R15



xSeries Education

IBM @server BladeCenter Boot from SAN Lab



© International Business Machines Corporation, 2004 All rights reserved.

IBM reserves the right to change specifications or other product information without notice. This publication could include technical inaccuracies or typographical errors. References herein to IBM products and services do not imply that IBM intends to make them available in other countries. IBM provides this publication *as is*, without warranty of any kind—either expressed or implied—including the implied warranties of merchantability or fitness for a particular purpose. Some jurisdictions do not allow disclaimer of expressed or implied warranties. Therefore, this disclaimer may not apply to you.

Data on competitive products is obtained from publicly obtained information and is subject to change without notice. Please contact the manufacturer for the most recent information.

The following terms are trademarks or registered trademarks of IBM Corporation in the United States, other countries or both: Active Memory, Active PCI, Alert on LAN, Asset ID, AT, the e-business logo, EasyServ, Enterprise X-Architecture, EtherJet, HelpCenter, HelpWare, IBM RXE-100 Remote Expansion Enclosure, IBM XA-32, IBM XA-64, IntelliStation, LANClient Control Manager, Memory ProteXion, NetBAY3, Netfinity, Netfinity Manager, NetVista, PC 300, Predictive Failure Analysis, RXE Expansion Port, ScrollPoint, SecureWay, ServeRAID, ServerProven, ServicePac, SMART Reaction, SMP Expansion Module, SMP Expansion Port, TechConnect, ThinkLight, ThinkPad, ThinkPad Proven, ThinkPad UltraCarbon, TrackPoint, Ultrabay, UM Services, Universal Manageability, Update Connector, ViaVoice, Wake on LAN, WorkPad, WorkPad Proven, XceL4 Server Accelerator Cache, XpandOnDemand scalability.



IBM Corporation Subsidiaries:

Lotus, Lotus Notes, Domino, and SmartSuite are trademarks of Lotus Development Corporation. Tivoli and Planet Tivoli are trademarks of Tivoli Systems, Inc.

LLC, Adobe, and PostScript are trademarks of Adobe Systems, Inc. Intel Celeron, LANDesk®, MMX, Pentium II, Pentium III, Pentium 4, SpeedStep, and Xeon are trademarks or registered trademarks of Intel Corporation. Linux is a trademark of Linus Torvalds. Microsoft Windows® and Windows NT® are trademarks or registered trademarks of Microsoft Corporation. Other company, product, and service names may be trademarks or service marks of others.

For more information: www.ibm.com/legal/copytrade/phtml



Preface

This publication is primarily intended for use by students enrolled in the IBM @server BladeCenter[™] Boot from SAN hands-on lab.

This document represents a training technique developed for and used by IBM and is not for sale. Portions of this document, such as foils, charts, and quizzes, may be copied and distributed if required to conduct a class properly. The instructor should exercise good judgment on handouts of this type. The complete document cannot be copied for or sold to non-IBM personnel.

Please write your name and address below to personalize your copy.

Issued to Address	
Current valassa data	August 2004
Current release date.	August 2004
Current release level:	Version 1
Supported lab release levels:	Version 1
Filename:	ibm eserver bladecenter boot from san lab
Test number for this guide is	N/A

The information contained within this publication is current as of the date of the latest revision and is subject to change at any time without notice.

Please forward all comments and suggestions regarding the course material format and content to your local IBM @server xSeries Education country coordinator or contact.

© International Business Machines Corporation, 2004 All rights reserved



Table of Contents

Preface		4
Table of Con	tents	5
Safety Precau	itions and Housekeeping	6
General Sa System Sa	afety Guidelines fety	6 7
Introduction	to the Student Lab Guide	8
Introduction Limitation	on s	8 8
IP Address C	hart	9
Lab 1. – Boot	ing the Blade from a SAN	12
Part I. Part II. Part III. Part IV. Part V. Part VI. Part VII. Part VIII. Interface (Part IX. Part X.	Installing Storage Manager 8.x Connecting to the Controllers Using Direct Management Resetting and Naming the Storage Server (optional). Creating Arrays and Logical Drives. Defining Storage Partitions. Creating Zones and Zone Sets in the FCSM. Configuring the Fibre Channel Switch Module (Optional). Viewing the Fibre Channel Switch Module via the Graphical Optional). Configuring the HS20 Blade Server Configuring the Fibre Channel Daughter Card.	12 12 13 15 18 23 34 39 45 48
Part XI. Part XII. Troublesh	Configuring a Single path to the Storage Server Installing Windows 2003 Server on the External Disks ooting	59 61 62



Safety Precautions and Housekeeping

General Safety Guidelines

- **1.** Maintain good housekeeping in the area of the machines during and after completing maintenance/configuration.
- 2. Do not use solvents, cleaners, or oils that have not been approved by IBM.
- **3.** Lift by standing or pushing up with stronger leg muscles to take the strain off back muscles. Do not attempt to lift any parts or equipment with which you feel uncomfortable. Service personnel are responsible for making certain that no action on his or her part renders a product unsafe or exposes the customer to hazards.
- **4.** Place removed machine covers in a safe out-of-the-way location while servicing the machine. These covers must be back in place on the machine before the machine is returned to the customer.
- **5.** Always place tool kits away from walk areas where no one can trip over them (for example, under a desk or table).
- **6.** Avoid wearing loose clothing that may be caught in machinery. Shirt sleeves must be left buttoned or rolled up above the elbow. Long hair and scarves must be secured.
- 7. Remove all watches and rings before removing the cover of any system.
- **8.** When servicing a machine, ties must be tucked into shirt or a tie clasp (preferably non-conductive) must be worn approximately three inches from the end.
- **9.** Before starting equipment, make sure that other service or customer personnel are not in a hazardous position.

Do not place books, tools, or test equipment on top of the machine.



System Safety

Before beginning any of the lab projects, please review the following safety guidelines:

- **1.** Turn off your display, remove all diskettes from the diskette drive, and unplug the power cord to the system unit before attempting to remove the covers from the system.
- 2. Use the electrostatic device kit (one should have been provided for your lab group) to minimize the risk of damage to electronic components inside the system. Please ask your instructor for assistance if you do not know how to use an ESD kit.

Note: Avoid touching the internal electronic components unless you are specifically requested to do so within a lab exercise.



Introduction to the Student Lab Guide

Introduction

These lab projects are designed to teach you the skills that have been introduced in the previous topics. In the lab activities, you will practice installing and operating server systems by using the documentation and maintenance philosophy for the systems.

Limitations

- 3. No computer game playing or copying of games is allowed in this class.
- 4. Do not copy diskettes on any of the systems in the lab.
- 5. Do not write on or exchange diskettes with another system.
- 6. No beverages are allowed at your workstation when the covers are off.
- **7.** You will be expected to practice the proper ESD procedures while performing maintenance on IBM systems.



IP Address Chart

The IP Address of this resource is	IP Address
Management Machine FAStT Management LAN	
Management Machine BladeCenter Management LAN	
BladeCenter Management Module 1	
BladeCenter Management Module 2	
BladeCenter Ethernet Switch Module 1	
BladeCenter Ethernet Switch Module 2	
BladeCenter Fibre Channel Switch Module 1	
BladeCenter Fibre Channel Switch Module 2	
FAStT Storage Controller A	
FAStT Storage Controller B	
User ID for BladeCenter Modules	
Password for BladeCenter Modules	

Obtaining the Host Port Identifier / World Wide Name / Adapter Port Name:

- ____1. Boot the desired Blade Server using the HS20 power button.
- ____2. During the boot process, press Ctrl+Q when prompted to enter the Fibre Channel Daughter Card BIOS configuration option.
- ____3. Select the first Host Adapter listed in the BIOS, this card will correspond to the Switch in module bay 3.

	QLogic Fast!UT	IL Version 1.24	
	Select Hos	t Hdapter	
	Adapter Type	I/O Address	
	QLA23xx	2400	
	QLA23xx	2600	
Use (Arrow keys	s> to move cursor, <em< th=""><th>ter> to select option, <</th><th>(Esc> to backup</th></em<>	ter> to select option, <	(Esc> to backup



____5. Obtain the Adapter Port Name of the adapter and record it below.



Record the Host Port Identifier / World Wide Name / Adapter Port Name here:

- **6.** Press Esc to return to the Fast!UtilOptions screen.
- ____7. Select Select Host Adapter.

IBM @s	erver xSeries Education
IBM @server x\$ 8.	Series – IBM @server BladeCenter™ Boot from SAN Select the 2 nd Host Adapter and press Enter.
9.	Select Configuration Settings.
10.	Obtain the Adapter Port Name of the adapter and record it below.
11.	Press Esc once to return to the Fast!UtilOptions screen.
12.	Select Exit Fast!Util.

Record the Host Port Identifier / World Wide Name / Adapter Port Name of the second adapter here:

This concludes this section.



12

IBM @server xSeries – IBM @server BladeCenter™ Boot from SAN

Lab 1. – Booting the Blade from a SAN

Part I. Installing Storage Manager 8.x

- **1.** Open a command prompt and type **ping** and the IP address of each RAID controller to check the IP connections. See the IP Address Chart on page 9 for the IP Addresses you should use.
- ____2. Locate the FAStT Client Code for Microsoft Windows Server 2003 IA-32 installation folder (C:\Program Files\IBM\FAStTCode_WS03_32b\IBM FAStT Storage Manager 8.4 for Windows 2003 (32 Bit)\SM8clientcode\SMclient).
- **3.** Run the installation program "SMclient-WS32-0840G504.exe"
- ____4. The Installation Wizard begins. Follow the on-screen instructions selecting the default selections.

Part II. Connecting to the Controllers Using Direct Management

- **1.** Start Storage Manager (Start \rightarrow All Programs \rightarrow IBM FAStT Storage Manager).
- **____2.** When you are prompted for Automatic Discovery, click < Yes>.
- **3.** If no devices are skip to the Troubleshooting section on page 62.

🌐 IBM FAStT Storage Manager 8 (Enterprise Ma	nagement)			
<u>E</u> dit <u>V</u> iew <u>T</u> ools <u>H</u> elp				
				IBM TotalStorage
🚇 management	Name	T Status	Network Management Type	Comment
🖃 📲 Directly-Managed Storage Subsystems	≺unnamed>	🔛 🔷 Optimal	Direct Network Attached	
Storage Subsystem <unnamed></unnamed>				
Launched Subsystem Managemer	, nt Window for ≺	unnamed>		



Part III. Resetting and Naming the Storage Server (optional).

In this section you will reset the Storage Server and assign a name so that it can be distinguished from other Storage Server in the Fabric.

Note:	Resetting the Storage Server is done is this environment to erase what previous
	students have done. This is not necessarily an action you would take to
	configure a Storage Server in a production environment.

- **1.** Locate the Storage System icon under your host in the right pane of the Enterprise Management window.
- ____2. Right-click on the Storage Subsystem icon and choose <Manage Device>.



3. From the Storage Subsystem menu, choose <Configuration>, then <Reset>.



- **4.** In the **Reset Configuration** dialog box, type **yes**, then click <OK>.
- **5.** From the Storage Subsystem menu, choose <Rename>.

歸 FastT700 - IBM FAStT Storage Manag	jer (Subs	system Mana	gement)			_ D ×
Storage Subsyste <u>m</u> Vie <u>w</u> Mappings	<u>A</u> rray <u>I</u>	<u>L</u> ogical Drive	<u>C</u> ontroller	<u>D</u> rive	<u>H</u> elp	
Locate 🕨						
Configuration	e Vion	1				
Premium Features	SVICW	Physica	al			1
Recovery Guru		-Cont	troller Enclos	euro —		
Monitor Performance	(B)	A				5
Download 🕨			-			二 単日
Change 🕨	1					•
Set Controller Clocks		Drive	e Enclosure I	0		
Redistribute Logical Drives		1] @ @ @	
Run Read Link Status Diagnostics				(GEO (GE	3 633 633 633	· • •
Rename						
Exit						
	-					
		•				
88		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		F	Partitions Allow	/ed/Used: 0/0

6. Type a name that corresponds to your RAID controller, or type another name of your choosing.

This concludes this section.



Part IV. Creating Arrays and Logical Drives.

____1. Right-click <Unconfigured Space> then click <Logical Drives>.



- **2.** In the Default Host Type window, <Windows 2000 Non-Clustered>.
- **3.** From the Create Logical Drive Wizard Introduction screen, fill in the radio button for Unconfigured capacity (create new array), and then click <Next>.



IBM 傻	server xSeries Education	@ 5011
IBM @server	xSeries – IBM @server BladeCenter™ Boot from SAN	
4.	Select <raid 1=""> from the drop-down menu <next>.</next></raid>	I. Select <2> drives and click

🗉 Guasta Lagical Driva I	Winned Coocify A	way Davamators		V
Ereate Logical Drive	wizard - Speciry A	rray Parameters		<u>×</u>
Because you spec	cified unconfigured	l capacity from the previous	screen, you must indicate the	
RAID level and ove	erall capacity of the	e new array. You specify the	exact capacity for the individual	
logical drive on the	e next screen.			
Create new array				
RAID level:	RAID 1	-		
Drive colection shois	RAID 5			
Onve selection choic	RAID 3	a citic o falvius o		
 Automatic - selec 	RAID 1	acilies/drives		
O <u>M</u> anual - select yo		apacity		
Array Capa	acity	Drives	Channel Protection	
33.862 GB	2		Yes	
67.725 GB	4		V Yes	
		r Dook	Nasta Canad Hal	.
		<u> </u>		h

- **___5.** Change the capacity to **10 GB**.
- **6.** Name the logical drive **10 GB DRIVE**.
- **7.** Fill in the radio button for **Customize Settings**, and click <Next>.

🚟 Create Logical Drive Wizard - Specify Logical Drive Parameters	×
Now you must specify the various parameters for an individual logical drive. From the capacity you previously allocated, indicate exactly how much of that capacity you want to use for the logic drive.	al
RAID level of array: 1 Maximum logical drive capacity allowed: 33.862 GB	
New logical drive capacity:	
Name (30 characters maximum): 10 GB Drive	
Advanced logical drive parameters:	
O Use recommended settings	
○ <u>C</u> ustomize settings	
< <u>B</u> ack <u>F</u> inish Cancel <u>H</u> e	elp



IBM @server xSeries – IBM @server BladeCenter™ Boot from SAN 8. Click <Finish>.

- **9.** At the Create Logical Drive Wizard Creation Successful screen, click <No>.
 - __10. At the Create Logical Drive Wizard Completed screen, click <OK>.



This concludes this section.



Part V. Defining Storage Partitions.

To define storage partitions in SM8 the Storage Partitioning Premium Feature must be enabled.

Note:	To determine if Storage Partitioning is enabled click \leq Storage Subsystem, \rightarrow
	Premium Features, \rightarrow List>.

- **Note:** If storage Partitioning is *not* enabled then skip to the Troubleshooting section on page 62.
 - **1.** On the Storage Manager Subsystem Management screen, click on the </br/>
 Mappings View> tab, and click <OK> to accept the mapping information.
 - **___2.** The following screen (or similar) should appear.



3. Next, click <Mappings \rightarrow Define \rightarrow Host>.



IBM @server xSeries Education	@serve
IBM @server xSeries – IBM @server BladeCenter™ Boot from SAN	
4. Type the name of your server, click <add></add>	and then click <close>.</close>



____5. Default Group now contains the host name you added. Right-click on the name of the host you just added, then click on <Define Host Port>.

🚟 FAStT 700 - IBM FAStT Sto	rage Manager (Si	bsyst	em Mana	gement)				_ 🗆 🗵
Storage Subsyste <u>m</u> Vie <u>w</u>	<u>M</u> appings <u>A</u> rray	Logic	al Drive	$\underline{C} ontroller$	<u>D</u> rive	<u>H</u> elp		
8 🖉 🖱 🗉								
🙀 Logical/Physical View	🎁 Mappings View							
Topology			Defined	l Mappings				
🚟 Storage Subsystem FAStT	700		Logica	l Drive Nam	e Acces	ssible By	LUN Logical Drive Capac	city Type
E-F			🔓 Acc	ess	Defau	ilt Group	31	Acc
Default Group	_							
🔚 🖥 Host Blade01 🛛								
	Define Host Po	t						
	Define Storage	Partitic	ning					
	Define Addition	al Map	ping					
	Move			1				
	Delete			1				
	Rename							
00							Partitions Allowed/U	sed: 64/0

- **6.** From the drop-down menu, select the appropriate Host Port Identifier. If your host port identifier is not present, you may need to type it. See page 10 for your host port identifier.
- **7.** In Host Type, select <Windows 2000 Non-Clustered>, and set the Host port name to <*hostname_HBA1>*. (Replace *hostname* with the name of your server).

IBM @server xSeri	es Education	@serve
BM @server xSeries – IBM @ser	rver BladeCenter™ Boot from SAN	
	Define Host Port	
	Make sure you define all host ports for this particular host. Host. Blade01 Host port identifier (16 characters): 210000096b3663f0 Host type: Windows 2000 Non-Clustered Host port name: Blade01_HBA1 Add Close Help	

- **Note:** Make sure that the **Host port identifier** is one of the HBAs in the server you are working with.
 - **8.** Click <Add>.

Next, define the second host port for this host.

- **1.** From the drop-down menu, select the appropriate Host Port Identifier. If your host port identifier is not present, you may need to type it. See page 10 for your host port identifier.
- **2.** In Host Type, select <Windows 2000 Non-Clustered>, and set the Host port name to < *hostname*_HBA2>. (Replace *hostname* with the name of your server).

Define Host Port	×
Make sure you define all host ports for this particular host.	
Host: Blade01	
Host port identifier (16 characters):	
210000096b3663f1	
Host type:	
Windows 2000 Non-Clustered	
Host port name:	
Blade01_HBA2	
Add <u>C</u> lose <u>H</u> elp	

- **3.** Click <Add>, and then click <Close>.
- **___4.** From the Mappings menu, choose <Define \rightarrow Additional Mapping>.



- **____5.** Select the host group or host (<Host *hostname*> of your server).
- **6.** From the list of drives available, select the <10 GB drive>, and set the Logical Unit Number to <0>. Click <Add>.

📰 Define Additional Mapping	X				
Select a host group or host, logical unit number (LUN), and logical drive to create a logical drive-to-LUN mapping.					
Host group or host:					
Host Blade01					
Logical unit number (LUN) (0 to 31):					
Logical Drive Name Logical Drive Capacity	7				
Access					
10 GB Drive 10GB					
, , , , , , , , , , , , , , , , , , ,					
<u>A</u> dd <u>C</u> lose <u>H</u> elp					

- **7.** Click <Close>.
 - **8.** Right click the Host (Host *hostname* of your server) to select it.

21



9. Right click the Access Logical Drive which is LUN 31 and Select <Delete>.



- **10.** Click <Yes> to answer the "Are you sure you want to delete this drive-to-LUN mapping?" question.
 - **_11.** Close all Storage Manager Windows.

This concludes this section.

IBM	<i>eserver</i>	xSeries	Education
-----	----------------	----------------	-----------



Part VI. Creating Zones and Zone Sets in the FCSM.

- ____1. Launch the BladeCenter SAN Utility installation program. It is located in the C:\software\BladeCenter SAN Utility directory.
- **2.** Follow the on-screen instructions, taking the default selections until the application is installed.
- **____3.** Click Start \rightarrow All Programs \rightarrow BladeCenterSANUtility \rightarrow BladeCenterSANUtility.
- ____4. The first step is to add a fabric. Click the Add icon Add
- ____5. Enter the IP Address of the Fibre Channel Switch Module and the User ID and Password. The IP Address of the Fibre Channel Switch Module, User ID and Password are found on page 9.

🚪 Add a New Fabric - IBM	BladeCenter(TM) SAN Ut 🗙
Add a New Fabric	
Fabric View Name:	
IP Address:	
Login Name:	
Password:	
Add Fabric	Close

___6. You should see a **Topology** window that looks similar to what is shown below.



- ____7. Double click the Fibre Channel Switch Module (FCSM) icon in the upper right frame.
- **8.** The BladeCenter SAN Utility shows a graphical representation of the BladeCenter Chassis and Fibre Channel Switch Module.

	BM Blade	Lenter(II	M) SAN I	Jtility - Fa	aceplate							
File	Fabric	Switch	Port	Zoning	⊻iew <u>H</u> e	elp						
	□_*	6		Ŵ	2							
	Add	Open	Save	Refres	h Help	Zoning						
FC	Fabrics	1		FCSN	d.							
0	10.10	1 1 2 9			Normal							
	- 🛤 F0	SM			Normai							
									8 S 10 F F F	11 12 F F	13 14 F F	
				D	ev	Switch	Port	Address	Type	Noc	e WWN	PortW
				1	FC	SM)	010000	N-Port	20:04:00:a0	1:b8:0c:ce:00	20:04:00:a0:b8
				2	F	SM	1	010100	N-Port	20:00:00:09	:6b:36:63:f0	21:00:00:09:6k
				3	F	SM	2	010200	N-Port	20:00:00:09	1:6b:36:7c:a4	21:00:00:09:6k
												•
				Nam	e Server	Switch	Port Stats	Port Info	Configured	Zonesets	Alarm Log	
				1.1								<u> </u>

Note:Blade Servers with Fibre Channel Daughter Cards have a green status icon
below the corresponding blade server. In this example, Blade Servers one and
tow have Fibre Channel Daughter Cards. Your BladeCenter many have different
placement of the Fibre Channel Daughter Card and you may have more or fewer
Fibre Channel Daughter Cards than depicted here._____9.Click the Configured ZoneSets icon at the bottom of the window.Configured Zonesets



Note: The Orphan Zone Set is created by default. No other Zone Sets should be present. If other zone sets are present, continue to step 10. If the Orphan Zone set is the only Zone set, or if there are no Zone Sets, go to step 13.

_10. From the Zoning menu, select Restore Default Zoning.



- **____11.** At the warning, click OK to continue.
- **12.** The BladeCenter SAN Utility informs you that the default zoning has been restored.



____13. From the Zoning Menu, select Edit Zoning...

IBM @server xSeries Education	@ ^{serth}
IDM BladeCenter(TrM) SAN Utility - Faceplate File Fabric Switch Port Add Open Save FC Fabrics P 101101128 Destrictive Zone Set P 101101128 Destrictive Zone Set P 010101128 Destrictive Zone Set P 2 010101128 Destrictive Zone Set P 2 010101128 P 2 010101128	
Name Server Switch Port Stats Port Info Configur	ed Zonesets Alarm Log

____14. We do not want to use the Orphan Zone Set for our Boot From SAN Zone. The Orphan Zone set is a placeholder for Zones that are not in a Zone Set. We will create a new zone by clicking the Zone Set icon.



___15. Type a name for your zone set. "SANBoot" was used to create this document.

📕 Create a Zone Set - IBM BladeCenter(TM) S					
	Zone Set Name		1		
			_		
	<u>о</u> к	Cancel			

- _____16. Click the Zone icon. Zone
- _____17. Enter the name of the zone. Here we use the name of the Blade Server as the name of the zone. To create this document, "Blade01" was used as the zone name. Click OK once a name for the zone has been entered.

🚪 Create a Zone - IBM BladeCenter(TM) 5 🗴				
Zone Name				
ок	Cancel			
<u></u>	<u></u>			

IBM	@server	xSeries	Education
-----	---------	----------------	-----------



27

IBM @server xSeries – IBM @server BladeCenter™ Boot from SAN

- **____18.** Click the recently appeared Expand/Collapse icon next to your zone set. You should see the zone that you just created. This zone has no members so we will add the members now.
- **____19.** Click your zone to select it.



____20. In the right pane, click the icon for **Domain:1 Port#0**.



Note: Ports zero and fifteen are the external ports, ports 1 through 14 correspond with the Blade Server bays.



- 21. Click the Insert icon. Insert
- ____22. This port is now in your zone. Notice the change in font for Domain:1 Port#0. Also notice that your zone now has an Expand/Collapse icon. If you like, you can expand the zone and see that Port#0 is in the zone.

F۴

- ____23. Click Domain:1 Port#1 to select it. You can click the Insert icon as you did previously, or you can drag and drop Port#1 to your zone.
- **24.** Once **Domain:1 Port#1** has been added to your zone, expand your zone and confirm that there are two ports in the zone: the external port that leads to the Fibre Channel Storage Server and the port on the Daughter Card in one of your Blade Servers.
- **____25.** Click Apply.
- **____26.** The information dialog box indicates that the zoning information has been saved. Click OK.
- **____27.** Click OK to exit the Edit Zoning window.

Save View File

- ____28. From the Zoning Menu, select Activate Zone Set...
- **29.** Make sure that your Zone set is selected. Click Activate.

Activate Zone Set - IBM	1 BladeCenter(TM) SA 🗙
Select Zone Set SAN	lBoot 🔻
Activate	<u>C</u> ancel

- **30.** The information dialog box indicates that your zone is now active. Click OK.
- ____31. From the File menu, select Exit then click Exit Without Saving.
 Save Default Fabric File IBM BladeCenter(TM) SAN Utility
 A password is required to encrypt information to be stored
 in a default fabric view file.
 Default File Password:

Cancel Exit

Exit Without Saving

IBM @server xSeries	Education
---------------------	-----------



IBM @server xSeries – IBM @server BladeCenter™ Boot from SAN Creating a zone set in the second switch.

____1. Click the Add icon.

🚦 Add a New Fabric - IBM B	ladeCenter(TM) SAN Ut 🗙
Add a New Fabric	
Fabric View Name:	
IP Address:	
Login Name:	
Password:	
I	
Add Fabric	Close

- **2.** In the IP Address field, enter the IP Address of the second Fibre Channel Switch Module and click Add Fabric.
- ____3. You should see a **Topology** window that looks similar to what is shown below.
- **4.** Double click the Fibre Channel Switch Module (FCSM) icon in the upper right frame.
- **5.** The BladeCenter SAN Utility shows a graphical representation of the BladeCenter Chassis and Fibre Channel Switch Module.



IBM	@server xSeries Education
IBM @sei	ver xSeries – IBM @server BladeCenter™ Boot from SAN Click the Configured ZoneSets icon at the bottom of the window. Configured Zonesets
Note:	The Orphan Zone Set is created by default. No other Zone Sets should be present. If other zone sets are present, continue to step3. If the Orphan Zone set is the only Zone set, or if there are no Zone Sets, go to step6.

___3. From the Zoning menu, select Restore Default Zoning.

📕 I E	M Blade	Center(TN	1) SAN	Utility - I	Facepla	te					_ 8 ×
<u>F</u> ile	Fabric	Switch	Port	Zoning	View	Help					
	.	6		<u>E</u> dit Zo	ning						
	Add	Open	Save	Edit Zo	ning <u>C</u> o	nfig Set	ng				
FC	Fabrics	1		Deacth	e zone vate Zor	sel Ie Set					
ę (0 10.10.	1.129		Restor	e Defau	It Zoning					
				¢ Z	ione Set	I 2 F F S	3 4 5 F F F			13 14 F F	
				Nar	me Serv	er Switc	h Port Stats	Port Info	Configured Zonesets	Alarm Log	
											🔜 \$ 💳

- **4.** At the warning, click OK to continue.
- **5.** The BladeCenter SAN Utility informs you that the default zoning has been restored.



6. From the Zoning Menu, select Edit Zoning...

M @server xSeries Education	C ^{set}
BB BladeCenter(IN) SAN Unity - Faceplate Boot from Control Boot from Control File Fabrics Edit Zoning Internet Control Internet Control Add Open Save Edit Zoning Internet Control FC Fabrics Point Control Internet Control Internet Control Point Control Edit Zoning Internet Control Internet Control Point Contro	
Name Server Switch Port Stats Port Info Configured Zonesets Alarm Log	

7. We do not want to use the Orphan Zone Set for our Boot From SAN Zone. The Orphan Zone set is a placeholder for Zones that are not in a Zone Set. We will create a new zone by clicking the Zone Set icon.



8. Type a name for your zone set. "SANBoot" was used to create this document and click OK.

Create a Zone Set - IBN	1 BladeCenter(TM) S 🗴
Zone Set Name	
<u>O</u> K	Cancel

____7. Click your newly created Zone Set to select it.



- **9.** Click the Zone icon. **Zone**
- **10.** Enter the name of the zone. Here we use the name of the Blade Server as the name of the zone. To create this document, "Blade01" was used as the



zone name. Click OK once a name for the zone has been entered.

<u>C</u> ancel

- **11.** Click the recently appeared Expand/Collapse icon next to your zone set. You should see the zone that you just created. This zone has no members so we will add the members now.
- **12.** Click your zone to select it.

13. In the right pane, click the icon for **Domain:1 Port#0**.





- ____14. Click the Insert icon. Ins
- **15.** This port is now in your zone. Notice the change in font for Domain: 1 Port#0. Also notice that your zone now has an Expand/Collapse icon. If you like, you can expand the zone and see that Port#0 is in the zone.
- **16.** Click Domain:1 Port#1 to select it. You can click the Insert icon as you did previously, or you can drag and drop Port#1 to your zone.
- **17.** Once **Domain:1 Port#1** has been added to your zone, expand your zone and confirm that there are two ports in the zone: the external port that leads to the Fibre Channel Storage Server and the port on the Daughter Card in one of your Blade Servers.

IBM @se	erver xSe	eries Ec	lucation
---------	-----------	----------	----------



IBM @server xSeries – IBM @server BladeCenter™ Boot from SAN _____18. Click Apply.

- **19.** The information dialog box indicates that the zoning information has been saved. Click OK.
- **20.** Click OK to exit the Edit Zoning window.
- _____21. From the Zoning Menu, select Activate Zone Set ...
- **22.** Make sure that your Zone set is selected. Click Activate.

Activate Zone Set - IB	M BladeCenter(TM) SA 🗙
Select Zone Set SA	NBoot 🔻
Activate	Cancel

- **23.** The information dialog box indicates that your zone is now active. Click OK.
- **24.** From the File menu, select Exit then click Exit Without Saving.

Save Der	ault Fabric File - 16M bladecenter(1M) SAN Utility	
	A password is required to encrypt information to be stored in a default fabric view file.	
Save	Default File Password:	

This concludes this section.



Part VII. Configuring the Fibre Channel Switch Module (Optional).

Enable the I/O Stream Guard for the internal ports of the switch and disable it for the external ports.

Note:	With the firmware version 1.38 on the Fibre Channel Daughter Card, this
	procedure is not necessary. Check with your instructor before performing this
	procedure as it may not be necessary depending on the firmware level of the
	Fibre Channel Daughter card.
	procedure as it may not be necessary depending on the firmware level of the Fibre Channel Daughter card.

Note:	This procedure is not performed on the Fibre Channel Switch Module from
	Brocade. Check with your instructor before performing this procedure as it may
	not be necessary depending which Fibre Channel Switch Module is installed in the BladeCenter.

____1. Connect to the switch by opening a command prompt and typing telnet 192.168.1.129 and then press Enter.





2.

Use the standard login user id and password. If they haven't been changed they will be USERID and PASSWORD.



_3. Type ADMIN START and then press Enter.



____4. Type CONFIG EDIT and then press Enter.



[1][Sat Jan 16 21:04:10.000 1988][A4101][0xdd01b9f7.329][cmon: unable to set g w addr] FCSM: USERID> ADMIN START FCSM (admin): USERID> CONFIG EDIT FCSM (admin-config): USERID>

_5. Type SET CONFIG PORTS and then press Enter.

Alarms history ...

Note: This will set the configuration of all switch ports external and internal.



6. Keep pressing ENTER until you reach the I/O Stream Guard line.

____7. Type "ENABLE" and press Enter. This will enable all ports.



specified at t	the command line or port #0 will follow.		-
If you wish to	terminate this process before reaching the	end of the	
list press 'q'	'or 'Q' and the ÊNTER key to do so.		
Configuring Al	L norts (displaying values from nort number:	ดว	
0d=i=Ctata	(1-Opling 2-Offling 2-Discreption 4-Deve)	[0-1	
LinkSpeed	(1=1Ch/s = 2=2Ch/s = 3=0uto)		1
PostTune	(TL / GL / G / F / FL / Donow)	IGL	i l
TLPortMode	(1=TLTargetMode, 2=TLInitiatorMode)	[TLTargetMode]	i 👘
ISLSecurity	(Any / Ours / None)	[Any	1
ALFairness	(True / False)	[False	1
ARB_FF	(True / False)	[False	1
InteropCredit	(decimal value, 0-255)	[0]]
ExtCredit	(dec value, increments of 11, non-loop only)	[0]	1
FANEnable	(True / False)	ITrue]
LCFEnable	(True / False)	[False]	1
MFSEnable	(True / False)	ITrue]
MFS_TOU	(decimal value, 10-20480 msec)	[10	1
MSEnable	(True / False)	ITrue]
NoClose	(True / False)	[False	
IOStreamGuard	(Enable / Disable)	[Disabled	I ENA
LED_			

- **8.** Press ENTER until you return to the FCSM (admin-config): USERID prompt.
- **9.** Save the configuration by typing "CONFIG SAVE" then press Enter.
- ____10. Type "CONFIG ACTIVATE" then press Enter.
- ____11. Press "Y" to activate the configuration and then press Enter.
- ____12. Type "SET CONFIG PORT 0" and press Enter.

Note:	Ports zero (0) and fifteen (15) are the external ports. Ports one (1) through
	fourteen (14) are internal ports. We are going to disable I/O Stream Guard for
	ports zero and 15.

- **13.** Press ENTER until you reach the I/O Stream Guard line.
- ____14. Type "DISABLE" then press Enter.
- **____15.** Press ENTER until you reach the (admin-config): USERID prompt.
- ____16. Type "SET CONFIG PORT 15" then press Enter.
- **____17.** Press ENTER until you reach the I/O Stream Guard line.
- **____18.** Type "DISABLE" then press Enter.
- **19.** Save the configuration by typing "CONFIG SAVE" then press Enter.

IBM @server xSeries Education	C Server
IBM @server xSeries – IBM @server BladeCenter™ Boot from SAN	

20. Type "CONFIG ACTIVATE" then press Enter.

🗪 Telnet 192.168.70.	129		- O ×				
ARB_FF InteropCredit ExtCredit FANEnable LCFEnable MFSEnable MFS_TOU MSEnable NoClose	<pre>(True / False) (decimal value, 0-255) (dec value, increments of 11, non-loop only) (True / False) (True / False) (True / False) (decimal value, 10-20480 msec) (True / False) (True / False)</pre>	[False [0 [1] [7] [7] [7] [7] [7] [7] [7] [7] [7] [7					
10StreamGuard able VIEnable CheckAlps	(Enable / Disable) (True / False) (True / False)	LEnabled [False [False	J dis]]				
Finished configuring attributes. This configuration must be saved (see config save command) and activated (see config activate command) before it can take effect. To discard this configuration use the config cancel command.							
FCSM (admin-config): USERID> config save							
FCSM (admin): US	SERID> config activate						
The configurat	ion will be activated. Please confirm (y/n):	: [n] _					

- **21**. Press "Y" to activate the configuration and then press Enter.
- ____22. Type Quit and press Enter.
- **23**. Connect to the second switch by opening a command prompt and typing telnet 192.168.1.130 and then press Enter
- **24.** Repeat steps 2 through 22 on the second switch.
- **____25.** Close the Command Prompt Window.

This concludes this section.



Part VIII. Viewing the Fibre Channel Switch Module via the Graphical Interface (Optional).

To ensure that the settings implemented via telnet are applied, ensure that the I/O stream guard value is set on Disable also on the GUI interface of the two switches.

- **1.** Start \rightarrow All Programs \rightarrow BladeCenter SAN Utility
- **____2.** Select Add.

IBM BladeCenter(TM) SAN Utility	- 🗆 🗵
File Fabric View Help	
Add Open Save Refresh Help	
FC Fabrics	
IBM BladeCenter(TM) SAN Utility	≞ ≒ —

3. Type the IP address of the Fibre Channel Switch Module.

IBM @server xSeries Education	@server
IBM @server xSeries – IBM @server BladeCenter™ Boot from SAN	

🚦 Add a New Fabric - IBN	1 BladeCenter(TM) SAN Ut 🗙
Add a New Fabric	
Fabric View Name:	
IP Address:	192.168.70.129
Login Name: Password:	
Add Fabric	Close

____4. Once the system recognizes the switch module, it will show the active ports available and their relative WWN node and Port Numbers.

E I	BM Blade	Center(Ti	M) SAN	Utility - Topo	logy						_ 🗆 ×
File	Fabric	Switch	View	Help							
	-*	6		Ċ.	2						
	Add	Open	Save	Refresh	Help						
FC	Fabrics	1									
0- (> 192.1	68.70.129							FCSM Normal		
				Dev	Swite	h	Port	Address	Туре	Node WWN	Port
				1	FCSM	0		010000	N-Port	20:04:00:a0:b8:0c:ce:00	20:04:00:a0:1
				2	FCSM	5		010500	N-Port	20:00:00:09:6b:36:40:30	21:00:00:09:0
				1000							
											Þ
				Name S	erver Act	ive Zone	eset	Switch Link			
<u> </u>											

- ____5. In this case external port 1 on the Fibre Channel Switch Module (also known as port 0) and port 1 for the HS20 Blade server with the Fibre Channel Daughter Card are displayed.
- **___6.** Double click the FCSM icon in the top pane.



	BM Blade	Center(T	M) SAN U	Jtility - Face	plate							
<u>F</u> ile	Fabric	Switch	Port	Zoning <u>V</u> ie	ew <u>H</u> elp							
		9		à	2	2.5						
		Onen	Save	Refresh	Hein	Zoning						
	ний	-		- Terresin	пер	Loning						
F FC	C Fabrics		,	FCSM								
₽	0 192.1	68.70.129)	No 📃 No	rmal							
		<u>28M</u>			F	2 3 F F	A S F F	6 7 F F		11 12 F F	13 14 F F	
				Dev	S	witch	Port	Address	Туре	Noc	de WWN	Port
				1	FCS	M C)	010000	N-Port	20:04:00:al	0:b8:0c:ce:00	20:04:00:a0:t
				2	FCS	M 1		010100	N-Port	20:00:00:0	9:60:36:40:30	21:00:00:09:8
										8888		•
				Name S	Server	Switch	Port Stats	Port Inf	Configure	d Zonesets	Alarm Log	
												<u></u> ;t

____7. Right-click the active external port and select "Port Properties"



8. Ensure that the I/O Stream Guard as disabled (which we did earlier in this lab).



Port Properties - IBM BladeCenter(TM) SAN 👂
Symbolic Name: FCSM Selected Port: Ext 1:0
Port States: Online O offline O test
Port Speed: auto-detect C 1 Gb C 2 Gb
Port modes: F-port FL-port TL-port G-port GL-port Donor
TL Modes: TL Target O TL Initiator
E-Port BB Credits: 0 [0 - 255] * For default BB credit setting, enter zero.
I/O Stream Guard: O Enable Disable [RSCN Suppression]

____9. Ensure that the I/O Stream Guard as disabled (which we did earlier in this lab).

10. Click the "Port Info" tab. **Port Info**

- ____11. Click the Port Icon the BladeServer with the Fibre Channel Daughter Card. In this example, it is Blade 1.
- **12.** In the bottom pane, scroll down to I/O Stream Guard. It should be enabled.

Note:	I/O Stream Guard is Disabled on the external ports to stop this traffic from going
	to the Storage Server, and I/O Stream Guard is Enabled on the internal ports to
	allow this communication between the BladeServers.
13.	Select File \rightarrow Exit.

IBM @server xSe	eries Education	
IBM @server xSeries - IBM @	ഉserver BladeCenter™ Boot from SAN	
14. Select Exi	t without Saving.	
🚦 Save De	fault Fabric File - IBM BladeCenter(TM) SAN Utility	×
	A password is required to encrypt information to be stored in a default fabric view file.	
	Default File Password:	
Save	View File Exit Without Saving Cancel Exit	

This concludes this section.





Part IX. Configuring the HS20 Blade Server

Access the Blade Server's BIOS by pressing F1 during boot. 1. IBM Setup - (c) Copyright IBM Corporation 2002 Configuration/Setup Utility System Summary System Information Devices and I/O Ports Date and Time
 System Security Start Options Advanced Setup Error Logs Save Settings Restore Settings Load Default Settings Exit Setup Help <t><1> Move <F1> <Esc> Exit <Enter> Select

- ____2. Select Devices and I/O Ports.
- ___3. If your HS20 has the optional SCSI attachment, change the Plannar SCSI to Disabled. If you are not sure if you have the optional SCSI attachment, please ask the instructor.





<u> </u>	
Note: Ensure that the Daughter Card	sEnabled.

- ____4. Select the IDE Configuration Menu.
- ____5. Disable the Primary IDE connection and Secondary IDE connection.



- **___6.** Press Esc twice to return to the main menu.
- ____7. Select Start Options
- **8.** Select Startup Sequence.
- **9.** Ensure that these devices are listed in the following order:

Device	Startup Order
CD-Rom	First Startup Device
Diskette Drive 0	Second Startup Device
Hard Disk 0	Third Startup Device
Network	Fourth Startup Device

IBM @se	rver xSer i	ies Edu	catio	on			Q ^e
A @server xSe	eries – IBM @se	erver Blade(Center™	Boot from S	SAN		
Setup - (c) Copyright I	BM Corpora	tion 20	02			
	388888888888888888888888888888888888888	188888888888888888888888888888888888888	888888888888888888888888888888888888888	388888888888888888888888888888888888888	888888888888888888888888888888888888888		
		Startup Se	quence	Options		Ĩ	
	Primaru Stant	un Seguene	a :				
	First Startun	np sequenc Deuice	C •	E CD ROM		1	
	Second Startu	p Device		Diskette	Drive (o i	
	Third Startup	Device		[Hard Disl	k 0]	
	Fourth Startu	p Device 👘		[Network]	
	wake on Lnn						
	Wake on Lan S	tartup Seg	uénce :				
	First Startup	Device		[Network]	
	Second Startu	p Device 👘		[Diskette	Drive (0]	
	Third Startup	Device		E CD ROM]	
	Fourth Startu	p Device		[Hard Disl	k 0]	
<f1> Hel</f1>	υ <t><↓> Μ</t>	ove <>>	Next V	alue	<f9></f9>	Restore	Setting
<esc> Exi</esc>	t	< \	Previo	us Value	<f10></f10>	Default	Setting

- **____10.** Press Esc twice to return to the main menu
- ____11. Select Save Settings and then exit the BIOS configuration.

This concludes this section.



Part X. Configuring the Fibre Channel Daughter Card

Note: At this stage only the top Fibre Switch Module has connectivity to the FAStT Storage Server (typically we use controller A, however for purposes of this lab, your Fibre Switch Module could be connected to controller A or B, but not both).

- **1.** Boot the desired Blade Server using the HS20 power button.
- ____2. During the boot process, press Ctrl+Q when prompted to enter the Fibre Channel Daughter Card BIOS configuration option.

3. Select the first Host Adapter listed in the BIOS, this card will correspond to the Switch in module bay 3.

	QLogic Fast!UT	IL Version 1.24	
	Select Host	t Adapter 	
	Adapter Type	I⁄O Address	
	QLA23xx	2400	
	QLA23xx	2600	
Use (Arrow key	js> to move cursor, <ent< th=""><th>ter> to select option</th><th>, <esc> to backup</esc></th></ent<>	ter> to select option	, <esc> to backup</esc>

____4. Select Configuration Settings.



___5. Enable the Host Adapter BIOS.



6. Press Esc twice and Save the changes to return to the main Menu.

____7. Select Scan Fibre Devices and then press Enter.

IBM @server xSe	ries Education	@ serve
BM @server xSeries – IBM @	server BladeCenter™ Boot from Logic Fast†UTIL Version 1.24	
Selected Ad Adapter Type QLA23xx	lapter I/O Address 2400	
	Fact IITT Ontions	
	Configuration Settings	
	Scan Fibre Devices Fibre Disk Utility Loopback Data Test	
	Select Host Huapter Exit Fast!UTIL	
Use <arrow keys=""> to mov</arrow>	e cursor, <enter> to select</enter>	option, <esc> to backup</esc>

- **8**. What ID does the FAStT Storage Server have?
- ____9. Press Esc.
- ____10. Select Fibre Disk Utility.
- ____11. Select the IBM 1742 (or the device that you have) and then press Enter.

ID	Vendor	Product	Rev	Port Name	Port ID
128	No devic	e present			
<u>1</u> 29	IBM	1742	0500	200400A0B80CCI	201 010000
130	No devic	e present 👘			
131	No devic	e present 👘			
132	No devic	e present 👘			
133	No devic	e present 👘			
134	No devic	e present			
135	No devic	e present 👘			
136	No devic	e present 👘			
137	No devic	e present			
138	No devic	e present			
139	No devic	e present			
140	No devic	e present			
141	No devic	e present			
142	No devic	e present			
143	No devic	e present			
143		e present			a

_12. Select Verify Disk Media and then press Enter.

IBM @server xSe	eries Educat	ion		@ ^{serve}
3M @server xSeries – IBM @	eserver BladeCenter	■ Boot from SAN	٨	
Co lootod	Odanton			
Adapter Type	I/O Add	ress		
ULHZ3XX				
	Selected	Device		
ID LUN Vendor Pr 129 0 IBM 17	roduct R 742 O	ev Port Nar 500 200400A0B8	e Port ID 30CCE01 010000	
	Disk Utili	ty Options——		
	Low-level F Verifu Disk	ormat Media		
	Verify Disk Select Diff	Data erent Dick		
	Jelect Dill			
Use (Arrow keys) to r	•ove cursor, <ent< td=""><td>er> to select o</td><td>option, <esc> to b</esc></td><td>ackup</td></ent<>	er> to select o	option, <esc> to b</esc>	ackup

- ____13. Select Continue w/ Verify and then press Enter.
- **____14.** The Fast!UTIL begins verifying the disk.

QLogic Fast!UTIL Version 1.24	
Adapter Type I/O Address QLA23xx 2400	
Selected Device ID LUN Vendor Product Rev Port Name Port ID 129 0 IBM 1742 0500 200400A0B80CCE01 010000	
Verifying Disk Media Total number of blocks: 43B97FF Checking block number: 3F7800	



52

IBM @server xSeries – IBM @server BladeCenter™ Boot from SAN

Important:Do not wait for the entire process to complete. We are just ensuring that
there is a valid path from the Fibre Channel Daughter Card, through the
Fibre Channel Switch Module, through the Storage Server and to the drive
array.Once the verification process begins without error, we can end this test.

- **15.** Press Esc to stop the test.
- **16.** Press Esc to return to the Blade Server Qlogic Fast!UTIL menu and select Configuration Settings.
 - ____17. Select Selectable Boot Settings and enable the Selectable Boot.



____18. Select the (Primary) Boot Port Name, LUN and press Enter. This will bring you to the Select Fibre Channel Device.

IBM @server xS	eries Educatio	n	Q ^{SOTT}
IBM @server xSeries – IBM	@server BladeCenter™	Boot from SAN	
		51011.1.24	
Adapter Type	Hdapter I/O Address		
QLA23xx	2400	_	
	Selectable Boot	Settings	
Selectable B	oot:	Enabled	
(Primary) Bo	ot Port Name,Lun:		0
Bo	ot Port Name,Lun:		
Bo	ot Port Name,Lun:		
Bo	ot Port Name,Lun:	0000000000000000000,	•
Pr	ess "C" to clear a Bo	ot Port Name entry	
Use <arrow keys<="" td=""><td>> and <enter> to chan</enter></td><td>ge settings, <esc> to (</esc></td><td>exit</td></arrow>	> and <enter> to chan</enter>	ge settings, <esc> to (</esc>	exit

___19. Listed here you will find the Controller to which your HBA Adapter is connected on the FAStT Storage Server. Select it and press Enter.

ID	Vendor	Product	Re∨	Port	Name	Port ID
128	No devic	e present				
<u>1</u> 29	IBM	1742	0500	2004006	OB8OCCE01	010000
130	No devic	e present				
131	No devic	e present				
132	No devic	e present				
133	No devic	e present				
134	No devic	e present				
135	No devic	e present 👘				
136	∣No devic	e present 👘				
137	∣No devic	e present 👘				
138	∣No devic	e present 👘				
139	∣No devic	e present 👘				
140	∣No devic	e present 👘				
141	No devic	e present				
142	No devic	e present				
143	No devic	e present				

20. Your Selectable Boot Settings should show now the Controller Port Name, as shown in the picture here below.

server xSeries – IBI	M@server BladeCenter™ QLogic Fast!UTIL Ve	^M Boot from SAN rsion 1.24	
	Adapter	1	
QLA23xx	2400		
	Selectable Boo	t Settings	
Selectable	Boot:	Enabled	
(Primary) B	oot Port Name,Lun:	<u>2</u> 00400A0B80CCE01,	0
В	oot Port Name,Lun:		•
B	oot Port Name,Lun:		•
B	oot Port Name,Lun:	000000000000000000,	
Р	ress "C" to clear a B	oot Port Name entry	

- **21.** Press Esc twice to exit the Selectable Boot Settings and to exit the Configuration Settings Menu.
- **22.** Select "Save Changes" and then press Enter.
- **23.** Select the second host adapter listed in the BIOS, this card will correspond to the Switch in module bay 4.

그는 날 봐요? 물을 날	QLogic Fast!UTI	L Version 1.25	글 동물 아이가 집 것이다.
	Salact Hoet	Adapter	
	Adapter Type	I/O Address	
	QLA23xx DLA23xx	2400	
	Щыпалка	002	
Use (Arrow ke	ys> to move cursor, <ent< th=""><th>er> to select option</th><th>, (Esc) to backup</th></ent<>	er> to select option	, (Esc) to backup

__24. Select Configuration Settings.



___25. Enable the Host Adapter BIOS.



- **26.** Press Esc twice and Save the changes to return to the main Menu.
- **____27.** Press Esc to return to the Blade Server Qlogic Fast!UTIL menu and select Configuration Settings.
- **____28.** Select Selectable Boot Settings and enable the Selectable Boot.



29. Select the (Primary) Boot Port Name, LUN and press Enter. This will bring you to the Select Fibre Channel Device.

	QLogic Fast!UTIL	Jersion 1.25	
Adapter Type QLA23xx	en Haapter I/D Addre: 2600	35	
	Selectable B	oot Settings	
	e Boot: Poot Doot Nama Luni	Enabled	
(Primary)	Boot Port Name,Lun:		0
	Boot Port Name,Lun: Boot Port Name,Lun:		
	Press "C" to clear a	Boot Port Name entry	
Пре (Ясеры И	NON and (Enter) to c	NAME CETTING (Fre) to	ovit

____30. Listed here you will find the Controller to which your HBA Adapter is connected on the FAStT Storage Server. Select it and press Enter.

eserver xSeries	– IBM (⊘server Bla	adeCenter™ Bc	ot from SAI	N	
	감독한		QLogic Fas	t!UTIL Vers	sion 1.25	
	TD	Lindon	Select	Fibre Cham	nel Device	
	10	Venuor	Product	REO	PDFC Name	PDFt ID
	128	No devi	ce present			
	129	IBM	1742	0500	200500A0BB0CCE0	1 010000
	130	No devi	ce present		动脉动动脉 直线	
	131	No devi	ce present			
	132	No devi	ce present			
	133	No devi	ce present			
	134	No devi	ce present			
	135	No devi	ce present			
	136	No devi	ce present			
	137	No devi	ce present			
	138	No devi	ce present			
	139	No devi	ce present			
	140	No devi	ce present			
	141	No devi	ce present			
	142	No devi	ce present			
	143	Nn devi	ce present			

- Use (Arrow keys) to move cursor, (Enter) to select option, (Esc) to backup
- ____31. Your Selectable Boot Settings should show now the Controller Port Name, as shown in the picture here below.

200000000000000000000000000000000000000	QLogic Fast!UTIL V	ersion 1.25	000000000000000000000000000000000000000
salart:	ad Adanter	····	
Adapter Type QLA23xx	I/D Addres 2600	5	
	Selectable Bo	ot Settings	
Selectable	e Boot:	Enabled	
(Primary)	Boot Port Name,Lun:	200500A0BB0CCE01,	D
	Boot Port Name,Lun:		
	Boot Port Name,Lun:		<u> </u>
	Boot Port Name,Lun:		
	Press "C" to clear a	Boot Port Name entry	
lise (Arrow ka	and (Enter) to ch	ange settings. (Esc) to	evit

- **____32.** Press Esc twice to exit the Selectable Boot Settings and to exit the Configuration Settings Menu.
- **____33.** Select "Save Changes" and then press Enter.
- **____34.** Select Exit Fast!UTIL and then press Enter.
- **____35.** Select "Reboot Server" and then press Enter.

This concludes this section.





Part XI. Configuring a Single path to the Storage Server.

When initially configuring Remote boot, you should only have a single path of the Fibre Channel daughter-card configured to allow access to the Storage Server. Because a single Fibre Channel daughter-card found on the Blade Server has wired access to Switch Module slots 3 and 4, having the Storage Server cabled to both slots exposes multiple paths. To only offer a single path to the Storage Server prevents LUN access contention during the installation process. Otherwise, having multiple paths to the same LUN inhibits the Operating System's adequate detection of the proper storage boot device.

There are three ways to allow only a single path to the storage Server:

1. Remove the cable offering a second path to the Storage Server from the switch module in either Slot 3 or 4. (Note: This is discussed further in the Cabling recommendations section of this document). This is the simplest method, but it requires physical access to the BladeCenter Chassis or storage server. If Physical access to the equipment is not possible, other methods must be used.

2. Using the Storage Manager software, force the LUNs to either Controller A or Controller B of the storage Server. This will allow access to the LUN only from the intended controller. Using Controller A is preferable.

3. Disable the Fibre Channel switch module servicing access to Controller A or Controller B of the Storage Server. Using Controller A is preferable. This is the method that we discuss here.

In the steps below, we will use Option 3 to configure a single-path to the Fibre Channel Storage Server.

- ____1. Log in to the management module. See Appendix A. if you need explanation on connecting to the Management Module.
- **____2.** Under I/O Module tasks, select <Power/Restart>.
- ____3. Place a checkbox in the next to the Bay 4 switch module.



- **____4.** Click <Power Off Module(s)>.
- **____5.** Click <OK> to the "Are you sure you want to perform this action on selected module."
- **6.** In the Menu Pane, the left pane, click <Log Off>.
- ____7. Click <Yes> to allow the web browser window to close.

The 2nd Fibre Channel switch module is now off and there is only one path from the Blade Server to the Storage Server.

This concludes this section.



Part XII. Installing Windows 2003 Server on the External Disks.

Note:	You must have a floppy diskette with the BladeCenter Fibre Channel Expansion Card drivers.					
	Your instructor will provide this. These files can be downloaded from the Technical Support Site.					
Note:	During the POST sequence you will notice the following text					
	Drive letter C: is moved to the Drive letter D:					
	Loop ID 129,0 is installed as Drive C:					
	This indicates that the Blade is now booting from the LUN 0 associated to the first HBA adapter					

Broadcom NetXtreme Ethernet Boot Agent v3.1.15 Copyright (C) 2000–2002 Broadcom Corporation All rights reserved.	
QLogic Corporation QLA2312 PCI Fibre Channel ROM BIDS Version 1.29 Subsyste Copyright (C) QLogic Corporation 1993-2002. All rights reserv www.qlogic.com	em Vendor ID 1014 ved.
Press (CTRL-Q> for Fast!UTIL ISP2312 Firmware Version 3.01.12 QLogic adapter using IRQ number 3 QLogic adapter using IRQ number 9	
Drive Letter C: is Moved to Drive Letter D: LDDP ID 129,0 is Installed As Drive C:	
Device Device Adapter Port Lun Vendor Product Number Type Number ID Number ID ID BO Disk O 010F00 O IBM 1742 RDM BIOS Installed	Product Revision 0520

- ____1. With the Media Tray assigned to the HS20 that we are using and the Windows 2003 Server CD in the CD Drive, the Windows 2003 installation process will begin.
- ____2. When prompted, press F6 to add the IBM HS20 Fibre Channel Expansion Card as additional Mass storage Device.
- **____3.** Follow the on-screen instructions
- ____4. The process will then proceed as a standard installation.

This completes this lab.



Troubleshooting

If the Automatic Discovery feature of Storage Manager 8.x does not find any devices:

- ____1. From the Edit menu, choose <Add Device>.
- ____2. At the text insertion bar, enter the IP address of Controller A and click <Add>. Then enter the IP address of Controller B and click <Add>.
- ____3. Click on <Done>. Wait until the discovery process is terminated and identify your system connectivity.

To add premium features:

1. To enable Premium Features, click <Storage Subsystem \rightarrow Premium Features \rightarrow Enable>.



2. Next, select your Feature Key File and click <OK>.



Note: If you do not have access to a Feature Key File, contact your instructor for assistance.

This concludes this section.