5,942,972	
				Reply to Office Action at 13.	
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-	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)	"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."

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	
	a constant	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).	e e e e e e e e e e e e e e e e e e e	First Reexam Reply at	
				23	
·		Col. 4, ll. 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	4 11 1	Patentrequire the use	
•		same characteristics of		of higher level network	
		local storage).		protocols (and therefore	
•	`.			cannot allow access to	
		Col. 4, Il. 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).			
		Col. 5, Il. 11-17, Il. 24-			
		27 (supervisor unit		IN GENERAL –	
		within the storage router		Extrinsic Evidence	
		processes NLLBP			
		requests from the		Berg. Decl. ¶¶ 14-29,	
		devices to access		36-58	
		permitted storage).		30-30	
		permitted storage).		Levy Decl. ¶ 36 ("the	
		Abstract; Col. 2, Il. 12-		invention of the Patents-	

	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
		15, 17-20, 24-27; Col. 3,		in-Suit enables the	
		ll. 59-63; Col. 3, ll. 51-		workstation to send an	
		53; Col. 4, Il. 2-6; Col.		NLLBP to the storage	
		5, II. 1-5; Col. 9, II. 28-		router in order to make a	
		31; Col. 10, ll. 9-11		request for data.")	
		(specification discloses			
		that NLLBPs are used		WITHOUT	
	·	by, and at, the storage		INVOLVING	
	• •	router to allow access).		NETWORK	
		1		SERVERS -	
		Col. 6, Il. 33-41, 46-56		Intrinsic Evidence	
		(specification describes		<u> </u>	
		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)	
		servers).		server based systems)	
		Bel Vels).		1:50-54 ("Access to data	
		Col. 1, 1l. 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	in the second se	to the storage device")	
		much slower than access		to the storage device)	
		to data on a local		3:32-34 ("significantly	
		1		different from FIG. 1 in	
		storage device ").			
		G1: - 2 G 1 G 11 27		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	
	1	must necessarily be		limiting the	
		broader than		performance of	
		"workstations").		workstations 58 because	
				storage access involves	
	<u> </u>	Col. 3, Il. 17-23 (the		native low level, block	

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
 		"network protocol" used	je.	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		Hetwork 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		le ver protocols)	
		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	*		
		to send the NLLBP to		out various portions of	
		1		Petal that discuss using	
		the storage devices).		block level (i.e. low	
		A 11 6 2005 P 1		level) storage protocols,	
		April 6, 2005 Reply to		it is only in the context	
		Office Action at 8-11,		of the time period after	
	1	19, 22-23, Fore Decl.	*	high level RPCs have	

		cial Master's Proposed Co			
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's 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.")	
		II. 28-32 (disclosing and		(citing '035 patent at	
		claiming embodiments		1:47-54)	
		using Fibre Channel; the			
		inclusion of "without		Second Reexam Reply	

Actual Claims		cial Master's Proposed Co Crossroads'			C
Actual Claims Language	Crossroads' Proposed Construction	Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		involving network		at 11 ("It takes the	
		protocols" according to	4.74	computer time to create	
		Defendants' expert		a network protocol")	
		would prohibit the use		F	
		of Fibre Channel despite		Second Reexam Reply	
	•	the fact that these are		at 13 (the invention	
	·	express embodiments).	·	"does away with the	
				time consuming and	
		Col. 5, Il. 53-56 (Fibre		complex steps of	
		Channel is a protocol		creating and processing	
		used for		higher-level network	
	· ·	communications over		protocols at a server.")	
	·	"Fibre Channel based		(emphasis added)	
		networks").		(emphasis added)	
		networks).		Second Reexam Reply	
		Extrinsic:		at 13 ("The present	
		Extrinsic.		invention thus routes	
	,	March 7, 2011 Supp.		NLLBPs to the remote	
		Decl. of John Levy,		storage devices without	
				involving a network	
		Ph.D., ¶¶ 9-13 (data		· · · · · · · · · · · · · · · · · · ·	
		transfer in networks best		server.")	
		understood as having			
		layers; when TCP/IP	to the second se	Second Reexam Reply	
		and Ethernet protocols		at 10-13 (Graphics 2-4).	
		were used by prior art		Second Reexam Reply	
i .		systems to transport		at 22 (workstation must	
		high level network file		create network protocols	
		system requests, a		to communicate with	
		network server would		network server)	
		translate such requests			
		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-	2	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	

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	
	The state of the s	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	
				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	. 1.	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)")	
	·	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	

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		workstation can		
		computer running		communicate SCSI		
		administrative software		commands to a storage		
		that controls access to		device using the FC		
		the network and its		protocol through the		
		resources, such as		storage router.")		
	•	printers and disk drives,		· · · · · · · · · · · · · · · · · ·		
		and provides resources				
		to computers		'147 Reply at 13		
And the second of the second o		functioning as		(noting that use of a		
		workstations on the		network server		
		network").		necessarily involves		
				translation to higher		
		Special Master's Report		level protocols);		
		at 22, Dot Hill				
		Litigation, Pl.'s Cl.		'147 Reply at 13 ("Thus		
		Const. Hr'g Ex. P-15		the Specification points		
		(Court previously		that a native low level		
		construed "storage		block protocol is one		
		router" as "a data	· ·	that does not involve the		
		transmitting device that		overhead of high level		
		allows users to integrate		protocols used by		
		different servers or		network servers").		
		workstations into a		,		
		storage network").		WITHOUT		
		Storage network j.		INVOLVING		
		Hr'g Tr. 76:4-10, 82:20-		NETWORK		
		23, March 8, 2011 (in		SERVERS – Extrinsic		
		hypothetical network of		Evidence		
		Graphic 2 of				
		Defendants' Markman		Horst Decl. ¶ 16.		
	The state of the s	Demonstratives (Fore		110101 2011 101		
		Decl. ISO Pl's Post-		Horst Decl. ¶ 16-18.		
		Hr'g Cl. Const. Br., Ex.		Second Reexam Reply		
	1.	J) the workstation sends		at 9-10 ("In typical prior		
		high level file systems		art systemsto		
		commands to network		overcome the inability		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master' 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	4 14 1	network transport	
		sending NLLBPs and		medium and a network	
		the only "device" that		protocol such as	
	1	does so in Graphic 2,		Ethernet.")	
	· 1	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 <i>Dot</i>	1	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,			
			18		
			10		

	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
		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); <i>Id.</i> 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); <i>Id.</i> at 89:11-		level block commands	
		16 (parties agree that		to the storage device to	
		"allowing access		satisfy the request	
		using NLLBP" occurs		received from the	
		without a translation		workstation.")	
		from a high level file			
		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,		A STATE OF THE STA	
		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	

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		involving a translation		particularly time	
		from a high level file		consuming.")	
		system command to a		The state of the s	
		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.")	
	·	Hr'g Tr. at 129:7-13,		Hrg. Tr. 244:5-14	
		March 8, 2011		("Well, sure. It has the	
		(Defendants agreed to		same problem at the	
		remove "without		workstation")	
		involving Ethernet			
		networks, Ethernet		Hrg. Tr. 225:5-9.	
		protocols, TCP/IP" from			
		their proposed			
		construction).March 7,		WITHOUT	

		cial Master's Proposed Co			
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		10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
		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	the contract of the contract o	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	
				Ethernet. A problem	,
		Dictionary of Computer		with this prior art	
	·	and Internet Terms 311		solution was that the	
		(6 th Ed. 1996), 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,		transport medium.")	
		Fore Decl. ISO Pl.'s		(citing 1:47-54)	
		Post-Hr'g Cl. Const. Br.,		(emphasis added)	
		Ex. I (parties agree that		(ciripinasis added)	

		cial Master's Proposed Co		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	4	via Ethernet required the	
		connected to the		use of a higher level	
		initiator device").		network protocol.")	
		initiator de vice y.			
		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).	1	problem with this type	
		be a network protocor).		of system is exactly the	
				problem that the '035	
	·	William William Ber		Patent described in the	
				Background of the	
		The state of the s		Invention and was	
		THE STATE OF THE STATE OF		I I	
				designed to overcome.")	
		High Control			
				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	
			5	considered to be a	

	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		Collistraction	NLLBP") WITHOUT INVOLVING NETWORK PROTOCOLS Extrinsic Evidence Berg. Decl.¶¶ 46-48 Berg. App. H at 80-81 WITHOUT INVOLVING FILE SYSTEM COMMANDS Intrinsic Evidence First Reexam Reply at	Construction				
				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"					

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")	
		A STATE OF THE STA		WITHOUT	
		The second second		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	
	·	and the second second		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	
			Land of the second	other words, the storage	
				router is not required to	
				translate some high	
				level command from the	
				workstation (e.g., a file	
				system command, or	

Actual Claims Language	Crossroads' Proposed Construction	Crossroads'	Defendants' Proposed	D - C 1 4-1	0 1134 4
	T	Evidence	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	
				WITHOUT INVOLVING TRANSLATION	
				PROTOCOL TO ANOTHER – Extrinsic Evidence	
and a supervisor unit	Native low level block	Native low level block	Native low level block	IN GENERAL –	"A set of rules or
controller, the second controller and the buffer, the supervisor	Native: "Designed for use with	Intrinsic:	Does not need to be separately construed;	Berg. Decl. ¶ 41-43	standards that enable computers to exchange information and do not involve the
between devices connected to the first transport medium and the storage devices, to	storage device." Block Protocol: "A set of rules or standards for	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,	construed with reference to individual terms as follows: Native:	1.43-46 ("These protocols map directly to the mechanisms used	overhead of high level protocols and file systems typically required by network servers."
	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	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 protocol ("NLLBP"): Native: "Designed for use with a specific type of storage device." Block Protocol: "A set of rules or standards for	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 protocol ("NLLBP"): Native: "Designed for use with a specific type of storage device." Block Protocol: 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, Col. 9, ll. 29-30; Col.	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 protocol: protocol: Does not need to be separately construed; alternatively, may be construed with reference to individual terms as follows: Col. 2, II. 13-14, 26; construed with reference to individual terms as follows: Col. 5, I. 3; Claim 1, Col. 9, II. 29-30; Col. Native:	a high level protocol to a low-level protocol.") WITHOUT INVOLVING TRANSLATION FROM ONE PROTOCOL TO ANOTHER — Extrinsic Evidence Berg Decl. ¶¶ 30-34 Native low level block protocol: Native: Native low level block protocol: Native: Native low level block protocol: Native: Native low level block protocol: Native: Native low level block protocol: Oci 2, . 13-14, 26; Col. 2, . 13-14, 26; Col. 3, . 17, 22-23, 53, 63; Col. 4, . 4-5, 25; Col. 3, . 17, 22-23, 53, 63; Col. 4, . 4-5, 25; Col. 5, . 3; Claim Native low level block protocol: Native low level block protocol: Extrinsic Evidence NATIVE — Intrinsic Evidence NATIVE — Intrinsic Evidence 1.43-46 ("These protocols map directly to the mechanisms used

		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
	space on the storage	with a block-oriented	49 (specification	specific type of storage		
- 1	devices and to process	storage device."	consistently uses	device.	1:52-54 (""that the	
	data in the buffer to		"NLLBP" as a single		server must translate	
	interface between the	Low Level	term).	Low-level protocol:	into low level requests	
	first controller and the	Protocol:	The state of the state of	A set of rules or	to the storage device")	·
	second controller to	"A set of rules or	Fig. 1; Col. 3, 11. 20-23	standards that enable		
	allow access from	standards that enable	(network server shown	computers to exchange	2:29-31 (each	
	devices connected to	computers to exchange	in Fig. 1 communicates	information without	"workstation access[es]	
	the first transport	information without	with storage devices via	involving network	its virtual local storage	
	medium to the storage	involving high level file	NLLBPs even though	servers, Ethernet	as if it work [sic: were]	
	devices using native	system protocols."	the SCSI commands are	networks, or higher-	locally connected")	
	low level, block	· ·	sent by a network	level protocols such as		
	protocols.	Or, in the alternative:	server).	TCP/IP, Ethernet	NATIVE -	
				protocols, network	Extrinsic Evidence	
		Native Low Level	Fig. 1, Col. 1, Il. 49-54;	protocols or file system		
Ŋ		Block Protocol:	Col. 3, 11. 17-23 (the	protocols.	Berg. Decl. ¶ 44-45	
9			"storage router" of the			
29 of 373		"A set of rules or	invention is contrasted	Block protocol:	Def. Ex. 17, Webster's	
37		standards designed for	with a "network server"	A set of rules or	New World Dictionary	
ယ		exchanging information	that allowed access to	standards for	of Computer Terms (5th	
1		with a block-oriented	storage devices by	exchanging information	ed. 1994) (a native	-
		storage device without	translating high level	with a block-oriented	compiler is "a compiler	
		involving high level file	file system commands	storage device	that produces code	
		system protocols."	of the "network		usable only for a	
			protocol" into low level		particular computer;"	
- 1			requests (i.e., NLLBP)		native language is "a	
		·	and sending the NLLBP		computer language	·
			to the physical storage	-	peculiar to the machines	
			devices).		of one manufacturer");	
			Claim 1, Col. 9, Il. 13-		Def. Ex. 21,	
			30 (storage router		Dictionary.com	
			"allow[s] access from		Unabridged (based on	
			devices connected to the		Random House	
			first transport medium		Dictionary 2010),	
			to the storage devices		accessed from	
- 1			using native low level,	Maria de la companya della companya della companya della companya de la companya della companya	http://dictionary.referen	

		cial Master's Proposed Co			
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		block protocols"		ce.com on 2/12/2011.	
		(emphasis added); the			
		storage router,		Def. Ex. 22, IEEE	
		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, ll. 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, Il. 1-5; Col. 9, Il. 28-		Levy Decl. ¶ 36 (alleged	
		31; Col. 10, Il. 9-11		invention "presents	
		(specification discloses		virtual local storage to	
		that NLLBPs are used		the workstation that	
		by, and at, the storage		looks just like local	
		router to allow access).		storage to the	
	İ			workstation")	
		Col. 6, 11, 33-41, 46-56			
		(specification describes		Levy Supp. Decl. ¶ 23	
	The state of the s	two embodiments		("Consequently, the host	
		wherein "devices"		system will access the	
	·	making the storage		virtual local storage	
		access request are		using the NLLBP	
		servers).	en de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la co	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		The state of the s	
		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	1.7	low level block	
		Crossroads' Post-Hr'g		protocol", supra.	

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's 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		_ DEGERTROTOGGE	
		the storage devices).		Extrinsic Evidence	
		the storage devices).		Def. Ex. 19, Rudolf	
		April 6, 2005 Reply to		Graf, Modern	
		Office Action at 8-11,		Dictionary of	
		19, 22-23, Fore Decl.		Electronics (1999) at 76	
		ISO Crossroads' Post-		Liectionics (1999) at 70	
				Def. Ex. 20, Microsoft	
		Hr'g Cl. Const. Br., Ex.			
		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-			
		Hr'g Cl. Const. Br., Ex.	•	Berg. Decl. ¶ 49-52	
		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			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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).			
		Same and the same of the same			
		Col. 2, Il. 17-20; Col. 5,			
		II. 19-22, 50-57, 60-63;			
		Col. 6, Il. 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, 1l. 53-56 (Fibre			
		Channel is a protocol			
		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			

		cial Master's Proposed Co			
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		network protocols or file			,
		systems).			
		Col. 6, Il. 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)			
		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		· ·	

			onstruction of Disputed To		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		command would be a			
		low level command).			
		low level command).			
		March 7, 2011 Decl. of			
		Brian Berg, ¶37 (states			- 1 to 1
		that "low level" means			
		"without involving	the state of the s		
		file system protocols.").			
		the system protocols.).			
		Amril 29, 2011 24 Summ			
		April 28, 2011 2d Supp.		The second second second	
		Decl. of John Levy,			
		Ph.D., ¶4 (person of		5	
		ordinary skill would			
		understand that the			
		specification discloses a			1
		server that sends			
		requests for storage			
		access to a storage			
		router using NLLBP).			
	Į.				
		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		And the second s	
	·	"device" is a "computer"			,
		that is both "reading or	The second section of the		

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		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			
		systems with a "server"			
		interposed between			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		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		1.54	
		requests); <i>Id.</i> at 89:11-			
		16 (parties agree that			
		"allowing access			
		using NLLBP" occurs			
	·	without a translation	to the second		
		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		la de la companya de	
		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.")			

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).			
		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).			

	. 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
Claim 2:		316 305			
The storage router of claim 1, wherein the supervisor unit maintains an allocation of subsets of storage space to associated devices connected to the first transport medium, wherein each subset is only accessible by the associated device connected to the first transport medium.	Device: "Computing device that issues storage access requests."	Device: Intrinsic: Claim 1, Col. 9, Il. 27-30 ("devices" refers to the devices that make requests and are allowed access to storage devices). Col. 1, Il. 36-37; Col. 2, Il. 4-5; Col. 4, Il. 55-56; Col. 8, Il. 65-68 (the specification describes the devices that make requests to access the storage devices as "computing devices").	Device: Computer.	See claim 1, supra.	No Construction Necessary.
		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, Il. 37-			
		39 (principles of claim differentiation require "devices," as a group,			

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.

	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
Lungungo	Constitution	must necessarily be	Constitution	Lyluchee	Construction
		broader than			
		"workstations").			
		Col. 6, Il. 31-41, 46-56			
		(the specification			'
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).	and the second of the second		
					*
	, in 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, 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"		- 1	
		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		e e e	
		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.			

			onstruction of Disputed Ter		
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,			
	·	II. 33-41; 46-56, it is the server that sends			
	·	requests for storage			*
		access to the storage			
		router using NLLBP).			
		Touter using IVEEDI J.			
		The McGraw-Hill	4.		
	·	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	48		
		appliance. Commonly			
		used in reference to			
		peripherals such as			
		printers, CRTS and disk			
		drives").			

Actual Claims	Crossroads' Proposed	Crossroads'	onstruction of Disputed Te Defendants' Proposed	Defendants'	Charial Masterile
Language	Crossroads Proposed Construction	Crossroads Evidence	Construction	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).	A Company of the Comp		
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d	e e e e e		
		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").			

		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	
			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").				Case 1:10-cv-00652-SS I
	Claim 3:	Trick to design the second sec	14 (A)	l same		I Company and the second secon	00
42	The storage router of claim 2, wherein the	Device:	Device:	Device:	See claim 1, supra.	No Construction Necessary.	Dodument 167-3
0	devices connected to the	"Computing device that	Intrinsic:	Computer.			Ď.
of 373	first transport medium	issues storage access					16
73	comprise workstations.	requests."	Claim 1, Col. 9, 11. 27-				7-3
			30 ("devices" refers to	The state of the s			0
			the devices that make requests and are allowed				Ξī
			access to storage	and the second second			lec
			devices).			·	0
							8/1
1			Col. 1, Il. 36-37; Col. 2,				Filed 08/10/11
			11. 4-5; Col. 4, 11. 55-56;				1 1
1			Col. 8, 11. 65-68 (the		4		П
			specification describes				Page
- 1			the devices that make				Ф
		·	requests to access the				10
			storage devices as "computing devices").				of 20
			computing devices).	:			Õ
			Col. 1, ll. 57-60 ("from				
			the perspective of a				
		e e	workstation, or other				

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
	-	computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local			
	•	storage device ").			
			et.		· ·
		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, Il. 31-41, 46-56		+	
		(the specification			
		describes "servers" as a	•		
		type of computing			
		device that can make		·	
	The state of the s	storage access requests).			
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			·
		Col. 2, Il. 4-6; Col. 3, Il.			
		3-6, 41-43; Col. 4, 11.			
		38-42, Il. 55-56 Col. 6,			
		ll. 45-55; Col. 8, ll. 65-			
		68 ("devices" is used		.**	
		broadly to refer to			
		various computing		· ·	
		devices such as			
		workstations,			
		input/output devices,			
		"initiator" and "target"			
		devices).			

A -41 CB - *-			onstruction of Disputed Te		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Construction		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).			
		requests for storage).			
		Extrinsic:			
		Latinisic.		•	
		April 28, 2011 2d Supp.			
	· ·	Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would			
		understand that in the			
		1			
		embodiments at Col. 6,			
		II. 33-41; 46-56, it is the			
		server that sends	·		
		requests for storage			
	1	access to the storage	·		
		router using NLLBP).	. 1.		
		The McGraw-Hill			
		Illustrated Dictionary of			
		Personal Computers 126			
		(4 th ed. 1995), Fore			

	Can	cial Master's Proposed Co	netruction of Disputed To	rme	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	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"). 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	Construction	Evidence	Construction
		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			

	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
Language	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	Construction	Evidence	Construction
		workstations into a storage network").			
The storage router of claim 2, wherein the devices connected to the first transport medium comprise workstations.	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, Il. 39-41 (specification defines workstation as a "computing device"). Extrinsic: Chaparral Markman Order at 16, Fore Decl.	Workstation: A computer including human input/output devices such as a display and keyboard and designed for use by one person at a time.	Extrinsic Evidence Berg Decl. ¶ 64-65 Def. Ex. 19, Rudolf Graf, Modern Dictionary of Electronics (1999) at 854 ("A personal computer or terminal devicewhich is used by someone to perform the greater part of his or	"A computer having input/output devices intended for use by humans."

Special Master's Proposed Construction of Disputed Terms

Crossroads'

Defendants' Proposed

Defendants'

Special Master's

Crossroads' Proposed

may consist of a

personal computer."

Actual Claims

workstations

connected to the first

transport medium;

and designed for use by

one person at a time.

workstation as a

"computing device").

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
	·	Extrinsic:			
					* **
		Chaparral Markman			
		Order at 16, Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. L			
		(Crossroads'			
		construction consistent			
		with historic			
		construction); Dot Hill			A Company of the Comp
		Stipulated Definitions of			
		Claim Terms at 2, Fore			
	·	Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. M			
		(parties in Dot Hill			
		litigation adopted			1
		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 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
a 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,		attording to a map.
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		

	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 operable: to map between the workstations and the	single storage device according to a map."	(Fig. 3 shows embodiment in which all workstations can access global storage device). Col. 4, Il. 7-11 ("access	data to or writing data from storage space assigned to other devices.		
storage devices; to implement access controls for storage space on the storage		controls" applies to shared storage). July 22, 2005 Reply to			
devices;		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;			

	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
		Court has rejected a construction in which a	**************************************		
		particular subset of		* * * * * * * * * * * * * * * * * * * *	·
		storage could only be			
		accessed by a single workstation).			
		workstation).			1
		Comments on Statement			
		of Reasons for			
		Patentability and/or			
		Confirmation, Fore			
	'	Decl. ISO Pl.'s Cl.			
	·	Const. Br., Ex. I		and the second	
		(patentees expressly			
		disagreed with any			
		characterization of the			
1		claims that were			
		"inconsistent with the			
		claim language,		,	
1		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	<u>-</u>	access using the
to the storage devices	native low level block	native low level block	native low level, block		NLLBP of the Virtual
using native low	protocol:	protocol:	protocol:		Local Storage without
level, block protocol					involving a translation
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 or
controls.	the NLLBP of the	Fig. 1, Col. 1, ll. 49-54;	native low level, block		file system protocols
	Virtual Local Storage	Col. 3, Il. 17-23 (the	protocol of the storage		
1	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	4.	request."
	command to a native	that allowed access to	networks, higher-level		
	low level, block	storage devices by	protocols such as		
	protocol request."	translating high level	TCP/IP, Ethernet		
		file system commands	protocols, network		

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).			
	·		in the second of the second		
		Claim 1, Col. 9, Il. 13-			
		30 (storage router			
		"allow[s] access from	and the second second second second	·	
		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,		2 .	
		"uses" the NLLBP to			
		permit or enable access).			
		0.1 4 11 7 47			
		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			

	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
	· .	manner that is transparent to the devices requesting			
		storage access).			
		Col. 5, Il. 11-17, Il. 24- 27 (supervisor unit			
		within the storage router processes NLLBP			
		requests from the devices to access			
		permitted storage). Abstract; Col. 2, Il. 12-			
		15, 17-20, 24-27; Col. 3, ll. 59-63; Col. 3, ll. 51-			
	·	53; Col. 4, Il. 2-6; Col. 5, Il. 1-5; Col. 9, Il. 28-			
		31; Col. 10, Il. 9-11 (specification discloses			
		that NLLBPs are used by, and at, the storage router to allow access).			
		Col. 6, Il. 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			

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 data, the access is much slower than access to data on a local storage device "). Claim 3, Col. 9, Il. 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							

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
. 9 9		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, Il. 32-37; '147			
		Patent, Claim 1, Col. 9,			
		11. 28-32 (disclosing and			
		claiming embodiments			· ·
		using Fibre Channel; the			
	1	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).			:
	•	express embodiments).			
	1	C-1 5 11 52 56 (Fibre			-
		Col. 5, Il. 53-56 (Fibre			·
		Channel is a protocol	,		
		used for			# H
		communications over			
		"Fibre Channel based		·	
		networks").			
					·
		Extrinsic:			
		March 7, 2011 Supp.		4	
		Decl. of John Levy,			
		Ph.D., ¶¶ 9-13 (data			
		transfer in networks best			
		understood as having			
	1	layers; when TCP/IP			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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			
	1	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).			
		A 1 29 2011 24 C			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
	·	Ph.D., ¶4 (person of			
		ordinary skill would understand that the			
		specification discloses a			
		specification discloses a server that sends			
				.*	
		requests for storage			
		access to a storage router using NLLBP).			

	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
	·	May 11, 2011 3d Supp.			
		Decl. of John Levy,	The second secon		
		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	title of the second		
		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		and the second	
		construed "storage			
		router" as "a data			
		transmitting device that			
		allows users to integrate			
		different servers or		•	

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-		9	
		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"		a de la companya de	
		that is both "reading or			
	4	writing data from a			
		storage device" and			
		sending NLLBPs and			
		the only "device" that		e e	
		does so in Graphic 2,		-	
		shown in Crossroads'			
		Post-Hearing Brief is			
		the "network server").		·	
		Crossroads' Concise	The state of the s		
		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		<u>"</u>	

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Supp. Decl. of John			
	·	Levy, Ph.D., ¶5			
	·	(accused devices in <i>Dot</i>			
		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			
		commands into NLLBP			
		requests); Id. at 89:11-			
		16 (parties agree that			
		"allowing access	·		
		using NLLBP" occurs		,	
		without a translation	* · · · · · · · · · · · · · · · · · · ·	. .	
	1	from a high level file			

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.	W		
		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			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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).		. ·	
		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).			
		me data).			
		Dictionary of Computer			
	1	and Internet Terms 311		·	

Actual Claims	Crossroads' Proposed	cial Master's Proposed Co Crossroads'		Defendants'	Smooial Master's
Actual Claims Language	Crossroads Proposed Construction	Evidence	Defendants' Proposed Construction	Evidence	Special Master's Construction
Tungung.	Constitution	(6 th Ed. 1996), Fore	Constitution	EVICENCE	Construction
		Decl. ISO Pl.'s Cl.		·	
		Const. Br., Ex. S			
		(defining "native" as "1.			·
	•	designed for a specific			
1		hardware or software			
		environment (rather than			
		for compatibility with			
		something else)").			
		sometiming cisc)).			
		Stip. Defs. of Cl. Terms,		and the second second	
		Fore Decl. ISO Pl.'s			
		Post-Hr'g Cl. Const. Br.,	24		
		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").			
		initiator device j.			
		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).			
		oc a network protocor).			
and to allow access	Native low level block	Native low level block	Native low level block	See claim 1, supra.	"A set of rules or
from the workstations	protocol ("NLLBP"):	protocol:	protocol:	See Claim 1, Supra.	1
to the storage devices	protocor(MLLBF):	protocor.	protocor.		standards that enable
using native low level,	Native:	Intrinsic:	Does not need to be		computers to
asing native low level,	TIGHTY C.	ameninsie.	Does not need to be		exchange information

	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
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		and do not involve the overhead of high level protocols and file systems typically required by network servers."
	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:	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 sent by a network server).	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		
	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	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	protocols, network protocols or file system protocols. Block protocol: A set of rules or standards for exchanging information with a block-oriented storage device		
	system protocols."	of the "network protocol" into low level requests (i.e., NLLBP) and sending the NLLBP to the physical storage devices).	Swiage device		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
			1		
		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, Il. 2-6; Col.			
		5, Il. 1-5; Col. 9, Il. 28-			
		31; Col. 10, Il. 9-11			
		(specification discloses			
		that NLLBPs are used			
	·	by, and at, the storage			
		router to allow access).			·
					·
		Col. 6, Il. 33-41, 46-56			
		(specification describes			
		two embodiments			
		wherein "devices"			
		making the storage			
		access request are			
		servers).			
		April 6, 2005 Reply to			

Actual Claims	Crossroads' 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;			
	·	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,	e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de		
	-	Spring and Oeda as			
		having a server that			
		provided controlled			
		access to storage was			
		required to translate			
		high level file system			
		commands into low	e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de		
		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		# 15	
		of any use of a "network			
		server"; Crossroads			

4 1 6 1			onstruction of Disputed Te		
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			
	1	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).	1.		
		Col. 2, Il. 17-20; Col. 5,			
		11. 19-22, 50-57, 60-63;			
		Col. 6, Il. 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).			
		express emodernicitis).			
		Col. 5, Il. 53-56 (Fibre			
		Channel is a protocol			
		used for			
		communications over	. ' ''		

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		"Fibre Channel based			
		networks").			
				·	
		Col. 1, Il. 42-53; Col. 3,			
		II. 16-24; Col. 5, II. 1-5			
	·	(specification notes that			
		NLLBPs do not involve			
		overhead of high level			
		network protocols or file		·	
		systems).			
		Systemsy.			
		Col. 6, Il. 31-41, 46-56			
	-	(specification has two			
		distinct embodiments in			
		which the "devices"		·	
		making storage requests			
		are servers).			
		are serversy.			
		Extrinsic:			
		DAN INSIC.			
		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)			
		specification)			
		March 7, 2011 Supp.			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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).			The second secon
		March 7, 2011 Decl. of			
		Brian Berg, ¶37 (states			
		that "low level" means			
		"without involving	4 - 2		
		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).			
		H. T. T. 10 00 00		The state of the s	
		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		*	

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,			٠
		201:22-24, 202:24-			
		203:3 (Defendants			4 - Z
		expressly stated that a			
		"device" is a "computer"			
		that is both "reading or			,
		writing data from a	a a ga	·	
		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	and the second of the second of		
		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
· · · · · · · · · · · · · · · · · · ·					
		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	the second second		
		without a translation	1		
		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			

Actual Claims		Crossroads'	onstruction of Disputed Ter Defendants' Proposed	Defendants'	Special Master's
Actual Claims Language	Crossroads' Proposed Construction	Evidence	Construction	Evidence	Construction
		protocols" is			
		superfluous to "without			
		involving a translation			
		from a high level file			
	1 m	system command to a			
		native low level block			
		protocol request.")			
		protocorrequest.			
		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).	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶6 (under	1		
		Defendants'			
	1	construction, a protocol			
		used for communication			
	l'	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			

	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
		of higher level protocols to access storage); <i>Id.</i> ¶ 34 (specification describes network servers communicating with storage using NLLBPs).			
Claim 8: The storage network of	Workstations:	Workstations:	Workstation:	See claim 1, supra.	"A computer having
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.	"A remote computing device that connects to the first (Fibre Channel) transport medium, and may consist of a personal computer."	Intrinsic: Col. 4, 1l. 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.	See Glant 1, Supra.	input/output devices intended for use by humans."
		Chaparral 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> </u>	Spe	cial Master's Proposed Co	al Master's Proposed Construction of Disputed Terms				
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction		
		Computer Dictionary 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.	"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, Il. 7-59, Col. 4, Il. 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, Il. 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."		

Extrinsic: Chaparral Markman Order at 3-7, 15, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L (Crossroads' 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.").	Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Chaparal 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 claim language, specification or prior			1			
Chaparal 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 claim language, specification or prior						
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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						
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Decl. ISO Crossroads' Cl. Comst. 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						
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						
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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						
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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						
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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						
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						
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						
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			workstation).			
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			Comments on Statement			
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						
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						
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						
Const. Br., Ex. I (patentees expressly disagreed with any characterization of the claims that were "inconsistent with the claim language, specification or prior						
(patentees expressly disagreed with any characterization of the claims that were "inconsistent with the claim language, specification or prior						·
disagreed with any characterization of the claims that were "inconsistent with the claim language, specification or prior						
characterization of the claims that were "inconsistent with the claim language, specification or prior			disagrand with any			
claims that were "inconsistent with the claim language, specification or prior						
"inconsistent with the claim language, specification or prior		1		7 - AM		
claim language, specification or prior						
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					
Claim 9:				44 - 45 - 45 - 55 - 55 - 55 - 55 - 55 -						
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	Device:	Device:	Device:	See claim 1, supra.	No Construction					
claim 7, wherein the storage router comprises: a buffer providing	"Computing device that issues storage access requests."	Intrinsic: Claim 1, Col. 9, ll. 27-	Computer.		Necessary.					
memory work space	, requests:	30 ("devices" refers to								
for the storage router;		the devices that make								
a first controller		requests and are allowed								
operable to connect to		access to storage		-						
and interface with the		devices).			·					
first transport medium,		1.57								
the first controller		Col. 1, Il. 36-37; Col. 2,								
further operable to pull		11. 4-5; Col. 4, 11. 55-56;								
outgoing data from the buffer and to place		Col. 8, 11. 65-68 (the specification describes			*					
incoming data into the		the devices that make			•					
buffer;		requests to access the	100		·					
a second controller		storage devices as								
operable to connect to		"computing devices").								
and interface with the										
second transport		Col. 1, Il. 57-60 ("from								
medium, the second		the perspective of a			·					
controller further		workstation, or other								
operable to pull		computing device,								
outgoing data from the		seeking to access such								
buffer and to place		server data, the access is								
incoming data into the		much slower than access								
buffer;		to data on a local								
and a supervisor unit		storage device ").								
coupled to the first	-	Little and the state of the sta								

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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,			
to map between devices		must necessarily be			
connected to the first		broader than			
transport medium and		"workstations").			
the storage devices, to				e e e e e e e e e e e e e e e e e e e	
implement the access		Col. 6, Il. 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, Il. 21-			
allow access from		24, 11. 36-37, 11. 53-56;			
workstations to storage		Col. 2, Il. 4-6; Col. 3, Il.			
devices.		3-6, 41-43; Col. 4, ll.			
		38-42, Il. 55-56 Col. 6,			
		11. 45-55; Col. 8, 11. 65-			
		68 ("devices" is used		and the second s	
		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			
i		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
Lunguage	Constitution	21-23, 27-29, 32, 33,	Constitution	Bytachec	Construction
		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).			
		requests for storage).			
		Extrinsic:			,
		Extrinsic.	·		
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶ 4 (one of			
		ordinary skill would understand that in the			
4-		embodiments at Col. 6,			
		ll. 33-41; 46-56, it is the			·
		server that sends			
	- Land				
		requests for storage			
		access to the storage router using NLLBP).			
		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	4		
		contrivance or			
	1	appliance. Commonly	1		1

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		used in reference to			
		peripherals such as			
		printers, CRTS and disk			
		drives").		•	•
4.4					
		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	litaria de la composición del composición de la composición de la composición del composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la composición de la co	·	
		printers and disk drives,			
		and provides resources			

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	la contra de la contra del la contra del la contra del la contra de la contra del la contra de la contra de la contra del la contra de		·			
		Litigation, Pl.'s Cl.						
		Const. Hr'g Ex. P-15	the state of the state of the state of					
		(Court previously						
		construed "storage						
		router" as "a data						
		transmitting device that						
		allows users to integrate						
		different servers or						
		workstations into a						
		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's			
controller, the second	space on the storage	space on the storage	Controls that use a map		access to a specific			
controller and the	devices:	devices:	to permit a particular		subset of storage			
buffer, the supervisor	, in the second		device to read data from		devices or sections of a			
unit operable:	"Provides controls	Intrinsic:	or write data to a		single storage device			
to map between devices	which limit a device's		particular storage space		according to a map."			
connected to the first	access to a specific	Fig. 3, Col. 3, Il. 7-59,	assigned to the device,					
transport medium and	subset of storage	Col. 4, 11. 7-27, 33-35,	and to prevent the					
the storage devices, to	devices or sections of a	40-43, 48-50, 50-53	device from reading					
implement the access	single storage device	(Fig. 3 shows	data to or writing data					
controls for storage	according to a map."	embodiment in which	from storage space					
space on the storage		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, Il. 7-11 ("access						
second controller to	· ·	controls" applies to						
allow access from		shared storage).						
workstations to storage								

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	1.4		
		to shared storage).		·	
				4.	
		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	No.		
		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).			
		" oznamion,			
	·	Comments on Statement			
		of Reasons for			
		Patentability and/or			

	· · · · · · · · · · · · · · · · · · ·	7	onstruction of Disputed Te		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Confirmation, Fore			
		Decl. ISO Pl.'s Cl.			1
		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, Il. 39-41			
unit operable:	transport medium, and	(specification defines	· ·		
to map between devices	may consist of a	workstation as a			
connected to the first	personal computer."	"computing device").	5.86		
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 Dot Hill			
		litigation adopted			
		Crossroads' proposed			

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); 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).					
Claim 11:					Application of the state of the		
A method for providing virtual local storage on	Device:	Device:	Device:	See claim 1, supra.	No Construction Necessary.		
remote storage devices	"Computing device that	Intrinsic:	Computer.		inecessary.		
connected to one	issues storage access		Compater.				
transport medium to	requests."	Claim 1, Col. 9, Il. 27-					
devices connected to	10400101	30 ("devices" refers to	·				
another transport		the devices that make					
medium, comprising:		requests and are allowed	1				
, ,		access to storage		. ,			
		devices).					
		Col. 1, Il. 36-37; Col. 2,					
		11. 4-5; Col. 4, 11. 55-56;					
·		Col. 8, Il. 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					

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, 11. 37-			
		39 (principles of claim			
		differentiation require			
	·	"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, Il. 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, Il. 4-6; Col. 3, Il.			
		3-6, 41-43; Col. 4, II.	and the second second		
		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,		<u>.</u> :	
		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			

***************************************			onstruction of Disputed Te		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's 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			
		reexamination			
		prosecution history to			
	·	refer to types of devices			
		capable of making		•	
		requests for storage).			
		i oquesis iei sieinge).			
	· ·	Extrinsic:			
	·				
		April 28, 2011 2d Supp.			2.5
		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			
	ļ.	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	1:1		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Constituction	electromechanical	Constituction	Evidence	Construction
		contrivance or			
		appliance. Commonly		·	
		used in reference to			
		peripherals such as			
		printers, CRTS and disk			
		drives").	* . *		
		drives j.			
		Hr'g Tr. at 202:24-			
	·	203:3, 205:4-7, Mar. 8,			
		203.5, 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).			
	·	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			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				
		resources, such as							
		printers and disk drives,							
		and provides resources	and the second						
		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").							
interfacing 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's				
interfacing 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				
mapping 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, Il. 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	from storage space						
storage space on the	1	all workstations can	assigned to other						
storage devices; and		access global storage	devices						
-		device).							
	·								
	1	Col. 4, Il. 7-11 ("access							

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).			
		to shared storage).			·
		Extrinsic:	· .		
		Extrinsic.			
		Chaparral Markman			
		Order at 3-7, 15, Fore			
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. L			·
		(Crossroads'			
		construction parallels			
		historic construction;			
		the invention		•	
		1		·	
		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).			

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			
				1				

	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
		Ol-i 1 O-1 0 11 12			
		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"	the second second second		
		(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	44		
		appears to a workstation			
		as local storage, and			
		appears to have the			
		same characteristics of local storage).			
	·	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).	18 1 48 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
		Col. 5, Il. 11-17, Il. 24-			

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, Il. 12-		* *	
		15, 17-20, 24-27; Col. 3,			
		11. 59-63; Col. 3, 11. 51-			
		53; Col. 4, Il. 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			
	4.4	router to allow access).			
	1.	And I have no more			
		Col. 6, ll. 33-41, 46-56			
		(specification describes			
	1	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		1	
		server data, the access is	N. 19		
		much slower than access			
		to data on a local			
		storage device ").			
	1	Claim 3, Col. 9, 11. 37-	- 1	· ·	

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		39 (principles of claim			
	,	differentiation require	The second state of the second second		
		"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			
		having a server that			
		provided controlled		·	
		access to storage was			
		required to translate			
		high level file system			

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.			4.5
		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			
	i de la companya de l	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).			
		101/11/			
			90		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Col. 2, 11. 17-20; Col. 5,			
		11. 19-22, 50-57, 60-63;	·		
		Col. 6, Il. 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	2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1		
		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			A4
		networks").			
		Extrinsic:		·	
		is a market service of the			
		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			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
	·	server" is a server that			
		can request access to			
		storage).			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		NC 00			
		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").			
		network).			
		Special Master's Report			
		at 22, Dot Hill			
		Litigation, Pl.'s Cl.		·	
		Const. Hr'g Ex. P-15	·		
		(Court previously			
		construed "storage	100		
	· ·	router" as "a data			
		transmitting device that	and the second second		
		allows users to integrate			
		different servers or	:		
	1	workstations into a			
		storage network").			
		TI-1- T- 76.4.10.00.00			
		Hr'g Tr. 76:4-10, 82:20-			
		23, March 8, 2011 (in			
		hypothetical network of			

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.	principal control of the control of		
		J) the workstation sends	1.00		
		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	e e		

			onstruction of Disputed Ter		
Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's Construction
Language	Construction	Evidence	Construction	Evidence	Construction
		shown in Graphic 2 of			
		Defendants' Markman			
		Demonstratives (Fore			
		Decl. ISO Pl's Post-			
		Hr'g Cl. Const. Br., Ex.	A		·
		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"	1		
		distinguished by			
		patentees during			,
		reexamination was from			
	,	high level file system			
		commands into NLLBP	1		
		requests); Id. at 89:11-	. [
		16 (parties agree that			
		"allowing access			
		using NLLBP" occurs			
		without a translation]		
		from a high level file	1		
		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	t 1		

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			
		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). 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").						

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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).			
		A CAR CAR	·		
		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)").			
		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		e e e e e e e e e e e e e e e e e e e	
		an initiator device to be			
		within or locally			
		connected to the			
		initiator device").			
	·	April 28, 2011 2d Supp.			
		Decl. of John Levy,	\$ 1 m		
		Ph.D., ¶6 (under			
		Defendants'			
		construction, a protocol	·		
		used for communication		·	
		over "Fibre Channel			
		based networks" would			
		be a network protocol).			
allowing 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 enabl
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, Il. 13-14, 26;	construed with		protocols and file
		Col. 3, 11. 17, 22-23, 53,	reference to individual		systems typically
	Block Protocol:	63; Col. 4, 11. 4-5, 25;	terms as follows:		required by network
	"A set of rules or	Col. 5, l. 3; Claim 1,			servers."

	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	Col. 9, 11. 29-30; Col.	Native:		
	exchanging information	10, l. 10; Col. 10, ll. 48-	Designed for use with a		
	with a block-oriented	49 (specification	specific type of storage		
	storage device."	consistently uses	device.		
		"NLLBP" as a single			
	Low Level	term).	Low-level protocol:		
	Protocol:	an week a life of the control of the	A set of rules or		
	"A set of rules or	Fig. 1; Col. 3, Il. 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-		
		sent by a network	level 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		
	Block Protocol:	Col. 3, ll. 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		
	with a block-oriented	storage devices by	exchanging information		
	storage device without	translating high level	with a block-oriented		
	involving high level file	file system commands	storage device		
	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, Il. 13-			
		30 (storage router			
		"allow[s] access from			
		devices connected to the			
		first transport medium			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
	·	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,			
		II. 59-63; Col. 3, II. 51-			
	·	53; Col. 4, 11. 2-6; Col.			
	·	5, 1l. 1-5; Col. 9, 1l. 28-			
		31; Col. 10, 11. 9-11			
	·	(specification discloses			
		that NLLBPs are used			
		by, and at, the storage			
		router to allow access).			e e
		Col. 6, Il. 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			
	e e	Office Action at 24-27,	and the second second		

Actual Claims Language	r	Special Master's Proposed Construction of Disputed Terms							
	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master' 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		1					
		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.	· 1						
		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							

			onstruction of Disputed Te		
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).			
	1				·
		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,			
		II. 28-32 (disclosing and			
		claiming embodiments			
		using Fibre Channel; the			
		inclusion of "without			eger internal
		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").			
		Col. 1, II. 42-53; Col. 3,			
		II. 16-24; Col. 5, II. 1-5			
		(specification notes that			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		NLLBPs do not involve			
		overhead of high level			
		network protocols or file			
		systems).			
		Col. 6, Il. 31-41, 46-56			
		(specification has two			
	1	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"		1	
		should be construed as a			
		single term, consistent			
		with use in			
		specification)			
		The track of the same			
		March 7, 2011 Supp.			
		Decl. of John Levy,			
		Ph.D., ¶13 (Ethernet and		·	
		TCP/IP protocols are			
		concerned only with			
		delivery of messages).			
				1	

Actual Claims	Crossroads' Proposed	Crossroads'	onstruction of Disputed Tell Defendants' Proposed	Defendants'	Special Master's
Language Language	Construction	Evidence	Construction	Evidence	Construction
		March 7, 2011 Decl. of			
		Brian Berg ¶48 (a SCSI			
		command would be a			
		low level command).			i de la companya de la companya de la companya de la companya de la companya de la companya de la companya de
		March 7, 2011 Decl. of			
		Brian Berg, ¶37 (states			
		that "low level" means			
	4	"without involving			
		file system protocols.").			
		April 20 2011 24 C			
		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	The state of the s		
		server); <i>Id.</i> at 200:2-5, 201:22-24, 202:24-			
		201:22-24, 202:24- 203:3 (Defendants			
		expressly stated that a			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		"device" is a "computer"			
		that is both "reading or			
		writing data from a	·	. Laplace	
		storage device" and	4 - 4 <u>1</u>		
		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			
		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			

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		,	
		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		e.	
		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			
	1	native low level block			

	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
		protocol request.")			
		April 28, 2011 2d Supp.			·
		Decl. of John Levy,			·
		Ph.D., ¶7 (CIFS, NFS and FTP are network			
		protocols).			
		protocois).			
		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			
	<u> </u>	with storage using	<u></u>	·	

	Spe	cial Master's Proposed C	onstruction of Disputed T	erms		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction	
		NLLBPs).				1
Claim 12:				13 _{10.1} , 1800	Return Angeles (Section)	O as e
The method of claim 11, wherein mapping	Device:	Device:	Device:	See claim 1, supra.	No Construction Necessary.	
between devices connected to the first	"Computing device that issues storage access	Intrinsic:	Computer.			
transport medium and the storage devices	requests."	Claim 1, Col. 9, Il. 27-30 ("devices" refers to				5
includes allocating subsets of storage space		the devices that make requests and are allowed				1.10-68-00052-33
to associated devices connected to the first		access to storage devices).				1
transport medium, wherein each subset is		Col. 1, Il. 36-37; Col. 2,				Document 107-0
only accessible by the associated device		11. 4-5; Col. 4, 11. 55-56; Col. 8, 11. 65-68 (the				d
connected to the first transport medium.		specification describes the devices that make	. `			
		requests to access the storage devices as				
		"computing devices").				d
		Col. 1, ll. 57-60 ("from the perspective of a				riled U8/10/11
		workstation, or other computing device,				-
		seeking to access such server data, the access is				rage
		much slower than access to data on a local				ge i
		storage device ").				10 01 22
		Claim 3, Col. 9, ll. 37-39 (principles of claim				Ň
		differentiation require "devices," as a group,	i in the second			

	Spe	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				
		must necessarily be							
		broader than							
		"workstations").							
		Col. 6, Il. 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, II.			•				
		38-42, Il. 55-56 Col. 6,							
		11. 45-55; Col. 8, 11. 65-							
		68 ("devices" is used							
		broadly to refer to	- state -						
		various computing							
		devices such as							
		workstations,							
		input/output devices,							
		"initiator" and "target"							
		devices).							
		Amril 6, 2005 Parales 4-	· ·						
	· *	April 6, 2005 Reply to	en en en en en en en en en en en en en e						
		Office Action at 8, 10,	ĺ						
		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	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		F ("Device" is used over		<u>. </u>	
		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	the second second		
		mechanical, electrical or			
		electromechanical			
		contrivance or			
		appliance. Commonly			
		used in reference to			
		peripherals such as			
		printers, CRTS and disk			
		drives").			

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).			
		N. 66			
		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").			

		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	
			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:			1.00	010001	and the state of	5
115	The method of claim 12, wherein the devices	Device:	Device:	Device:	See claim 1, supra.	No Construction Necessary.	וכויי
115 of 373	connected to the first transport medium comprise workstations.	"Computing device that issues storage access requests."	Intrinsic: Claim 1, Col. 9, Il. 27-	Computer.			
	comprise workstations.	requests.	30 ("devices" refers to the devices that make requests and are allowed access to storage devices). Col. 1, ll. 36-37; Col. 2,				
			Il. 4-5; Col. 4, Il. 55-56; Col. 8, Il. 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, II. 37-39 (principles of claim differentiation require "devices," as a group, must necessarily be broader than "workstations"). Col. 6, II. 31-41, 46-56 (the specification describes "servers" as a type of computing device that can make storage access requests). Abstract, Col. 1, II. 21-24, II. 36-37, II. 53-56; Col. 2, II. 46-; Col. 3, II. 36-, 41-43; Col. 4, II. 38-42, II. 55-56 Col. 6, III. 45-55; Col. 8, II. 65-66 ("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
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II. 45-55; Col. 8, II. 65- 68 ("devices" is used broadly to refer to various computing devices such as workstations, input/output devices,				1		
68 ("devices" is used broadly to refer to various computing devices such as workstations, input/output devices,						
broadly to refer to various computing devices such as workstations, input/output devices,						
various computing devices such as workstations, input/output devices,						
devices such as workstations, input/output devices,						
workstations, input/output devices,				. ••		
input/output devices,			1			
$1 cc^{\bullet} \cdot cc^{\bullet} \cdot cc^{\bullet} \cdot cc^{\bullet} \cdot cc^{\bullet} \cdot cc^{\bullet}$						
"initiator" and "target" devices).						

			onstruction of Disputed Ter		r
Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		A:1 C 2005 D1 4			
		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,			
	Zak .	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			

			onstruction of Disputed Ter		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's 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).			
			·		
		Microsoft Computer			
		Dictionary 430 (3d Ed.			
		1997), May 11, 2011 3d	1.75		
		Supp. Decl. of John			
		Levy, Ph.D., Ex. A			
		(defining "server" as			
	1	"(1) on a local area			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		network (LAN), a			
		computer running	e e e e	·	
		administrative software			
		that controls access to			
		the network and its			
		resources, such as			-
		printers and disk drives,			
		and provides resources			5-2-4-4-111
		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	1		
		(Court previously			
		construed "storage			
		router" as "a data			
	The state of the s	transmitting device that			
		allows users to integrate	· .		
		different servers or			
		workstations into a		·	
		storage network").			·
			·		
The method of claim 12,	Workstations:	Workstations:	Workstation:	See claim 3, supra.	"A computer having
wherein the devices		land we will be the			input/output devices
connected to the first	"A remote computing	Intrinsic:	A computer including		intended for use by
ransport medium	device that connects to		human input/output		humans."
comprise workstations.	the first (Fibre Channel)	Col. 4, 11. 39-41	devices such as a		II WILLIAMID.
	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.	1	
		Extrinsic:			
				1	

	Spe	cial Master's Proposed Co	onstruction of Disputed Terr	ns	
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's 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 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).			
Claim 14: The method of claim 12, wherein the storage devices comprise hard	[No claim term at issue]		[No claim term at issue]		

TABLE OF CITATION ABBREVIATIONS

Abbreviation	Document(s)	Date	Exhibit No. or Range
	Joint Ma	terials	
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	gs 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
Pl. Br. Ex. Levy Decl. Levy Ex.	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 posthearing 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' 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 Ex Parte 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 Ex Parte Reexamination Dated 5/24/2005	7/22/2005	Def. Ex. 7
'147 Reply	147 Reply '147 file history, Reply to Office Action Dated 1/27/2005		Def. Ex. 9
Horst Decl.	Declaration of Robert W. Horst and exhibits in Crossroads v. Postvision (W.D. Tex. case 1:10-cv-00652-SS)	5/20/2010	Def. Ex. 16

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."

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		United States Pat	tent No. 7,051,147		
Claim 1:			. The same and the	The state of the s	Tara
A storage router for	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
providing virtual local			Company data		Necessary.
storage on remote	"Computing device that	Intrinsic:	Computer.		
storage devices to a	issues storage access	01: 110:10:10:7			
device, comprising:	requests."	Claim 1, Col. 9, 11. 27-			
a 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		0.1.1.1.26.27.0.1.0			
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, ll. 65-68 (the			
		specification describes			
		the devices that make			
		requests to access the			
		storage devices as			
	·	"computing devices").			
		61111576000			
		Col. 1, 1l. 57-60 ("from			
		the perspective of a			
		workstation, or other			
		computing device,	5		
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			
		device ").			
		01.1.2 0.1 0.11 07.00			
-		Claim 3, Col. 9, Il. 37-39	1		<u> </u>

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	Crossroads' Proposed	Crossroads'	Construction of Disputed ' 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").			
		Worksattons).			
		Col. 6, Il. 31-41, 46-56			
		(the specification		* * *	
		describes "servers" as a			
		type of computing	:	·	
	A CONTRACTOR OF THE CONTRACTOR	device that can make			
		storage access requests).			
		storage access requests).			
	·	Abstract, Col. 1, Il. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, Il. 4-6; Col. 3, Il.			
		3-6, 41-43; Col. 4, Il. 38-			
		42, ll. 55-56 Col. 6, ll.			
		45-55; Col. 8, 11. 65-68	·		
	T- THE COLUMN TO THE COLUMN TH	("devices" is used			
		broadly to refer to			
		various computing	4	,	
		devices such as			
		workstations,	i.	,	
		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,	*	*	

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).			•
		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 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).			
		Minney & Community		•	
		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			
	1	printers and disk drives,			
		and provides resources		·	
	·	to computers functioning	**		
		as workstations on the			
		network").			

0	
(,)	

	\$	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
		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").			
a second Fibre Channel controller operable to connect to and interface with a second Fibre Channel transport medium; and a supervisor unit coupled to the first and second Fibre Channel controllers and the buffer, the supervisor unit operable: to maintain a configuration for remote storage devices connected to the second Fibre Channel transport medium that maps between the device and the remote storage devices and	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" 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[]	Configuration: "Map"; otherwise indefinite.	'147 patent claims 1, 9, 10, 34, 35 ("a configuration [] that maps") '147 patent claims 15, 22, 29 ("a configuration wherein the configuration includes [the][a] map") 2:20-23³ ("The configuration maps") 4:13-16 5:50-53	No Construction Necessary.

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

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
that implements access		access controls").			
controls for storage		a, 15 a			
space on the remote		Claim 15, Col. 11, ll. 23-			
storage devices;		28 (the limitation "operable to maintain a			
		configuration wherein		·	
		the configuration			
		includes a map"			
		would be meaningless			
		under Defendants'			
		proposed construction).			
•		F-F			
		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");	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
	-	February 22, 2011 Decl.			
		of John Levy, Ph.D., ¶46 (person of ordinary skill	And the second second		
		would understand			
		"maintaining a			
		configuration" to mean			
		"keeping a modifiable			
•		set of information").			
d a supervisor unit coupled to the first and	Access control(s):	Access control(s):		See '035 patent, claim 1.	"Controls which limit device's access to a
second Fibre Channel	"Controls which limit a	Intrinsic:			specific subset of stor
	device's access to a				devices or sections of
ouffer, the supervisor	specific subset of storage	Fig. 3, Col. 3, 11. 7-59,			single storage device
unit operable:	devices or sections of a	Col. 4, 11. 7-27, 33-35,			according to a map."
controllers and the buffer, the supervisor	device's access to a specific subset of storage	Fig. 3, Col. 3, 11. 7-59,	5		devices or sect single 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		
to maintain a	single storage device	40-43, 48-50, 50-53					
configuration for	according to a map."	(Fig. 3 shows		į.			
remote storage devices	-	embodiment in which all					
connected to the		workstations can access	· .				
second Fibre Channel		global storage device).					
transport medium that							
maps between the		Col. 4, Il. 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					
		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					

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			
		rejected a construction in						
		which a particular subset			a de la companya de l			
· .		of storage could only be						
·		accessed by a single						
		workstation).						
		Comments on Statement						
		of Reasons for						
		Patentability and/or						
1		Confirmation, Fore Decl.		·				
1		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.").						
-	·							
nd to process data in	Allow access to the	Allow access to the	Allow accessto the	See '035 patent, claim 1.	"Permit or deny acce			
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, Il. 49-54;	native low level, block		file system protocols			
devices to the remote	Virtual Local Storage	Col. 3, Il. 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					

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Construction of Disputed 7 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 another.		
		NLLBP to the physical storage devices).	another.		
		Storage devices).	1.		
		Claim 1, Col. 9, ll. 13-30			
		(storage router "allow[s]			
		access from devices			
		connected to the first			
		transport medium to the	·	1	
	·	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			
		"provided" by the			
		storage router in a manner that is			
		transparent to the			
	I	amsparent 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 router to allow access). Col. 6, II. 33-41, 46-56 (specification describes two embodiments wherein "devices" making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other	Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
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. 2-6; Col. 5, II. 1-6; 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 router to allow access). Col. 6, II. 33-41, 46-56 (specification describes two embodiments wherein "devices" making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other						
27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage). Abstract; Col. 2, Il. 12-15, 17-20, 24-27; Col. 3, Il. 59-63; Col. 3, Il. 59-63; Col. 3, Il. 51-53; Col. 4, Il. 2-6; Col. 5, Il. 1-5; Col. 9, Il. 28-31; Col. 10, Il. 9-11 (specification discloses that NLLBPs are used by, and at, the storage router to allow access). Col. 6, Il. 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			storage access).			
27 (supervisor unit within the storage router processes NLLBP requests from the devices to access permitted storage). Abstract; Col. 2, Il. 12-15, 17-20, 24-27; Col. 3, Il. 59-63; Col. 3, Il. 59-63; Col. 3, Il. 51-53; Col. 4, Il. 2-6; Col. 5, Il. 1-5; Col. 9, Il. 28-31; Col. 10, Il. 9-11 (specification discloses that NLLBPs are used by, and at, the storage router to allow access). Col. 6, Il. 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			C-1 5 11 11 17 11 24			A Company of the Comp
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 router to allow access). Col. 6, II. 33-41, 46-56 (specification describes two embodiments wherein "devices" making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other						
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 router to allow access). Col. 6, II. 33-41, 46-56 (specification describes two embodiments wherein "devices" making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other						. ·
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 router to allow access). Col. 6, II. 33-41, 46-56 (specification describes two embodiments wherein "devices" making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other						
devices to access permitted storage). Abstract; Col. 2, II. 12-15, 17-20, 24-27; Col. 3, II. 59-60 ("from the perspective of a workstation, or other the perspective of a workstation, or other the perspective of a workstation, or other the storage and the perspective of a workstation, or other the storage access request are servers).						
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 router to allow access). Col. 6, II. 33-41, 46-56 (specification describes two embodiments wherein "devices" making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other						
15, 17-20, 24-27; Col. 3, II. 59-63; Col. 3, II. 51-53; Col. 4, II. 2-6; Col. 5, III. 1-5; Col. 9, II. 28-31; Col. 10, II. 9-11 (specification discloses that NLLBPs are used by, and at, the storage router to allow access). Col. 6, II. 33-41, 46-56 (specification describes two embodiments wherein "devices" making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other	•		permitted storage).			
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 router to allow access). Col. 6, II. 33-41, 46-56 (specification describes two embodiments wherein "devices" making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other						
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 router to allow access). Col. 6, II. 33-41, 46-56 (specification describes two embodiments wherein "devices" making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other						
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II. 1-5; Col. 9, II. 28-31; Col. 10, II. 9-11 (specification discloses that NLLBPs are used by, and at, the storage router to allow access). Col. 6, II. 33-41, 46-56 (specification describes two embodiments wherein "devices" making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other						
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that NLLBPs are used by, and at, the storage router to allow access). Col. 6, II. 33-41, 46-56 (specification describes two embodiments wherein "devices" making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other						
router to allow access). Col. 6, Il. 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						
Col. 6, Il. 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			by, and at, the storage			
(specification describes two embodiments wherein "devices" making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other			router to allow access).			
(specification describes two embodiments wherein "devices" making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other		4				
two embodiments wherein "devices" making the storage access request are servers). Col. 1, Il. 57-60 ("from the perspective of a workstation, or other						
wherein "devices" making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other						
making the storage access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other						
access request are servers). Col. 1, II. 57-60 ("from the perspective of a workstation, or other						
col. 1, ll. 57-60 ("from the perspective of a workstation, or other						
the perspective of a workstation, or other						
the perspective of a workstation, or other						
workstation, or other				· · · · · · · · · · · · · · · · · · ·		
I commuting devices			1 ' 1			
computing device, seeking to access such						
server data, the access is						
much slower than access						

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's 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	100		
		Office Action at 8-11,			
	·	19, 22-23, Fore Decl.			
		ISO Crossroads' Post-			
		Hr'g Cl. Const. Br., Ex.			
		E; July 22, 2005 Reply			
1.		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,	2	1	
		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			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
2 2		networks, Ethernet or			
		TCP/IP).			
		Gal 2 H 17 20, Gal 5			·
		Col. 2, Il. 17-20; Col. 5, Il. 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	and the state of t		
		involving network			
		protocols" according to	·		
		Defendants' expert	•		·
		would prohibit the use of		3-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	
		Fibre Channel despite the fact that these are		·	
		express embodiments).			
		express embournents).	<u>.</u>		
		Col. 5, 11. 53-56 (Fibre			
		Channel is a protocol	eta Garago de la composição d		
		used for communications			
		over "Fibre Channel			7
		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		Special Master's 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			
*		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).			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to			
		storage).			

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").			
		storage network).			
		Hr'g Tr. 76:4-10, 82:20-			
		23, March 8, 2011 (in			
		hypothetical network of		 	
		Graphic 2 of Defendants'		·	
	·	Crapino 2 or Defendants			

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); <i>Id.</i> at 200:2-5,			
		201:22-24, 202:24-203:3	and the state of t		The second second
		(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'	r e		
		Post-Hearing Brief is the	er en en en en en en en en en en en en en		
		"network server").	·		
		Crossroads' Concise	·		
		Statement of			
		Infringement, Dot Hill	·		
		Litigation (Case No. A-	e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de		
		03-CV-754 SS), Fore			
		Decl. ISO Pl.'s Post-Hr'g			
		Cl. Const. Br., Ex. H;			
		April 28, 2011 2d Supp.	<u> </u>		
	· · ·	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			
,		10	6		
		· · · · · · · · · · · · · · · · · · ·			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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			

Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		involving Ethernet			
		networks, Ethernet			
		protocols, TCP/IP" from			
		their proposed			
		construction).March 7,	1		
		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).	the state of the s	·	
			į.		
		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.	İ	-	
	•	designed for a specific			
		hardware or software			
		environment (rather than			
		for compatibility with			
		something else)").			

- X-2-X-11		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
		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 be a network protocol).			
and to process data in the buffer to interface between the first Fibre Channel controller and the second Fibre Channel controller to allow access from Fibre Channel initiator devices to the remote storage devices using native low level, block	Initiator Device: "A device that issues requests for data or storage."	Initiator Device: Intrinsic: Col. 3, Il. 41-43; Col. 6, Il. 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.	Extrinsic Evidence Def. Ex. 20, Microsoft Computer Dictionary (5th ed. 2002) at 273. Pl. Hrg. Ex. P-17 ⁴ , FC Protocol for SCSI §§ 4-2 to 4-2. For proper construction	"A device that issues requests for data or storage."

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	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
	Block Protocol:	Col. 3, ll. 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			1
		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	į.		
		the storage router, "uses"			. *
		the NLLBP to permit or			
		enable access).			
		Abstract; Col. 2, Il. 12-			
		15, 17-20, 24-27; Col. 3,			
		II. 59-63; Col. 3, II. 51-			
		53; Col. 4, Il. 2-6; Col. 5,			
		11. 1-5; Col. 9, 11. 28-31;	·		
		Col. 10, Il. 9-11			·
		(specification discloses			
		that NLLBPs are used			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's 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).			
			1		
	· ·	April 6, 2005 Reply to			
		Office Action at 10-11,	+ 1 · 1 · 1		·
		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	Land Control of the A. A. A. A.		
		(Crossroads			
		distinguished Petal,			
		Spring and Oeda as			
	·	having a server that			
		provided controlled			l .
	·	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.			· ·

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's 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	The state of the s		
		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, Il. 17-20; Col. 5,			
		11. 19-22, 50-57, 60-63;			
		Col. 6, Il. 32-37; '147			
		Patent, Claim 1, Col. 9,			
		ll. 28-32 (disclosing and		ļ.	
		claiming embodiments			
		using Fibre Channel; the			
	·	inclusion of "without			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		of art).		·	
		The state of the s			
		Hr'g Tr. at 121:8-16,			
	-	March 8, 2011 (parties			
•		agree that "NLLBP"			
		should be construed as a			The state of the s
		single term, consistent			
		with use in specification)			
		Manala 7, 2011 Same			
		March 7, 2011 Supp.			
	·	Decl. of John Levy, Ph.D., ¶13 (Ethernet and			
		TCP/IP protocols are			İ
		concerned only with			
		delivery of messages).	·		
		denvery 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,			
	1	Ph.D., ¶4 (person of			
	İ	ordinary skill would			
		understand that the			
		specification discloses a server that sends			
		requests for storage			
		access to a storage router			
		using NLLBP).	· · · · · · · · · · · · · · · · · · ·		

			Construction of Disputed		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
				And testing states 1 1 1	
		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").			
		Crossroads' Concise			
		Statement of			
		Infringement, Dot Hill			
		Litigation (Case No. A-			
		03-CV-754 SS), Fore	1		
		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			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		litigation were designed			10 T
		to be used in			·
		hypothetical system			
		shown in Graphic 2 of			
		Defendants' Markman			
	No.	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			·

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
	TO ALL VI ME VIZUE	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).	· · · · · · · · · · · · · · · · · · ·		
		Chamer).			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶6 (under			
		Defendants'			
	•	construction, a protocol	•		
		used for communication			
	<u> </u>	over "Fibre Channel			
			n .		
		29	9		

L		·	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			
			of higher level protocols to access storage); <i>Id.</i> ¶ 34 (specification			
			describes network servers communicating with storage using			
154	Claim 2:		NLLBPs).			
잋	The storage router of	Configuration:	Configuration:	Configuration:	See claim 1, supra. 5	No Construction
ı.	claim 1, wherein the			. •	·	Necessary.
	configuration			1 //3 # 45 .4 .	i i	
	maintained by the	"A modifiable setting of information."	Intrinsic:	"Map"; otherwise		No Construction Necessary.
	maintained by the supervisor unit includes	information."		"Map"; otherwise indefinite.		
	maintained by the supervisor unit includes an allocation of subsets		Intrinsic: Col. 2, Il. 19-23; Col. 5, Il. 53-54; Col. 6, Il. 58-			
	supervisor unit includes an allocation of subsets of storage space to		Col. 2, Il. 19-23; Col. 5, Il. 53-54; Col. 6, Il. 58-64 (describing			
	supervisor unit includes an allocation of subsets of storage space to associated Fibre Channel		Col. 2, Il. 19-23; Col. 5, Il. 53-54; Col. 6, Il. 58-64 (describing "configuration" as			
	supervisor unit includes an allocation of subsets of storage space to associated Fibre Channel devices, wherein each		Col. 2, Il. 19-23; Col. 5, Il. 53-54; Col. 6, Il. 58-64 (describing "configuration" as information used to			
	supervisor unit includes an allocation of subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible by the associated Fibre		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			
	supervisor unit includes an allocation of subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible		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			
	supervisor unit includes an allocation of subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible by the associated Fibre		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).			
	supervisor unit includes an allocation of subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible by the associated Fibre		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			
	supervisor unit includes an allocation of subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible by the associated Fibre		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).			

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.

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Actual Claims	Crossroads' Proposed	Special Master's Proposed Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language .	Construction	Evidence	Construction	Evidence	Construction
		additional information,			
		such as information			
		needed to "implement[]			No. of the second second
		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:			1
		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 storage router of	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
claim 1, wherein the					Necessary.
configuration maintained	"Computing device that	Intrinsic:	Computer.		

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							
includes an allocation of	requests."	Claim 1, Col. 9, 11. 27-30						
subsets of storage space		("devices" refers to the						
to associated Fibre		devices that make						
Channel devices,		requests and are allowed		ļ				
wherein each subset is		access to storage						
only accessible by the		devices).						
ssociated Fibre Channel								
levice.		Col. 1, Il. 36-37; Col. 2,						
		11. 4-5; Col. 4, 11. 55-56;		A Company of the Comp				
		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						
Ş		device ").	•					
* .		The state of the s						
		Claim 3, Col. 9, Il. 37-39						
		(principles of claim						
•		differentiation require						
		"devices," as a group,						
		must necessarily be						
·		broader than		·				
		"workstations").						
				· ·				
. •		Col. 6, Il. 31-41, 46-56						
		(the specification		*				

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed ' Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
		Abstract, Col. 1, Il. 21-			
	, in the second	24, 11. 36-37, 11. 53-56;			
		Col. 2, 11. 4-6; Col. 3, 11.	٠.		
		3-6, 41-43; Col. 4, 11. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, Il. 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	: · · · · · · · · · · · · · · · · · · ·		ı

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		requests for storage).			
				• '	
		Extrinsic:			7
		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 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			

Special Master's Proposed Construction of Disputed Terms						
Actual Claims	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants'	Special Master's Construction	
Language	Construction		Construction	Evidence	Construction	
		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 (Court previously				
		construed "storage router" as "a data transmitting device that				

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Constitution	different servers or	Construction	Bylacite	Constitution
		workstations into a			
		storage network").			
	* .	And the state of t		4	
Claim 3:					
he storage router of	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
laim 2, wherein the					Necessary.
ibre Channel devices	"Computing device that	Intrinsic:	Computer.		
omprise workstations.	issues storage access				
	requests."	Claim 1, Col. 9, 11. 27-30			
		("devices" refers to the			
		devices that make			
		requests and are allowed			
		access to storage			
		devices).			
		611110607.610			
		Col. 1, Il. 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			1
		storage devices as			
		"computing devices").			
		computing devices).			
	:	Col. 1, II. 57-60 ("from			
		the perspective of a		1	
		workstation, or other	e e e e e e e e e e e e e e e e e e e		
		computing device,			
		seeking to access such			
		server data, the access is			
		much slower than access			
		to data on a local storage			,
		device ").		The state of the s	
		Claim 3, Col. 9, 11. 37-39			1

Special Master's Proposed Construction of Disputed Terms Actual Claims Crossroads' Proposed Crossroads' Defendants' Proposed Defendants' Special Master's Proposed Construction of Disputed Terms					
Language	Construction	Evidence	Construction	Evidence	Special Master's Construction
		(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, Il. 31-41, 46-56			•
		(the specification			
		describes "servers" as a			
		type of computing			
		device that can make	·		
		storage access requests).	the state of the s		
·		Abstract, Col. 1, Il. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, 1l. 4-6; Col. 3, 1l.			
		3-6, 41-43; Col. 4, ll. 38-			
		42, ll. 55-56 Col. 6, ll.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
		broadly to refer to	4.		
		various computing	·	·	
		devices such as	A Property of the Control of the Con		
		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,			

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:		i	
		Extrinsic.			
	·	April 28, 2011 2d Supp.			
		Decl. of John Levy,		·	
					N
,		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).		İ	
		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.	1	1	
		Commonly used in			
		reference to peripherals	l ·		

	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		
***************************************		such as printers, CRTS					
	į	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	·				
		network").			1		

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مسنس	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		
			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").					
T	he storage router of	Workstations:	Workstations:	Workstation:	See '035 patent, claim 3.	"A computer having input/output devices intended for use by humans."		
	laim 2, wherein the					input/output devices		
F	ibre Channel devices	"A remote computing	Intrinsic:	A computer including	·	intended for use by		
C	omprise workstations.	device that connects to		human input/output	-	humans."		
		the first (Fibre Channel)	Col. 4, 11. 39-41	devices such as a display		Trainer.		
		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.	·			
				1.00				
			Extrinsic:					
			Chan are al Mantana	:				
	•		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					

			Construction of Disputed To		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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).			
Claim 4:					
The storage router of claim 2, wherein the remote 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 each of the first Fibre Channel controller comprises: a Fibre Channel (FC) protocol unit operable	[No claim term at issue]		[No claim term at issue]		
to connect to the Fibre Channel transport medium; a first-in-first-out queue coupled to the Fibre					
Channel protocol unit; and a direct memory access (DMA) interface coupled to the first-infirst-out queue and to the buffer.					Algorithm (Control of the Control of

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		Special Master's Proposed			
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
A storage network, comprising: a first Fibre Channel	Workstations: "A remote computing	Workstations: Intrinsic:	Workstation: A computer including	See '035 patent, claim 3.	"A computer which has human input/output devices." (?)
transport medium;	device that connects to		human input/output		
a second Fibre Channel	the first (Fibre Channel)	Col. 4, Il. 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	personal compater.	companing device).	person at a time.		·
Fibre Channel		Extrinsic:			
transport medium;		Dati insit.	e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de		
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'			
plurality of		construction consistent			
workstations connected		with historic			the state of the s
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 Dot Hill			
transport medium; and		litigation adopted			
transport mediam, and		Crossroads' proposed			
,		construction); Microsoft			
		Press Computer		·	
•		Dictionary 368 (1991),		1.0	
		Fore Decl. ISO	·		
		Crossroads' Cl. Const.			
		Br., Ex. Z ("workstation"			
		is understood to be a			•
		broad term in the art).			
storage router	Access control(s):	Access control(s):	Access controls:	See '035 patent, claim 1.	"Controls which limit a
interfacing between the	Access control(s).	Access control(s).	Access controls.	bee 055 paiem, ciaim 1.	device's access to a
first Fibre Channel	"Controls which limit a	Intrinsic:	Controls that use a map		specific subset of storag

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
transport medium and	device's access to a		to permit a particular		devices or sections of a
the 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."
medium, the storage	single storage device	40-43, 48-50, 50-53	particular storage space		
router providing virtual	according to a map."	(Fig. 3 shows	assigned to the device,		
local storage on the		embodiment in which all	and to prevent the device		
storage devices to the		workstations can access	from reading data to or		
workstations and		global storage device).	writing data from		
operable:			storage space assigned to		
to map between the		Col. 4, Il. 7-11 ("access	other devices.		
workstations and the		controls" applies to			
storage devices;		shared storage).			
to implement access					
controls for storage		July 22, 2005 Reply to			
space on the storage		Office Action at 13-14,			
devices; and		Fore Decl. ISO			
		Crossroads' Post-Hr'g			
	·	Cl. Const. Br., Ex. F			
	·	(discussion during			
		reexamination, that the			Park Control
		"access controls" feature	er e		
		includes the concept of	·		
		allowing multiple	· · · · · · · · · · · · · · · · · · ·	·	
		devices to have access to			
		shared storage).			1
					·
		Extrinsic:			
		Chaparral Markman			
		Order at 3-7, 15, Fore		·	
		Decl. ISO Crossroads'			
		Cl. Const. Br., Ex. L	The second secon		
		(Crossroads'		. *	
		construction parallels			
		historic construction; the			
		invention contemplates			
		using access controls for		· ·	

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 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.").					
allow access from the	Allow accessto the	Allow access to the	Allow accessto the	See '035 patent, claim 1.	"Permit or deny acco		
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		from high level		
access controls.	or writing of data using		writing of data in the		network protocols or		
	the NLLBP of the	Fig. 1, Col. 1, Il. 49-54;	native low level, block		file system protocols		
	Virtual Local Storage	Col. 3, Il. 17-23 (the	protocol of the storage		to a native low level		
	without involving a	"storage router" of the	device, without		block protocol		
					L DIOCK TRATAGO		
	translation from a high	invention is contrasted	involving network				
	translation from a high level file system command to a native low	with a "network server" that allowed access to	servers, Ethernet networks, higher-level		request."		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Danguage	request."	translating high level file	TCP/IP, Ethernet	Lymence	Construction
•	request.	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, Il. 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, ll. 44-57 ("virtual			
		local storage" is			
	•	"provided" by the			
		storage router in a			1

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, ll. 11-17, ll. 24-	·		
		27 (supervisor unit			
		within the storage router			
		processes NLLBP			
		requests from the		* **	
		devices to access			
		permitted storage).			
		permitted storage).			
		Abstract; Col. 2, 11. 12-			
		15, 17-20, 24-27; Col. 3,			
		11. 59-63; Col. 3, II. 51-			
	·	53; Col. 4, Il. 2-6; Col. 5,			
		ll. 1-5; Col. 9, ll. 28-31;			
		Col. 10, Il. 9-11	·		
		(specification discloses			
		that NLLBPs are used			
		by, and at, the storage			
		router to allow access).			
		Col. 6, Il. 33-41, 46-56		1	
		(specification describes			
		two embodiments			
		wherein "devices"			
		making the storage			
		access request are			
		servers).	·		
		0 1 1 11 57 60 (46)			
		Col. 1, 11, 57-60 ("from			,
		the perspective of a			
		workstation, or other	· [
		computing device,			

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			* Sec. *
		broader than			
•		"workstations").			
·		Col. 3, Il. 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 ' Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		having a server that			
		provided controlled			1
		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).			
		A 31 6 2005 P 1			
		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	+1		
		required to translate the			
		high level file system			
		command into low level			
	·	commands in order to	e e e e e e e e e e e e e e e e e e e		
		send the NLLBP to the			

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	
		storage device, not the			1.	
	·	use of Ethernet				
		networks, Ethernet or				
		TCP/IP).				
		Col. 2, Il. 17-20; Col. 5,				
		11. 19-22, 50-57, 60-63;				
	.*	Col. 6, Il. 32-37; '147			*	
		Patent, Claim 1, Col. 9,	* 4			
		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		4		
		Fibre Channel despite				
		the fact that these are		e e		
	·	express embodiments).				
		Col. 5, ll. 53-56 (Fibre				
		Channel is a protocol				
		used for communications			,	
		over "Fibre Channel				
		based networks").	1 -			
		Extrinsic:		·	,	
		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	·			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
<u> </u>		to transport high level			
		network file system			
		requests, a network			
		server would translate		·	
		such requests into low			
		level requests to access			
	1.	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).			
		Mov. 11 2011 2d Cy			
		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶3 (a "network server" is a server that			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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").			i e
		notwork).			
		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			

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); <i>Id.</i> at			
		88:2-89:16; 93:4-7;			
		100:16-24 (Defendants		the state of the s	
		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			

Special Master's Proposed Construction of Disputed Terms					
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master' Construction
		(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	-	6 a	
		device; this NLLBP is	. Storage of the stor		
		the NLLBP appropriate			
		for the virtual local			
		storage, not the NLLBP			
		of the storage device			
4		storing the data).			
		Dictionary of Computer			
		and Internet Terms 311			
	e e	(6 th Ed. 1996), Fore			
		Decl. ISO Pl.'s Cl.			
		Const. Br., Ex. S	e e e		
		(defining "native" as "1.			·
		designed for a specific			
		hardware or software			
		environment (rather than			
		for compatibility with	· **		,
				· · · · · · · · · · · · · · · · · · ·	

Actual Claims Language Construction Construction Something elsey"). Stip. Defs. of Cl. Terms, Fore Decl. ISO Pl.'s Posts-Hrg. 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 to be within or locally connected to the initiator device to be within or locally connected to the initiator device to be within or locally connected to the initiator device to be within or locally connected to the initiator device within or locally connected to the initiator device to be within or locally connected to the initiator device to be within or locally connected to the initiator device to be within or locally connected to the initiator device to be within or locally connected to the initiator device to be within or locally connected to the initiator device to be within or locally connected to the initiator device to be within or locally connected to the initiator device to be within or locally connected to the initiator device." April 28, 2011 2d Supp. Deel. of John Levy, Ph.D., Pf. (under Defendants' construction, a protocol used for communication over "Fibre Channel based networks" would be a network protocol. Native: Native low level block protocol: Native: "Designed for use with a specific type of storage device." Abstract, Col. 1, II, 44, 26; Col. 3, II, 17, 22-23, 53, 63; Col. 4, II, 42, 65; Col. 3, II, 17, 22-23, 53, 63; Col. 4, II, 42, 65; Col. 5, II, 31-44, 26; Col. 3, II, 17, 22-23, 53, 63; Col. 4, II, 48, 49. Block Protocol: "As set of rules or standards for exchanging information with a coll 1, II, 48, 49. Col. 2, II, 13-14, 26; Col. 5, II, 48, 49. Col. 2, II, 13-14, 26; Col. 5, II, 48, 49. Col. 2, II, 13-14, 26; Col. 5, II, 48, 49. Col. 2, II, 13-44, 26; Col. 5, II, 48, 49. Col. 2, II, 14, 48, 49. Col. 2, II, 14, 49, 49. Col. 2, II, 14, 49, 49. Col. 2, II, 14, 49, 49. Col. 2, II, 14, 49, 49. Col. 2, II, 14, 49, 49. Col. 2, II, 14, 4	10 11		Special Master's Proposed	Construction of Disputed	Terms	
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 devices. See '035 patent, claim 1. "A set of rules or standards that enable computers to exchan information and do t involve the overheac of high level protoc and file systems typically required by network ser		1 -			1	
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Abstract, Col. 1, ll. 44, construed with reference to individual terms as follows: Block Protocol: "A set of rules or standards for exchanging and color of the	orage devices using					computers to exchar
rotocol in accordance in the mapping and excess controls. "Designed for use with a specific type of storage device." Abstract, Col. 1, Il. 44, Col. 2, Il. 13-14, 26; Col. 3, Il. 17, 22-23, 53, 63; Col. 4, Il. 4-5, 25; Col. 5, I. 3; Claim 1, Col. 9, Il. 29-30; Col. 10, I. 10; Separately construed; alternatively, may be construed with reference to individual terms as follows: Separately construed; alternatively, may be construed with reference to individual terms as follows: Native:	ative low level, block	Native:	Intrinsic:	Does not need to be		
specific type of storage device." 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; Abstract, Col. 1, II. 44, Construed with reference to individual terms as follows: Abstract, Col. 1, II. 44, Construed with reference to individual terms as follows: Native: Abstract, Col. 1, II. 44, Construed with reference to individual terms as follows: Native:	rotocol in accordance	"Designed for use with a		separately construed;	·	1
Block Protocol: "A set of rules or standards for exchanging" "Standards for exchanging" "Col. 2, II. 13-14, 26; Col. 3, II. 17, 22-23, 53, 63; Col. 4, II. 4-5, 25; Col. 5, II. 3; Claim 1, Col. 9, II. 29-30; Col. 10, I. 10; Construed with reference to individual terms as follows: "A set of rules or standards for exchanging 29-30; Col. 10, I. 10; Native: "A set of rules or standards for exchanging 29-30; Col. 10, I. 10; Native:	ith the mapping and	specific type of storage	Abstract, Col. 1, Il. 44,	alternatively, may be		1
Block Protocol: "A set of rules or standards for exchanging 29-30; Col. 10, l. 10; Standards for exchanging 29-30; Col. 10, l	ccess controls.	device."		1		1 -
"A set of rules or standards for exchanging 29-30; Col. 10, l. 10; Native:				to individual terms as		
standards for exchanging 29-30; Col. 10, l. 10; Native:				follows:		
						network servers."
information with a Col. 10, 11. 48-49 Designed for use with a						
		information with a	Col. 10, Il. 48-49	Designed for use with a		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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, Il. 2-6; Col. 5,			
		11. 1-5; Col. 9, 11. 28-31;			
		Col. 10, II. 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).			
		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 m		
		Crossroads' Post-Hr'g			
		Cl. Const. Br., Ex. F	e e e e e e e e e e e e e e e e e e e		
		(Crossroads		•	1

Language	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			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
<u> </u>		Col. 6, Il. 31-41, 46-56			:
		(specification has two			
	, ,	distinct embodiments in			
v =		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			
			1		
		6	1		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's 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		¹	
		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			
		from a storage device"			
		and sending NLLBPs			
		and the only "device"			
		that does so in Graphic			

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed ' Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		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			, de
		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)).			
		Ci. Colist. Di., Ex. 3)).	·	·	
		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	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
	· · · · · · · · · · · · · · · · · · ·	distinguished by			
		patentees during			
		reexamination was from	٠.		
		high level file system			
	·	commands into NLLBP			
		requests); <i>Id.</i> at 89:11-16			
		(parties agree that			
		"allowing access		y.	
	·	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	A second		
		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.")			
		request.			
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶7 (CIFS, NFS			
	·	and FTP are network		·	
		protocols).			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
associated workstations,	devices or sections of a	Col. 4, Il. 7-27, 33-35,	or write data to a		according to a map."
wherein each subset is	single storage device	40-43, 48-50, 50-53	particular storage space		
only accessible by the	according to a map."	(Fig. 3 shows	assigned to the device,		1.0
associated workstation.	2	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, Il. 7-11 ("access	other devices.		
		controls" applies to			
		shared storage).			
1					
		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			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		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	A Transfer of the Control of the Con		
		prosecution history.").			
		prosecution instery.			
The storage network of	Workstations:	Workstations:	Workstation:	See '035 patent, claim 3.	"A computer having
claim 6, wherein the				- · · · · · · · · · · · · · · · · · · ·	input/output devices
access controls include	"A remote computing	Intrinsic:	A computer including		intended for use by
an allocation of subsets	device that connects to		human input/output		humans."
of storage space to	the first (Fibre Channel)	Col. 4, 11. 39-41	devices such as a display		numans.
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 compater.	companing device, j.	person at a time.	*	
ssociated workstation.	·	Extrinsic:			
		L'Atlinsie.			
		Chaparral Markman			
	•	Order at 16, Fore Decl.			
		ISO Crossroads' Cl.			
		Const. Br., Ex. L			
	1	EXAMSE DE EXIL			

			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
100 of 373			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).			
3	Claim 8: The storage network of claim 6, wherein the storage devices comprise hard disk drives.	[No claim term at issue]		[No claim term at issue]		
	Claim 9: The storage network of	Configuration:	Configuration:	Configuration:	See claim 1, supra.	No Construction Necessary.
	claim 6, wherein the storage router comprises: a buffer providing memory work space	"A modifiable setting of information."	Intrinsic: Col. 2, ll. 19-23; Col. 5, ll. 53-54; Col. 6, ll. 58-	"Map"; otherwise indefinite.		Necessary.
	for the storage router; a first Fibre Channel controller operable to connect to and interface with the first Fibre Channel		64 (describing "configuration" as information used to control operation of the storage router and which is modifiable).			

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed 7 Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
transport medium, the					
first Fibre Channel		'147 Patent: Col. 2, 11.			
controller further		28-32; Col. 9, Il. 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			
a second Fibre Channel		needed to "implement[]			
controller operable to		access controls").			
connect to and					
interface with the		Claim 15, Col. 11, Il. 23-		ļ	
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					
a 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			
to 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 Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
to process data in the buffer to interface between the first Fibre		configuration" to mean "keeping a modifiable 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 to the first and second Fibre Channel controllers and the buffer, the supervisor unit operable:	Workstations: "A remote computing device that connects to the first (Fibre Channel) transport medium, and	Workstations: Intrinsic: Col. 4, Il. 39-41 (specification defines	Workstation: A computer including human input/output devices such as a display and keyboard and	See '035 patent, claim 3.	"A computer having input/output devices intended for use by humans."
unit operable: to maintain a configuration for the storage devices that maps between workstations and	may consist of a personal computer."	workstation as a "computing device"). Extrinsic:	designed for use by one person at a time.		
storage devices and that implements the access controls for storage space on the		Chaparral Markman Order at 16, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L			
storage devices; and to process data in the buffer to interface between the first Fibre Channel controller and		(Crossroads' construction consistent with historic construction); <i>Dot Hill</i> Stipulated Definitions of			
the second Fibre Channel controller to allow access from workstations to storage devices in accordance		Claim Terms at 2, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. M (parties in <i>Dot Hill</i> litigation adopted			
with the configuration.		Crossroads' proposed construction); Microsoft			·

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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
		Press Computer			
		<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).			
a supervisor unit coupled	Access control(s):	Access control(s):	Access controls:	See '035 patent, claim 1.	"Controls which limit a
to the first and second				-	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
buffer, 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."
o 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,		
storage devices that		embodiment in which all	and to prevent the device		
maps between		workstations can access	from reading data to or	·	
workstations and		global storage device).	writing data from		
storage devices and			storage space assigned to		
that implements the		Col. 4, Il. 7-11 ("access	other devices.		
access controls for		controls" applies to			
storage space on the		shared storage).	·	·	
storage devices; and	1.				
to 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			
the second Fibre		Cl. Const. Br., Ex. F	1.5	'	
Channel controller to		(discussion during			
allow access from		reexamination, that the	·		
workstations to storage	•	"access controls" feature			
devices in accordance		includes the concept of	*		
with the configuration.		allowing multiple			
·	·	devices to have access to			
		shared storage).			
	<u> </u>			<u> </u>	
		7	1		
			i		

Special Master's Proposed Construction of Disputed Terms

		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
Claim 10:	TARREST NAMES	e dilabatenia di	a sa fall de la company		. Official section is
A method for providing virtual local storage on	Configuration:	Configuration:	Configuration:	See claim 1, supra.	No Construction Necessary.
remote storage devices to Fibre Channel	"A modifiable setting of information."	Intrinsic:	"Map"; otherwise indefinite.		110000000000000000000000000000000000000
devices, comprising:	miormation.	Col. 2, Il. 19-23; Col. 5,	macrimite.		
interfacing with a first		ll. 53-54; Col. 6, ll. 58-	·		
Fibre Channel	•	64 (describing			
transport medium;		"configuration" as			
interfacing with a second		information used to			
Fibre Channel		control operation of the			
transport medium;		storage router and which			
maintaining a		is modifiable).		-	
configuration for		is modificate).		·	
remote storage devices		'147 Patent: Col. 2, ll.			· .
		28-32; Col. 9, Il. 36-41			
second Fibre Channel		("configuration" can also		·	
transport medium that		include mapping			
connected to the second Fibre Channel transport medium that maps between Fibre Channel devices and		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, Il. 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:			
		Chaparral Markman			

Actual Claims	Crossroads' Proposed	Special Master's 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		. 1	
		"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			l se f
		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.		
to Fibre Channel	issues storage access				
devices, comprising:	requests."	Claim 1, Col. 9, ll. 27-30			
interfacing with a first		("devices" refers to the			
Fibre Channel		devices that make			·
transport medium;		requests and are allowed			
interfacing with a second		access to storage			
Fibre Channel		devices).		**************************************	
transport medium;					
maintaining 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").			
the remote storage					
devices and that		Col. 1, Il. 57-60 ("from			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
implements access	Construction	the perspective of a	Construction	Evidence	Construction
controls for storage		workstation, or other			
space on the remote		computing device,			
storage devices; and		seeking to access such		•	
storage devices, and		server data, the access is			
		much slower than access			
		to data on a local storage			•
		device ").			
•				·	
		Claim 3, Col. 9, 11, 37-39	, m 1		
		(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, Il. 4-6; Col. 3, Il.			
		3-6, 41-43; Col. 4, Il. 38-			
		42, ll. 55-56 Col. 6, ll.			
		45-55; Col. 8, 11. 65-68	l ·		
	-	("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			
3		workstations,			
		input/output devices,			
l l		"initiator" and "target"	·		

Actual Claims Language	Crossroads' Proposed Construction	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			
	İ	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		
	•	server" is a server that	·		
		can request access to			
		storage).			
		storage y.			
		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 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 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	. 1		
		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
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 stor
to Fibre Channel	device's access to a		to permit a particular		devices or sections of
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, Il. 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		
ransport 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		
ransport medium;		global storage device).	writing data from		
aintaining a			storage space assigned to		
configuration for		Col. 4, Il. 7-11 ("access	other devices.		
remote storage devices		controls" applies to			
					
		7	8		
		the contract of the contract o			

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			
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	Construction	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).	Construction	Evidence	Construction			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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 accessto the remote storage devices using native low level, block protocol: "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 to the remote storage devices using native low level, block protocol: Intrinsic: Fig. 1, Col. 1, Il. 49-54; Col. 3, Il. 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, Il. 13-30 (storage router "allow[s]	Allow accessto the remote storage devices using native low level, block protocol: 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.	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."

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			
		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).						
		C-1 4 11 7 47						
		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).						
		Storage).						
	•	Col. 4, Il. 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-			1			
		27 (supervisor unit						
		within the storage router						
		processes NLLBP						
		requests from the						
		devices to access						
		. 1	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			
		permitted storage).						
	*	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,	<u> </u>	•				
		ll. 1-5; Col. 9, ll. 28-31;						
		Col. 10, ll. 9-11		. ,				
		(specification discloses						
		that NLLBPs are used						
		by, and at, the storage		ľ				
		router to allow access).						
		Col. 6, 1l. 33-41, 46-56						
		(specification describes	·					
		two embodiments						
		wherein "devices"		•				
	·	making the storage						
		access request are						
		servers).						
		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. 37-39						
		(principles of claim		:				
		differentiation require	·					
		"devices," as a group,						
		must necessarily be						
		broader than						
		8						

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		"workstations").			
		Col. 3, 1l. 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			
	and the state of t	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			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Office Action at 8-11,	i' e		
		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.			÷ 1
		F (showing that	A STATE OF THE STA		
		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, Il. 17-20; Col. 5,	4.0		
		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	*		

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	
		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:				
		Morels 7, 2011 Summ				
		March 7, 2011 Supp. Decl. of John Levy,				
		Ph.D., ¶¶ 9-13 (data	la de la companya de la companya de la companya de la companya de la companya de la companya de la companya de			
		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				

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	1,		
	·	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).			
		using NEEDI).			
•		May 11, 2011 3d Supp.			
		Decl. of John Levy,			
·		Ph.D., ¶3 (a "network	Transition in the state of the		
		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	er en en en en en en en en en en en en en		
		Levy, Ph.D., Ex. A			
		(defining "server" as			
	•	"(1) on a local area			e e
,		network (LAN), a			

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 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").			
		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,	İ		
		201:22-24, 202:24-203:3			

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		
		(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)). Hr'g Tr. at 81:12-15, March 8, 2011 (all parties agree that the Petal, Spring and Oeda references disclose					

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	and the second s		
	•	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			·
	1				
		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			

Actual Claims	Crossroads' 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	A CONTRACTOR OF THE STATE OF TH		
		(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	. `		
		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	* · · · · · · · · · · · · · · · · · · ·		

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		only with delivery of messages).			
			e e		
		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			
		1			
		environment (rather than			
		for compatibility with something else)").	_	·	
		something eise)).			
		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 space, in a			
		remotely connected to an	-		
		initiator device to be			

Order at 16, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L. (Crossroads' construction is the historic construction of

Native low level block

term).

protocol:

Native low level block

protocol ("NLLBP"):

Crossroads'

Evidence

connected to the initiator

April 28, 2011 2d Supp.

within or locally

device").

Actual Claims

Language

allowing access from

Fibre Channel initiator

Crossroads' Proposed

Construction

protocol:

Native low level block

Special Master's Proposed Construction of Disputed Terms

Defendants' Proposed

Construction

Defendants'

Evidence

See '035 patent, claim 1.

Special Master's

Construction

"A device that issues

requests for data or

"A set of rules or

standards that enable

storage."

Document 167-11

			Construction of Disputed T		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
devices to the remote	NT 4		D 1. 1		computers to exchange
storage devices using	Native:	Intrinsic:	Does not need to be		information and do not
native low level, block	"Designed for use with a	41	separately construed;		involve the overhead
protocol in accordance	specific type of storage	Abstract, Col. 1, 11, 44,	alternatively, may be		of high level protocols
with the configuration.	device."	Col. 2, II. 13-14, 26; Col.	construed with reference		and file systems
	DI ID	3, Il. 17, 22-23, 53, 63;	to individual terms as		typically required by
	Block Protocol:	Col. 4, 11. 4-5, 25; Col. 5,	follows:		network servers."
	"A set of rules or	1. 3; Claim 1, Col. 9, 11.			not work sor vors.
	standards for exchanging	29-30; Col. 10, 1. 10;	Native:		
	information with a	Col. 10, 11. 48-49	Designed for use with a		
	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		
	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, II. 49-54;	protocols or file system		
	Block Protocol:	Col. 3, ll. 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.,			1
		NLLBP) and sending the			
		NLLBP to the physical			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		storage devices).			
	· .	Claim 1, Col. 9, 11. 13-30		ŀ	
		(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).			
	**	chaoic 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, Il. 9-11			
		(specification discloses			
		that NLLBPs are used			
		by, and at, the storage			
		router to allow access).			
	*				
		Col. 6, Il. 33-41, 46-56			
		(specification describes		· · ·	
	· ·	two embodiments			
		wherein "devices"			
		making the storage			
		access request are			
•	`	servers).		.	
		April 6, 2005 Reply to			

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으
37
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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).	·		
		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			

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed 7 Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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).	·		
		0.1.0.11.17.00.0.1.5		·	
		Col. 2, 11. 17-20; Col. 5,			
		11. 19-22, 50-57, 60-63;			
		Col. 6, Il. 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	ľ		
		Fibre Channel despite	·		
		the fact that these are			
		express embodiments).			
		C. Pross Chicodiniono).			
		Col. 5, 1l. 53-56 (Fibre			
		Channel is a protocol			
		used for communications			'
		over "Fibre Channel			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		based networks").			٠.
		Col. 1, Il. 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			
	A Company of the Comp	are servers).			
		Turinaia			
		Extrinsic:		·	
		March 7, 2011 Supp.			
		Decl. of John Levy,			
		Ph.D., ¶2; March 7, 2011			
	The second secon	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			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	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).			
			·		
		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).			
		Halm Tr. 76.4 10 90 00			
		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			
	4	commands to network			

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.	·		
•		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			
		99	9		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's 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;	·	· Ar	
		100:16-24 (Defendants		<u>.</u> .	
	·	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		j	
		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		1	
		level file system			

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).			
		36 15 2045			
		March 7, 2011 Decl. of			
		Brian Berg, ¶37			
		(Defendants' expert uses			
		term "network protocol"		·	
		broadly such that it			
		would include Fibre			
		Channel).			
		Ame:1 29 2011 24 C			
		April 28, 2011 2d Supp.		all and the second seco	
		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).			
	•	oo 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			

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Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Danguage	Construction	servers communicating with storage using NLLBPs).			
Claim 11:					
The method of claim 10,	Configuration:	Configuration:	Configuration:	See claim 1, supra.	No Construction
wherein maintaining the					Necessary.
onfiguration includes	"A modifiable setting of	Intrinsic:	"Map"; otherwise		
llocating subsets of	information."		indefinite.		<u>-</u>
torage space to		Col. 2, Il. 19-23; Col. 5,			
ssociated Fibre Channel		11. 53-54; Col. 6, 11. 58-			
evices, wherein each	·	64 (describing "configuration" as			
abset is only accessible y the associated Fibre		information used to	·		
hannel device.		control operation of the			
namei device.		storage router and which			
	-	is modifiable).			
		is modifiable).			
		'147 Patent: Col. 2, 11.			-
		28-32; Col. 9, 11. 36-41			
		("configuration" can also		2	
		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			
		the configuration			
		includes a map"			
	**	would be meaningless			
		under Defendants'			
		proposed construction).			

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 (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			
	The state of the s	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					Necessary.
configuration includes	"Computing device that	Intrinsic:	Computer.	·	
allocating subsets of	issues storage access		_		
storage space to	requests."	Claim 1, Col. 9, 11. 27-30			
associated Fibre Channe		("devices" refers to the			
levices, wherein each		devices that make			
subset is only accessible		requests and are allowed			
by the associated Fibre		access to storage			
Channel device.		devices).			
		Col. 1, 11. 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			

Actual Claims			Construction of Disputed Te		Constal Manda
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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 ").			·
		Claire 2 Cal 0 11 27 20			
		Claim 3, Col. 9, 11. 37-39 (principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than	·		
		"workstations").			
		, and the state of			
		Col. 6, Il. 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;			1
		Col. 2, 11. 4-6; Col. 3, 11.			
en en en en en en en en en en en en en e	"	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			

			Construction of Disputed Te		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		devices such as			
		workstations,			
		input/output devices,	ŀ		
		"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			ľ
		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			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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).			
		requestis).			
		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			•

		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
		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	e e		
		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 12:					
the method of claim 11,	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
herein the Fibre					Necessary.
Channel devices	"Computing device that	Intrinsic:	Computer.		
omprise workstations.	issues storage access				
	requests."	Claim 1, Col. 9, Il. 27-30			
		("devices" refers to the	· ·		
		devices that make			
		requests and are allowed			
		access to storage			
	•)7		
				•	

devices). Col. 1, Il. 36-37; Col. 2, Il. 4-5; Col. 4, Il. 55-56; Col. 8, Il. 65-68 (the specification describes the devices that make requests to access the storage devices as "computing devices"). 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, Il. 37-39 (principles of claim differentiation require "devices," as a group, must necessarily be broader than "workstations"). Col. 6, Il. 31-41, 46-56 (the specification describes "servers" as a type of computing device that can make storage access requests).	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, 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, must necessarily be broader than "workstations"). Col. 6, II. 31-41, 46-56 (the specification describes "servers" as a type of computing device that can make			devices).			
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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, Il. 37-39 (principles of claim differentiation require "devices," as a group, must necessarily be broader than "workstations"). Col. 6, Il. 31-41, 46-56 (the specification describes "servers" as a type of computing device that can make				•		
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						
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(principles of claim differentiation require "devices," as a group, must necessarily be broader than "workstations"). Col. 6, Il. 31-41, 46-56 (the specification describes "servers" as a type of computing device that can make			device ").			
(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						
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						
"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				· I		
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						
broader than "workstations"). Col. 6, 1l. 31-41, 46-56 (the specification describes "servers" as a type of computing device that can make						
"workstations"). Col. 6, 1l. 31-41, 46-56 (the specification describes "servers" as a type of computing device that can make						
Col. 6, 1l. 31-41, 46-56 (the specification describes "servers" as a type of computing device that can make			1			
(the specification describes "servers" as a type of computing device that can make						
(the specification describes "servers" as a type of computing device that can make			Col. 6, 11. 31-41, 46-56			
type of computing device that can make			(the specification			
device that can make						
				·		
storage access requests).						·
			storage access requests).	·		
Abstract, Col. 1, II. 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, Il. 4-6; Col. 3, Il.	·		·
		3-6, 41-43; Col. 4, 11. 38-			
	×	42, II. 55-56 Col. 6, II.			
		45-55; Col. 8, ll. 65-68			, i
		("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).			
		ioquests for storage).			
		Extrinsic:			
		Lati insit.			
		April 28, 2011 2d Supp.			
	1 '	Decl. of John Levy,			1

		· · · · · · · · · · · · · · · · · · ·	Construction of Disputed T		
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, 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").			
		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			

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	<u>.</u> .		
		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	
		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	1		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Construction of Disputed To Defendants' Proposed Construction	Defendants' Evidence	Special Master ² Construction
		broader than "workstations").			
		Col. 6, Il. 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, Il. 36-37, Il. 53-56;			
		Col. 2, II. 4-6; Col. 3, II. 3-6, 41-43; Col. 4, II. 38-42, II. 55-56 Col. 6, II.			
		45-55; Col. 8, ll. 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			

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			1.5
		requests for storage).			
	·				
		Extrinsic:			
		1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			
		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).			
		issued using 1 (2221).	·		
		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-			

		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	"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, 1l. 7-59, Col. 4, 1l. 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, Il. 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 shared storage).	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, higher-level protocols	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."

	\$	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
device connected to the			such as TCP/IP, Ethernet		
second transport		Extrinsic:	protocols, network		
medium using native			protocols or file system		
low level, block		Chaparral Markman	protocols, or translation		
protocols according to		Order at 3-7, 15, Fore	from one protocol to		
a map between the		Decl. ISO Crossroads'	another.		
device and the remote		Cl. Const. Br., Ex. L		~	
storage device.		(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.").	·		
a supervisor unit coupled	Native low level block	Native low level block	Native low level block	See '035 patent, claim 1.	"A set of rules or
to the first controller	protocol ("NLLBP"):	protocol:	protocol:	parent, ciam 1.	standards that enable
and the second	protocor (Tillian).	p. stocon	P. Stocom		
and the second					computers to exchange

Special Master's Proposed Construction of Disputed Terms

Crossroads'

Evidence

Defendants' Proposed

Construction

Special Master's

Construction

Defendants'

Evidence

Crossroads' Proposed

Construction

Actual Claims

Language

NLLBP) and sending the NLLBP to the physical storage devices).

Actual Claims Crossroads' Proposed Crossroads' Defendants' Proposed Defendants' Special Ma							
Language	Construction	Evidence	Construction	Evidence	Construction		
		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, 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, II. 9-11					
		(specification discloses	·				
		that NLLBPs are used					
		by, and at, the storage	.*				
		router to allow access).					
		Col. 6, Il. 33-41, 46-56					
		(specification describes					
		two embodiments					
	·	wherein "devices"					
		making the storage					
		access request are	•				
		servers).					
		April 6, 2005 Bomboto					
	1	April 6, 2005 Reply to			İ		

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. 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			l E
		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			
	ľ	any use of a "network			
		server"; Crossroads			
		distinguished its	*		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's 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,			
		ll. 19-22, 50-57, 60-63;			
		Col. 6, Il. 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").			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		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).	·		
			4		
		Col. 6, Il. 31-41, 46-56			
		(specification has two			
		distinct embodiments in			
		which the "devices"			
		making storage requests			
		are servers).			
		Extrinsic:			
		Extrinsic:			
		March 7 2011 Summ			
		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).			
		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)			
		with use in specification)			
		March 7, 2011 Supp.			
		Decl. of John Levy,			
		Ph.D., ¶13 (Ethernet and			
		TCP/IP protocols are			

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	
		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,				

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			
		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			

		255 388 8 1 2 2 2 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Construction of Disputed To	1000 A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Actual 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); <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	3		
		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			

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		
		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 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
		with storage using NLLBPs).			1
Claim 15	图16 · 16 · 16 · 16 · 16 · 16 · 16 · 16 ·	7.5		The state of the s	
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").	Configuration: "Map"; otherwise indefinite.	See claim 1, supra.	No Construction Necessary.
		Claim 15, Col. 11, Il. 23-28 (the limitation "operable to maintain a configuration wherein the configuration includes a map" would be meaningless under Defendants' proposed construction).			

The apparatus of claim 14, wherein the	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"). Device:	Device:	See '035 patent, claim 1.	
11	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").	Device:	See '035 notant alaim 1	
11	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").	Device:	See '035 notant alaim 1	
11	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").	Device:	See '035 notant alaim 1	
11	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").	Device:	See '035 notant alaim 1	
11	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").	Device:	See '035 notant alaim 1	
1 1	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").	Device:	See '035 notant alaim 1	
1 1	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").	Device:	See '035 notant alaim 1	
11	"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").	Device:	See '035 notent elaim 1	
11	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").	Device:	See '035 notant alaim 1	
11	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").	Device:	See '035 notant alaim 1	
11	of John Levy, Ph.D., ¶46 (person of ordinary skill would understand "maintaining a configuration" to mean "keeping a modifiable set of information").	Device:	See '035 notant alaim 1	
11	(person of ordinary skill would understand "maintaining a configuration" to mean "keeping a modifiable set of information").	Device:	See '035 notant alaim 1	
11	would understand "maintaining a configuration" to mean "keeping a modifiable set of information").	Device:	See '035 notant alaim 1	
11	"maintaining a configuration" to mean "keeping a modifiable set of information").	Device:	See '035 notant claim 1	
11	configuration" to mean "keeping a modifiable set of information").	Device:	See '035 notant claim 1	
11	"keeping a modifiable set of information").	Device:	See '035 nateut claim 1	
11	set of information").	Device:	See '035 natent claim 1	N. 6
11		Device:	Sac '035 natant claim 1	37 0
			Dee OJJ paiem, ciaim 1.	No Construction
			• •	Necessary.
supervisor unit is further "Computing devic	ce that Intrinsic:	Computer.		
operable to maintain a issues storage acce			1	
configuration wherein requests."	Claim 1, Col. 9, 11. 27-30			
he configuration	("devices" refers to the			
ncludes the map	devices that make	,		
petween the device and	requests and are allowed	·		
he remote storage	access to storage			
device, and further	devices).			
wherein the map				
ncludes virtual LUNs	Col. 1, Il. 36-37; Col. 2,			
hat provide a	II. 4-5; Col. 4, II. 55-56;			
representation of the	Col. 8, 11. 65-68 (the			
storage device.	specification describes			
	the devices that make			
	requests to access the		1	
	storage devices as		<u></u>	

tual 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 2 Cal 0 11 27 20	·		
		Claim 3, Col. 9, 11. 37-39			
		(principles of claim differentiation require			
		"devices," as a group,			
		must necessarily be			
	,	broader than			
		"workstations").			
		workstations j.			
		Col. 6, Il. 31-41, 46-56			'
		(the specification			
		describes "servers" as a			
		type of computing			
	4 4 8	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, 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
Language	Constituction	workstations,	Construction	Evidence	Construction
		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).			

7/32/2009/2009		A STATE OF THE PROPERTY OF THE	Construction of Disputed To	430,434,444	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 (4th 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			

		Special Master's Proposed			
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").			
Claim 16: The apparatus of claim	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
15, wherein the map	Device.	Device.	Device.	bee 055 paiem, ciaim 1.	Necessary.
only exposes the device to LUNs that the device	"Computing device that issues storage access	Intrinsic:	Computer.		
may access.	requests."	Claim 1, Col. 9, II. 27-30 ("devices" refers to the devices that make			
· · · · · · · · · · · · · · · · · · ·		requests and are allowed access to storage			

		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
		devices). Col. 1, Il. 36-37; Col. 2, Il. 4-5; Col. 4, Il. 55-56; Col. 8, Il. 65-68 (the specification describes the devices that make requests to access the storage devices as			
		"computing devices"). Col. 1, 1l. 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, must necessarily be broader than "workstations").			
		Col. 6, Il. 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-			

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed To Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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, II. 55-56 Col. 6, Il.			
		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			
		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).			
		requests for storage).			
		Extrinsic:			
					·
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			

			Construction of Disputed		
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, 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 202:24-203:3, 205:4-7, Mar. 8, 2011 (Defendants'			
		counsel agreeing that the defining characteristic of a device is that it is the			c
		thing that issues storage requests).			
		May 11, 2011 3d Supp. Decl. of John Levy, Ph.D., ¶3 (a "network			

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed T Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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").			
	·				
					-
			· .		

ļma						
	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
			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").			
5	Claim 18: The apparatus of claim 14, wherein the remote	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction Necessary.
	storage device further comprises storage space	"Computing device that issues storage access	Intrinsic:	Computer.		
	partitioned into virtual local storage for the device connected to the first transport medium.	requests."	Claim 1, Col. 9, Il. 27-30 ("devices" refers to the devices that make requests and are allowed access to storage devices). Col. 1, Il. 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").			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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").			
		6 1 6 11 61 41 46 56	·		
		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, Il. 4-6; Col. 3, Il.	·		
		3-6, 41-43; Col. 4, ll. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, Il. 65-68			
		("devices" is used			
		broadly to refer to			
		various computing			
		devices such as			
		workstations,			
		input/output devices,			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:			
		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		·	
		14	· · · · · · · · · · · · · · · · · · ·		
		• • • • • • • • • • • • • • • • • • •			

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 (4th 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				

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:		7868875			
The apparatus of claim 8, wherein the upervisor unit is further perable to prevent the levice from accessing my storage on the emote storage device nat is not part of a irtual local storage artition assigned to the evice.	Device: "Computing device that issues storage access requests."	Device: Intrinsic: Claim 1, Col. 9, Il. 27-30 ("devices" refers to the devices that make requests and are allowed access to storage devices). Col. 1, Il. 36-37; Col. 2,	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
		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		į	
		"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").			
		workstations).			
		Col. 6, Il. 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, Il. 4-6; Col. 3, Il.			
	1	3-6, 41-43; Col. 4, 11. 38-			

	13,000,000,000,000,000		Construction of Disputed		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		42, ll. 55-56 Col. 6, ll. 45-55; Col. 8, ll. 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 understand that in the			

Actual Claim		Special Master's Proposed Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		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			
•		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).			
		roquests).			
		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 Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction			
271 of 373		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").			Case 1:10-cv-00652-SS			
Claim 20: The apparatus of claim 14, wherein the first controller and the secon controller further	[No claim term at issue]		[No claim term at issue]		of 20			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
comprise a single controller.					
Claim 21:					
A system for providing	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
virtual local storage on				en en en en en en en en en en en en en e	Necessary.
remote storage devices,	"Computing device that	Intrinsic:	Computer.		
comprising:	issues storage access				
a first controller	requests."	Claim 1, Col. 9, 11. 27-30			
operable to connect to	_	("devices" refers to the			
and interface with a		devices that make	1000		
first transport medium		requests and are allowed			
operable according to a		access to storage			
Fibre Channel		devices).			
protocol;					
a second controller		Col. 1, 11. 36-37; Col. 2,			
operable to connect to		11. 4-5; Col. 4, 11. 55-56;			
and interface with a		Col. 8, ll. 65-68 (the			
second transport		specification describes			
medium operable		the devices that make			
according to the Fibre		requests to access the			
Channel protocol;		storage devices as			
at least one device		"computing devices").		·	
connected to the first				·	
transport medium; at		Col. 1, ll. 57-60 ("from			
least one storage		the perspective of a			
device connected to the		workstation, or other			
second transport		computing device,			
medium; 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, Il. 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
	Constitution	must necessarily be	Constitution	Little	COMMITTEE STATE
		broader than			
		"workstations").			
		Col. 6, Il. 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, Il. 4-6; Col. 3, Il.			
		3-6, 41-43; Col. 4, ll. 38-			
	·	42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, Il. 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			1
		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 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,			
		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").			
		I was a second of the second o			

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).			
		tea CAM Carl			
		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").	ļ		
		Special Master's Report			
		at 22, Dot Hill			
		Litigation, Pl.'s Cl.		•	

		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
		shared storage).	Ethernet networks,		
			higher-level protocols		
		Extrinsic:	such as 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).			
				the state of the s	
		Comments on Statement			
		of Reasons for			
		Patentability and/or			·
		Confirmation, Fore Decl.			
		ISO Pl.'s Cl. Const. Br.,			•
	1	Ex. I (patentees			
		expressly disagreed with		The state of the s	
		any characterization of			
		the claims that were	· ·	10	
		"inconsistent with the		·	
		claim language,			
		specification or prior			
		prosecution history.").			
n 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:		standards that enable

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: map 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."	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	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		storage devices).			
		The state of the s			
		Claim 1, Col. 9, Il. 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, Il. 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"			1
		making the storage			
		access request are			
		servers).			
		April 6 2005 Penly to	·		
		April 6, 2005 Reply to			

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			
	144 144 144	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-			
	1	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			

			Construction of Disputed 7	Γerms	
Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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).			
		Cal 2 11 17 20 Cal 5	·		
		Col. 2, Il. 17-20; Col. 5, Il. 19-22, 50-57, 60-63;			
		Col. 6, Il. 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, Il. 53-56 (Fibre			
		Channel is a protocol	1		
		used for communications			
		over "Fibre Channel			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		based networks").			
		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).	·		r
		Col. 6, Il. 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			1

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	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).	·		
		March 7, 2011 Decl. of			
		Brian Berg, ¶37 (states	·		
		that "low level" means			
		"without involving			
		file system protocols.").			
		The system protection.	·		
		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	1		
		using NLLBP).			
		H-1- T- 76.4 10 82.20			
		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); <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		and the state of t	
		Decl. ISO Pl.'s Post-Hr'g			
		Cl. Const. Br., Ex. H;	1		
		April 28, 2011 2d Supp.			
		Decl. of John Levy,			
		Ph.D., ¶5 (accused		İ	
		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		1	
		parties agree that the			
		16			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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); 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			

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); Id. ¶			
		34 (specification			
		describes 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
		servers communicating with storage using NLLBPs).			
Claim 22:			LVŽET J A R		
The system of claim 21, wherein the access control device is further	Configuration: "A modifiable setting of	Configuration: Intrinsic:	Configuration: "Map"; otherwise	See claim 1, supra.	No Construction Necessary.
operable to maintain a configuration wherein	information."	Col. 2, ll. 19-23; Col. 5,	indefinite.		
the configuration includes the map between the at least one		ll. 53-54; Col. 6, ll. 58- 64 (describing "configuration" as			
device and the at least one storage device, and		information used to control operation of the			
further wherein the map includes virtual LUNs that provide a representation of the at least one storage device		storage router and which is modifiable).			
representation of the at least one storage device.		'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 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 (parties	·		
		to earlier action agreed			
		to construe "maintain a	·		
	· ·	configuration" to mean	·		
		"keeping a modifiable		Principles	
		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				, and a second	Necessary.
control device is further	"Computing device that	Intrinsic:	Computer.	L Comment	
operable to maintain a	issues storage access		_		
configuration wherein	requests."	Claim 1, Col. 9, ll. 27-30			
the configuration		("devices" refers to the			
includes the map		devices that make			
between the at least one		requests and are allowed			
device and the at least		access to storage			
one storage device, and		devices).			
further wherein the map		Cal 1 II 26 27, Cal 2			
includes virtual LUNs that provide a		Col. 1, Il. 36-37; Col. 2, Il. 4-5; Col. 4, Il. 55-56;			
representation of the at		Col. 8, 11. 65-68 (the			
least one storage device.		specification describes			
ioust one storage device.		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, 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	1		
		(principles of claim	n napodo najeri		
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").			
		Col. 6, Il. 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, 11. 38-			
		42, ll. 55-56 Col. 6, ll.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
	·	broadly to refer to			
	L	various computing			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's 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,			en en en en en en en en en en en en en e
		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	1		

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		router using NLLBP).			
		The McCorre Hill			
		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			

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").	•	La contraction of the Contractio	
		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 23:	I D •	T		G (025 1 1 1	Dr. G
The system of claim 22,	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
wherein the map only	"C		Commenter		Necessary.
exposes the at least one	"Computing device that	Intrinsic:	Computer.		
device to LUNs that the	issues storage access	01: 1 0 1 0 11 07 20			
at least one device may	requests."	Claim 1, Col. 9, 11. 27-30			
access.		("devices" refers to the			
		devices that make			
		requests and are allowed			
	<u> </u>	access to storage		<u> </u>	
		16	58		
			· =	•	

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		devices).			
		Col. 1, II. 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			
		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	w v		
		differentiation require "devices," as a group,			
		must necessarily be			
		broader than "workstations").			
		Col. 6, Il. 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-			

Construction Evidence Construction Evidence Construction				Construction of Disputed Te		
Col. 2, II. 4-6; Col. 3, II. 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, I2, 22, Fore Decl. ISO Crossroads' Post-Hir'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:	Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	
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 Offlice Action at 8, 10, 12, 22, Fore Decl. ISO Crossroads' Post-Hr'g Cl. Const., Ex. E; July 22, 2005 Reply to Offlice 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). Extrinsie:						
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, I0, 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. Bx. E, F ("Device" is used over ninety times in the reexamination prosecution history to refer to types of devices capable of making requests for storage). Extrinsie:						
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 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., Ex. E; ("Device" is used over ninety times in the reexamination prosecution history to refer to types of devices capable of making requests for storage). Extrinsic:						
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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:			"initiator" and "target"			
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:						
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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:						
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:				Ì		
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:						
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:						
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:			22, 2005 Reply to Office			
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:						
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:						
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("Device" is used over ninety times in the reexamination prosecution history to refer to types of devices capable of making requests for storage). Extrinsic:						
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reexamination prosecution history to refer to types of devices capable of making requests for storage). Extrinsic:				·		
prosecution history to refer to types of devices capable of making requests for storage). Extrinsic:						
refer to types of devices capable of making requests for storage). Extrinsic:						
capable of making requests for storage). Extrinsic:						
requests for storage). Extrinsic:						
Extrinsic:						
April 28, 2011 2d Supp.			Extrinsic:			
			April 28, 2011 2d Supp.			
Decl. of John Levy,			Decl. of John Levy,			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master' Construction
Ø ** 0 *		Ph.D., ¶ 4 (one of	,		
	-	ordinary skill would			
		understand that in the			
	The state of the s	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).			
		100101 00115 112221).			
		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").			
		H-2- Tr4 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			
		thing that issues storage			
		requests).			
		May 11 2011 24 C			
		May 11, 2011 3d Supp. Decl. of John Levy,			
		Ph.D., ¶3 (a "network			

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").			
		The state of the s			
			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
Claim 25: The system of claim 21, wherein the at least one torage device further comprises storage space partitioned into virtual ocal storage for the at least one device.	Device: "Computing device that issues storage access requests."	Claim 1, Col. 9, Il. 27-30 ("devices" refers to the devices that make requests and are allowed access to storage devices). Col. 1, Il. 36-37; Col. 2, Il. 4-5; Col. 4, Il. 55-56; Col. 8, Il. 65-68 (the	Device: Computer.	Evidence 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
		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, Il. 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,			

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed Te Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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:			
		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).			
		100001 00005			
		The McGraw-Hill			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	
		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-				
	Ì	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	l ·			
		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				
		17	7			

		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").			
Claim 26:					
The system of claim 25, wherein the access	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction Necessary.
control unit is further operable to prevent at	"Computing device that issues storage access	Intrinsic:	Computer.		
least one device from accessing any storage on the at least one storage	requests."	Claim 1, Col. 9, Il. 27-30 ("devices" refers to the devices that make			
device that is not part of a virtual local storage		requests and are allowed access to storage			
partition assigned to the at least one device .		devices).			
		Col. 1, 11. 36-37; Col. 2,			

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed T Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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, 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, Il. 37-39			
	4	(principles of claim			
		differentiation require	-		
		"devices," as a group,			
		must necessarily be			
		broader than			
		"workstations").	·		
		6-1 6 11 21 41 46 56			
		Col. 6, Il. 31-41, 46-56 (the specification			
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
			<u> </u>		
		Abstract, Col. 1, ll. 21-			
		24, 11. 36-37, 11. 53-56;			
		Col. 2, Il. 4-6; Col. 3, Il.			
		3-6, 41-43; Col. 4, 11. 38-			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		42, ll. 55-56 Col. 6, ll.			
		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			
	1	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			
	WHITE CONTROL OF THE	("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			
		18	3 0		
			. - 		

			Construction of Disputed			
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction	
		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 (4th 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).				

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, <i>Dot Hill</i> Litigation, Pl.'s Cl. Const. Hr'g Ex. P-15 (Court previously construed "storage router" as "a data			
laim 27: he system of claim 21, herein the first	[No claim term at issue]	transmitting device that allows users to integrate different servers or workstations into a storage network").	[No claim term at issue]		

		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
comprise a single controller.		E Triber			
Claim 28:				The section of the se	
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.		·
comprising:	issues storage access				·
mapping between a	requests."	Claim 1, Col. 9, II. 27-30			
device connected to a	The second secon	("devices" refers to the			
first transport medium		devices that make			
and a storage device		requests and are allowed			
connected to a second		access to storage			
transport medium,		devices).			
wherein the first					
transport medium and		Col. 1, Il. 36-37; Col. 2,			
the second transport		11. 4-5; Col. 4, 11. 55-56;			
medium operate		Col. 8, 11. 65-68 (the	·		
according to a Fibre		specification describes			
Channel protocol;		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].	1	
		device ").			
		G1: 2 G 1 G 11 27 22			
		Claim 3, Col. 9, Il. 37-39			
		(principles of claim			
		differentiation require			
		"devices," as a group,		1	

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, Il. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing			
		device that can make			
		storage access requests).			
		Ab-44 C-1 1 11 01			
		Abstract, Col. 1, ll. 21-24, ll. 36-37, ll. 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).			
		A			
		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 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,			
		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			Wall
		(defining device as "a			
		mechanical, electrical or			
		electromechanical	÷		
		contrivance or appliance.			
		Commonly used in			
		reference to peripherals			
		such as printers, CRTS			
		and disk drives").			

			Construction of Disputed To	Accessors and the second	
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).			
		Minnes & Communication	·		
		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.			

	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		
		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").					
implementing access controls for storage space on the storage device; and	"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, Il. 7-59, Col. 4, Il. 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, Il. 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	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.").			
		18	88		

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	
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, Il. 49-54; Col. 3, Il. 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, Il. 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).	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 file system 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."	

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		Col. 4, Il. 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	1.00		
	*	storage access).			
		Col. 5, Il. 11-17, Il. 24-			
		27 (supervisor unit			
		within the storage router			-
		processes NLLBP	e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de		
		requests from the			
		devices to access			
	·	permitted storage).			
		Alberts et Cal 2 II 12			
		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, Il. 9-11			
		(specification discloses 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, 11. 33-41, 46-56			
		(specification describes			
		two embodiments			
		wherein "devices"			
		making the storage			
		access request are			
		servers).			·
		Serversy.			ľ
		Col. 1, Il. 57-60 ("from	4.		
		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").			
		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).			ı

		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	
		April 6, 2005 Paula 4a				7
		April 6, 2005 Reply to Office Action at 10-11,				Case 1:10-cv-00652-55
		Fore Decl. ISO				ě
		Crossroads' Post-Hr'g				
		Cl. Const. Br., Ex. E;	·			Ç
		July 22, 2005 Reply to				Ċ
		Office Action at 24-27,				ċ
		Fore Decl. ISO				jo
		Crossroads' Post-Hr'g				7.0
		Cl. Const. Br., Ex. F	;			ý
		(Crossroads				U
		distinguished Petal,				Č
		Spring and Oeda as				OCU
		having a server that				III.
		provided controlled				er
]		access to storage was			·	
		required to translate high	·			Document 16/-16
		level file system commands into low level				
		commands into low level			-	6
		send the NLLBP to the			·	Н
		storage devices).				e
		storage devices).			· ·	Q (
		April 6, 2005 Reply to				/۵/
		Office Action at 8-11,	·			
		19, 22-23, Fore Decl.				Filed U8/1U/11
		ISO Crossroads' Post-				
		Hr'g Cl. Const. Br., Ex.				7
		E; July 22, 2005 Reply				gge
		to Office Action at 11-				(D
	· ·	17, 21-28, Fore Decl.				Page 13 of 20
		ISO Crossroads' Post-				9
		Hr'g Cl. Const. Br., Ex.				7.
		F (showing that				
		Crossroads did not make				
		a sweeping disclaimer of				

s c i I	any use of a "network server"; Crossroads distinguished its invention from Oeda, Petal and Spring based		
i I	distinguished its invention from Oeda, Petal and Spring based		1
i I	invention from Oeda, Petal and Spring based		
I	Petal and Spring based		
. i t	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).		
	101/11).	·	
i	Col. 2, Il. 17-20; Col. 5,		
	II. 19-22, 50-57, 60-63;		
	Col. 6, Il. 32-37; '147		
	Patent, Claim 1, Col. 9,		
	II. 28-32 (disclosing and		
	claiming embodiments		
	using Fibre Channel; the		
	nclusion of "without		
li	nvolving network		
l F	protocols" according to		
	Defendants' expert		
	would prohibit the use of		
	Fibre Channel despite		
	he fact that these are		
e	express embodiments).		
	Col. 5, ll. 53-56 (Fibre		
	Channel is a protocol		
 1 .	Chamier to a protocor		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' 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).			

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	e e		
		using NLLBP).		e e	
		3611-0011-21-0			
		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").	İ		
		Special Master's Report			
	TI 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	19	5		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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); <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			

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed Te Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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 <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;	19		
		100:16-24 (Defendants			
		agree that the			
		"translation"			
		distinguished by	·		
		patentees during			
		reexamination was from	·		
		high level file system			
			•		
		19	7		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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			
		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			
i.		Brian Berg, ¶37			
**************************************		(Defendants' expert uses			
		term "network protocol"			
		10	10		
		19	70		

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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). 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 Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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.	1 m		
		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			
		Jased Herworks Would			
		20	00		

Special Master's Proposed Construction of Disputed Terms Actual Claims Crossroads' Proposed Crossroads' Defendants' Proposed Defendants' Special Master's								
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction			
		be a network protocol).						
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:	Native low level block protocol: Intrinsic: 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,	Native low level block protocol: Does not need to be separately construed; alternatively, may be construed with reference to individual terms as follows	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."			
	"A set of rules or standards for exchanging information with a block-oriented storage device." Low Level	l. 3; Claim 1, Col. 9, Il. 29-30; Col. 10, 1. 10; Col. 10, Il. 48-49 (specification consistently uses "NLLBP" as a single term).	Native: Designed for use with a specific type of storage device. Low-level protocol:		network servers.			
	Protocol: "A set of rules or standards that enable computers to exchange information without involving high level file	Fig. 1; Col. 3, Il. 20-23 (network server shown in Fig. 1 communicates with storage devices via NLLBPs even though	A set of rules or standards that enable computers to exchange information without involving network servers, Ethernet					
system protocols." Or, in the alternative:	the SCSI commands are sent by a network server).	networks, or higher-level protocols such as TCP/IP, Ethernet protocols, network						
	Native Low Level Block Protocol:	Fig. 1, Col. 1, Il. 49-54; Col. 3, Il. 17-23 (the "storage router" of the	protocols or file system protocols.					
	"A set of rules or standards designed for exchanging information with a block-oriented storage device without	invention is contrasted with a "network server" that allowed access to storage devices by translating high level file	Block protocol: A set of rules or standards for exchanging information with a block-oriented storage					

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
	system protocols."	"network protocol" into low level requests (i.e., NLLBP) and sending the NLLBP to the physical storage devices).			
		Claim 1, Col. 9, Il. 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, Il. 59-63; Col. 3, Il. 51-53; Col. 4, Il. 2-6; Col. 5, Il. 1-5; Col. 9, Il. 28-31; Col. 10, Il. 9-11 (specification discloses that NLLBPs are used by, and at, the storage router to allow access).			
		Col. 6, Il. 33-41, 46-56 (specification describes two embodiments wherein "devices" making the storage			

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			
	4	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).			
		A 36 0005 B 1			
		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			İ

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Language	Constituction	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).	Construction	Evidence	Construction
		Col. 6, Il. 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)			

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).		* *	
		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.").			
		100 0011 010			
		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			

		Special Master's Proposed			
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").			
1		Hetwork server).			
		Crossroads' Concise	·		
		Statement of			
		Infringement, Dot Hill			
		Litigation (Case No. A-			
		03-CV-754 SS), Fore			
		Decl. ISO Pl.'s Post-Hr'g			1
		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			į.
		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); <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	4.3		
		involving network			1

Actual Claims Crossroads' Proposed Crossroads' Defendants' Proposed Defendants' Special Master's							
Language	Construction	Evidence	Construction	Evidence	Construction		
		protocols" is superfluous	N. A.				
		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).					
		A: 1 29 2011 2 1 5					
		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).		·			
		co a network protocoly.		ļ			
		February 22, 2011 Decl.					
		of John Levy, Ph.D., ¶¶					
		31, 33 (NLLBPs do not					
		have the overhead					
		associated with the use					

	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 higher level protocols to access storage); <i>Id.</i> ¶ 34 (specification describes network servers communicating with storage using NLLBPs).							
Claim 29:	1412004-111000		The latest and the	Marie Tolkinski (m. 1888)	2.553.555 (B. C. 1984) - 5.54				
The method of claim 28, further comprising maintaining a configuration wherein the configuration includes a map between the device and the one 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, 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	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
		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	4 F.		
		"maintaining a			* -
		configuration" to mean			
		"keeping a modifiable			
		set of information").			
The method of claim 28,	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
urther comprising			_		Necessary.
naintaining a	"Computing device that	Intrinsic:	Computer.		
onfiguration wherein	issues storage access				
he configuration	requests."	Claim 1, Col. 9, 11. 27-30			
ncludes a map between		("devices" refers to the			
he device and the one		devices that make			
torage device, and		requests and are allowed		un proprieta	
urther wherein the map		access to storage			
ncludes virtual LUNs		devices).			
hat provide a		0.1.1.11.26.27.0.1.2			
representation of the		Col. 1, 11. 36-37; Col. 2,			
storage device.		ll. 4-5; Col. 4, ll. 55-56;			i

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	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, 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-	Construction	Evidence	Construction		

		45-55; Col. 8, Il. 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		
		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		
		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		
		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		
		workstations, input/output devices, "initiator" and "target" devices). April 6, 2005 Reply to Office Action at 8, 10, 12, 22, Fore Decl. ISO		
		input/output devices, "initiator" and "target" devices). April 6, 2005 Reply to Office Action at 8, 10, 12, 22, Fore Decl. ISO		
		"initiator" and "target" devices). April 6, 2005 Reply to Office Action at 8, 10, 12, 22, Fore Decl. ISO		
		devices). April 6, 2005 Reply to Office Action at 8, 10, 12, 22, Fore Decl. ISO		
		April 6, 2005 Reply to Office Action at 8, 10, 12, 22, Fore Decl. ISO		
		Office Action at 8, 10, 12, 22, Fore Decl. ISO		
		Office Action at 8, 10, 12, 22, Fore Decl. ISO	4	
		12, 22, Fore Decl. ISO		
		i Ciossidaus i ost-ili e		
		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		
1		ordinary skill would		
		understand that in the		
		embodiments at Col. 6,		
		21	13	

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's 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.			
		Decl. of John Levy,	.		
		Ph.D., ¶3 (a "network			
		server" is a server that			
		can request access to	1		
		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
		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			·
1		to computers functioning			
		as workstations on the			
		network").	·		
		Special Master's Report			·
]		at 22, Dot Hill			
1		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 30:					ger-mus-
The method of claim 29,	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction Necessary.
wherein the map only				•	Necessary.
exposes the device to	"Computing device that	Intrinsic:	Computer.		•
LUNs that the device	issues storage access				
may access.	requests."	Claim 1, Col. 9, Il. 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, Il. 36-37; Col. 2,			
	-	11. 4-5; Col. 4, 11. 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, 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 ").			
		device).			
	,	Claim 3, Col. 9, 11. 37-39			
	*	(principles of claim			
		differentiation require			
		"devices," as a group,			
		must necessarily be			
		broader than "workstations").	·		
		workstations).			
		Col. 6, Il. 31-41, 46-56			
		(the specification			
		describes "servers" as a			
		type of computing			
		21	6		
		41	O .		

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants' Evidence	Special Master's Construction
Language	Construction	Evidence	Construction	Evidence	Construction
		device that can make			
		storage access requests).			
		A1-4-4-6-1-1-11-01			
		Abstract, Col. 1, Il. 21-24, Il. 36-37, Il. 53-56;			
		Col. 2, Il. 4-6; Col. 3, Il.			
		3-6, 41-43; Col. 4, ll. 38-			
		42, 11. 55-56 Col. 6, 11.			
		45-55; Col. 8, 11. 65-68			
	and the second s	("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			
	1	refer to types of devices			
	·	capable of making			
		requests for 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	
		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.				
		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	
Language	Construction	Evidence	Construction	Evidence	Construction	-
		May 11, 2011 3d Supp.				Case 1:10-cv-00652-SS
		Decl. of John Levy,				Se
		Ph.D., ¶3 (a "network				
		server" is a server that				
		can request access to)-C
		storage).				<
		M:				
		Microsoft Computer	<u>.</u> .			O
	·	Dictionary 430 (3d Ed.				Ŋ
		1997), May 11, 2011 3d				U
		Supp. Decl. of John				
		Levy, Ph.D., Ex. A				
		(defining "server" as "(1) on a local area			-	CC
		network (LAN), a	·			Ē
					·	e
		computer running administrative software				<u> Document 167-17</u>
		that controls access to				0
		the network and its				<u> </u>
		resources, such as				_
		printers and disk drives,				L
		and provides resources			·	ļ.
		to computers functioning	·			ă
		as workstations on the				20
	·	network").				_
		Special Master's Report				9
		at 22, Dot Hill				Filed U8/10/11
		Litigation, Pl.'s Cl.				- 1
		Const. Hr'g Ex. P-15				a
		(Court previously				e
		construed "storage				7
		router" as "a data				Page ZU of ZU
		transmitting device that	·			_
		allows users to integrate				C
		different servers or				
		workstations into a				

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		storage network").			
Claim 31:				5.54-E 1 C	
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 physical LUN of the storage device.	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" 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: "Map"; otherwise indefinite.	See claim 1, supra.	No Construction Necessary.
		configuration wherein the configuration includes a map" would be meaningless under Defendants' proposed 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
NA A		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").			
Claim 32: The method of claim 28, further comprising partitioning storage space on the storage device into virtual local storage for the device.	Device: "Computing device that issues storage access requests."	Device: Intrinsic: Claim 1, Col. 9, Il. 27-30 ("devices" refers to the devices that make requests and are allowed access to storage devices). Col. 1, Il. 36-37; Col. 2, Il. 4-5; Col. 4, Il. 55-56; Col. 8, Il. 65-68 (the specification describes the devices that make requests to access the	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
		"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 ").			
		device j.			
		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, ll. 4-6; Col. 3, ll.			
		3-6, 41-43; Col. 4, ll. 38-	. "		
		42, Il. 55-56 Col. 6, Il.			
		45-55; Col. 8, 11. 65-68			
		("devices" is used			
	·	broadly to refer to	·		
		various computing			
		devices such as			1

Claims uage	Crossroads' Proposed Construction	Crossroads' Evidence 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	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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			
		Crossroads' Post-Hr'g			
1		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			
		reexamination prosecution history to refer to types of devices capable of making			
		Extrinsic:			
		Decl. of John Levy, Ph.D., ¶ 4 (one of ordinary skill would understand that in the			
		Il. 33-41; 46-56, it is the server that sends requests for storage			
			("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, Il. 33-41; 46-56, it is the server that sends	("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, Il. 33-41; 46-56, it is the server that sends requests for storage access to the storage	("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, Il. 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
gg	Compa action	The McGraw-Hill Illustrated Dictionary of Personal Computers 126	Constitution	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).			
		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, 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").			
laim 33:					Fried - Transport
ne method of claim 32,	Device:	Device:	Device:	See '035 patent, claim 1.	No Construction
rther comprising					Necessary.
eventing the device	"Computing device that	Intrinsic:	Computer.		
om accessing any	issues storage access				
orage on the storage	requests."	Claim 1, Col. 9, Il. 27-30			
vice that is not part of		("devices" refers to the			
virtual local storage		devices that make		}	
rtition assigned to the		requests and are allowed			
evice.		access to storage			
		devices).			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
			·		
		Col. 1, Il. 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").	<u> </u>		
		computing devices).			
		Col. 1, 1l. 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").			
		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).			
		Alexander C. 1 1 11 21			
		Abstract, Col. 1, ll. 21-24, ll. 36-37, ll. 53-56;			
		24, II. 30-37, II. 33-30,	<u> </u>		<u> </u>
		22	26		

		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, 1l. 4-6; Col. 3, 1l. 3-6, 41-43; Col. 4, 1l. 38-42, 1l. 55-56 Col. 6, 1l. 45-55; Col. 8, 1l. 65-68			
		("devices" is used broadly to refer to various computing			
e T		devices such as workstations, input/output devices,			
		"initiator" and "target" devices). April 6, 2005 Reply to			İ
		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			

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		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. 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			
	1	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").			
	in in the second	storage network).			-
im 34:				and the second of the second o	
ystem for providing	Configuration:	Configuration:	Configuration:	See claim 1, supra.	No Construction
rtual local storage,	Conngulation.	Configuration.	Conngulation.	see ciam 1, supra.	Necessary.

	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.			h
	a storage device remote		Col. 2, Il. 19-23; Col. 5,			·	b)
	from the host device,		11. 53-54; Col. 6, 11. 58-				ñ
	wherein the storage		64 (describing				<u> -</u>
	device has a storage		"configuration" as			*	6
	space;		information used to				1:10-cv-00652-SS
	a first controller;		control operation of the	,			<u>}</u>
	a second controller;		storage router and which				ğ
	a first transport medium		is modifiable).		·		5
	operable according to a						-
	Fibre Channel		'147 Patent: Col. 2, 11.	·			Š
	protocol, wherein the		28-32; Col. 9, 11. 36-41				Ц
	first transport medium		("configuration" can also				8
	connects the host		include mapping				2
C	device to the first		information and				₿
2	controller;		additional information,				Đ.
354 OT	a second transport		such as information				Document 167-19
ا	medium operable		needed to "implement[]				67
3/3	according to the Fibre		access controls").			·	드
•	Channel protocol,						9
	wherein the second		Claim 15, Col. 11, ll. 23-				Щ.
	transport medium		28 (the limitation				₩.
	connects the second		"operable to maintain a				Ď.
	controller to the		configuration wherein	•			8
	storage device;		the configuration				Eiled 08/10/11
	a supervisor unit coupled		includes a map"				K
	to the first controller	·	would be meaningless				-
	and the second		under Defendants'				Н
	controller, the		proposed construction).				Page
	supervisor unit						ፙ መ
	operable to: maintain a		Extrinsic:				-
	configuration that						of 10
	maps between the host		Chaparral Markman				10
		I		1		1	1

Special Master's Proposed Construction of Disputed Terms

device and at least a

portion of the storage

space on the storage

Order at 16, Fore Decl.

ISO Crossroads' Cl. Const. Br., Ex. L (parties

	·		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
ľ	device; and		to earlier action agreed	¥		
l			to construe "maintain a			
l			configuration" to mean			
			"keeping a modifiable			
			setting of information");	·		
			February 22, 2011 Decl.	• .		
l		4	of John Levy, Ph.D., ¶46		·	
			(person of ordinary skill			
l			would understand			
١			"maintaining a			
١			configuration" to mean			
			"keeping a modifiable		·	
			set of information").			
I	implement access	Access control(s):	Access control(s):	Access controls:	See '035 patent, claim 1.	"Controls which limit a
١	controls according to					device's access to a
١	the configuration for	"Controls which limit a	Intrinsic:	Controls that use a map		specific subset of storage
i	the storage space on	device's access to a		to permit a particular		specific subset of storage devices or sections of a single storage device according to a map."
	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,		
l			embodiment in which all	and to prevent the device		
l			workstations can access	from reading data to or		-
l			global storage device).	writing data from		
l				storage space assigned to		
			Col. 4, 11. 7-11 ("access	other devices.		
			controls" applies to	·		
			shared storage).	T .	g ""	
			T-1- 22 2005 D11-	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	Downit wooding and		
			Cl. Const. Br., Ex. F	Permit reading and		
			(discussion during	writing of data in the		
			reexamination, that the	native low level, block		
l			"access controls" feature	protocol of the storage	· ·	

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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	Native:	Intrinsic:	Does not need to be		information and do not
the storage device	"Designed for use with a		separately construed;		involve the overhead
using native low level,	specific type of storage	Abstract, Col. 1, ll. 44,	alternatively, may be		information and do not involve the overhead of high level protocols and file systems typically required by network servers."
block protocol.	device."	Col. 2, ll. 13-14, 26; Col.	construed with reference		and file systems
		3, ll. 17, 22-23, 53, 63;	to individual terms as		and the systems
	Block Protocol:	Col. 4, Il. 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, 1. 10;	Native:		
	information with a	Col. 10, ll. 48-49	Designed for use with a		
	block-oriented storage	(specification	specific type of storage		
	device."	consistently uses "NLLBP" as a single	device.		
3	Low Level	term).	Low-level protocol:		
357 of 373	Protocol:		A set of rules or		
ير	"A set of rules or	Fig. 1; Col. 3, Il. 20-23	standards that enable		
3	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, Il. 49-54;	protocols or file system		
	Block Protocol:	Col. 3, Il. 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	l .	L	

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			
	10	(storage router "allow[s]			
		access from devices			
		connected to the first			
		transport medium to the	. 1		
		storage devices using			
	•	native low level, block			·
		protocols" (emphasis			
		added); the storage	į		
		router, specifically, the	·		
		supervisor unit within			·
		the storage router, "uses"			,
		the NLLBP to permit or			
		enable access).			
		A1-4	No.		
		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, II. 9-11			
		(specification discloses			
		that NLLBPs are used			
	•	by, and at, the storage			
		router to allow access).			
	+ . ·	i router to allow access).			
		Col. 6, Il. 33-41, 46-56			
	The second second second	(specification describes			
		two embodiments			
		wherein "devices"	* .		
		making the storage			
		access request are			

	String the string of the strin		Construction of Disputed 7		
Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
		servers).			
		April 6, 2005 Reply to			
		Office Action at 10-11,			and the second s
		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			
	1	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-			
		1	·		
		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			

			Construction of Disputed T		
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).			
		G-1 2 11 17 20 G-1 5			
		Col. 2, 11. 17-20; Col. 5,			
		Il. 19-22, 50-57, 60-63; Col. 6, Il. 32-37; '147	-		
		Patent, Claim 1, Col. 9,			
		11. 28-32 (disclosing and			
		claiming embodiments	·		
	1	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 embodiments).			
		Col. 5, ll. 53-56 (Fibre	·		The state of the s

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed To Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		Channel is a protocol			
		used for communications			
		over "Fibre Channel			
		based networks").			
		Col. 1, Il. 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, 1l. 31-41, 46-56			
		(specification has two			
		distinct embodiments in	·		
		which the "devices"	·		
		making storage requests			
		are servers).			
		and the second second			
		Extrinsic:			**
		March 7, 2011 Supp.	·		
		Decl. of John Levy,	·		
		Ph.D., ¶2; March 7, 2011	·		
		Decl. of Brian Berg ¶42			
		(experts agree that	1.		
		"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)	* .		
					1

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	İ		
		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			1

Actual Claims	Crossroads' Proposed	Crossroads'	Construction of Disputed To Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
0 0		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").	·		
		G			
		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)).			

		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
		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); <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			
	<u> </u>	protocols" is superfluous			

Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	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	1.00		***************************************
		protocols).			The state of the s
	•				
		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).			
		protosory.	·		
		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			

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Actual Claims	Crossroads' Proposed	Crossroads'	Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		to access storage); <i>Id.</i> ¶ 34 (specification describes network servers communicating with storage using NLLBPs).			
Claim 35:			1144 - 1145 - 1145 - 1145 - 1145 - 1145 - 1145 - 1145 - 1145 - 1145 - 1145 - 1145 - 1145 - 1145 - 1145 - 1145	Haff to the state of the state	
The system of claim 34, wherein the supervisor	Configuration:	Configuration:	Configuration:	See claim 1, supra.	No Construction Necessary.
unit is further operable to:	"A modifiable setting of information."	Intrinsic:	"Map"; otherwise indefinite.		
maintain a	miormation.	Col. 2, Il. 19-23; Col. 5,	macimite.		
configuration that		11. 53-54; Col. 6, 11. 58-	,		
maps from the host		64 (describing	-		
device to a virtual		"configuration" as			
representation of at		information used to			
least a portion of the		control operation of the	·		
storage space on the storage device to the		storage router and which is modifiable).			
storage device; and		is modifiable).			
allow the host device to		'147 Patent: Col. 2, 11.			
access only that portion		28-32; Col. 9, Il. 36-41	*		
of the storage space		("configuration" can also			
that is contained in the		include mapping			
map.		information and			
		additional information,			
		such as information needed to "implement[]	-		
		access controls").			
		access controls).			
•		Claim 15, Col. 11, II. 23-			
		28 (the limitation			
		"operable to maintain a			
		configuration wherein			
		the configuration			
		includes a map"	·		

			Special Master's Proposed	Construction of Disputed	Terms		
	l Claims guage	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction	
			would be meaningless under Defendants' proposed construction).				Case
			Chaparral Markman Order at 16, Fore Decl. ISO Crossroads' Cl. Const. Br., Ex. L (parties to earlier action agreed to construe "maintain a				Case 1:10-cv-00652-SS
367 of 373			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				Document 167-20
Claim 36:			configuration" to mean "keeping a modifiable set of information").				Filed 08/10/11
	of claim 35,	Configuration:	Configuration:	Configuration:	See claim 1, supra.	No Construction	<u> </u>
wherein the		"A modifiable setting of information."	Intrinsic:	"Map"; otherwise indefinite.	,,	Necessary.	1
ID to a virturepresentati storage dev physical LU storage dev	ual LUN on of the ice to a JN of the		Col. 2, Il. 19-23; Col. 5, Il. 53-54; Col. 6, Il. 58-64 (describing "configuration" as information used to				Page 4 of 10
			control operation of the storage router and which is modifiable).				

Actual Claims Language	Crossroads' Proposed Construction	Crossroads' Evidence	Defendants' Proposed Construction	Defendants' Evidence	Special Master's Construction
Danguage	Construction	Evidence	Constituction	Evidence	Construction
		'147 Patent: Col. 2, II.			
	1	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, Il. 23-	·		
		28 (the limitation			
		"operable to maintain a			
		configuration wherein	170		
		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 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	Crossroads' Proposed	Crossroads'	Construction of Disputed ' Defendants' Proposed	Defendants'	Special Master's
Language	Construction	Evidence	Construction	Evidence	Construction
		configuration" to mean "keeping a modifiable set of information").			
Claim 37:					entral and a second a second and a second and a second and a second and a second an
The system of claim 34, wherein the storage device further comprises storage space partitioned into virtual local storage for the host device.	[No claim term at issue]		[No claim term at issue]		
Claim 38:		1000000 10000 1		Fall age 1 age 1 ag	93 4 (4) 124 145 14
The system of claim 37, wherein the supervisor unit is further operable to prevent the host device from accessing	[No claim term at issue]		[No claim term at issue]		
any storage on the storage device that is not part of a virtual local storage partition					
assigned to the host device.		Andrew Applied Company of the Compan			
Claim 39:	Property of the Comment of the Comme	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Access to the second	
The system of claim 37, wherein the supervisor unit is further operable to prevent the host device from accessing any storage on the	[No claim term at issue]		[No claim term at issue]		
storage device that is not part of a virtual local storage partition assigned to the host					

TABLE OF CITATION ABBREVIATIONS

Abbreviation	Document(s)	Date	Exhibit No, or Range
	Joint Ma	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 Pleadir	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. Levy Ex.	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 posthearing 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' Pleadin	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 Ex Parte 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 Crossroads v. Postvision (W.D. Tex. case 1:10-cv-00652-SS)	5/20/2010	Def. Ex. 16