

2600 and 2700 Series Marvell QLogic Fibre Channel Adapters 578xx and 41000 Series Marvell FastLinQ Intelligent Ethernet Adapters 578xx and 41000 Series Marvell FastLinQ Converged Network Adapters

User's Guide



Third party information brought to you courtesy of Dell.

Doc. No. TD-000965 Rev. 1 January 21, 2021



THIS DOCUMENT AND THE INFORMATION FURNISHED IN THIS DOCUMENT ARE PROVIDED "AS IS" WITHOUT ANY WARRANTY. MARVELL AND ITS AFFILIATES EXPRESSLY DISCLAIM AND MAKE NO WARRANTIES OR GUARANTEES, WHETHER EXPRESS, ORAL, IMPLIED, STATUTORY, ARISING BY OPERATION OF LAW, OR AS A RESULT OF USAGE OF TRADE, COURSE OF DEALING, OR COURSE OF PERFORMANCE, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.

This document, including any software or firmware referenced in this document, is owned by Marvell or Marvell's licensors, and is protected by intellectual property laws. No license, express or implied, to any Marvell intellectual property rights is granted by this document. The information furnished in this document is provided for reference purposes only for use with Marvell products. It is the user's own responsibility to design or build products with this information. Marvell products are not authorized for use as critical components in medical devices, military systems, life or critical support devices, or related systems. Marvell is not liable, in whole or in part, and the user will indemnify and hold Marvell harmless for any claim, damage, or other liability related to any such use of Marvell products.

Marvell assumes no responsibility for the consequences of use of such information or for any infringement of patents or other rights of third parties that may result from its use. You may not use or facilitate the use of this document in connection with any infringement or other legal analysis concerning the Marvell products disclosed herein. Marvell and the Marvell logo are registered trademarks of Marvell or its affiliates. Please visit www.marvell.com for a complete list of Marvell trademarks and guidelines for use of such trademarks. Other names and brands may be claimed as the property of others.

Copyright

Copyright © 2021. Marvell and/or its affiliates. All rights reserved.

Table of Contents

Preface

Supported Products	xvii
Using QConvergeConsole vSphere Plug-ins	xviii
Intended Audience	xix
What Is in This Guide	xix
Related Materials	XX
Documentation Conventions	xxi

Part I

QConvergeConsole VMware vCenter Server Plug-in

1	vCenter Server Plug-in Overview	
	Features	2
	System Requirements	3
	Hardware Requirements	3
	Software Requirements	4
	Supported Adapters	4
	Supported VMware ESX/ESXi and vCenter Server Versions	4
	User Privilege Requirements	5
2	Installing the vCenter Server Plug-in	
	Installation Package Contents	6
	Installing the vCenter Server Plug-in	8
	Uninstalling the vCenter Server Plug-in	14
	Installing the QLogic Adapter CIM Provider	14
	Initial Installation Methods	14
	Subsequent Update Installation	15
	Starting the QLogic Adapter CIM Provider	15
	Uninstalling the QLogic Adapter CIM Provider	16
3	Getting Started with vCenter Server Plug-in	
	Starting VMware vCenter Server Using the vCenter Server Plug-in	17
	Introduction to the vCenter Server Plug-in	20
	System Tree Pane	21

	Content Pane	22
	Enabling and Disabling the vCenter Server Plug-in	23
4	Using the vCenter Server Plug-in	
	Managing Hosts	25
	Viewing the Storage Map	26
	Viewing the Network Map	27
	Setting Fibre Channel Parameters	27
	Setting iSCSI Parameters	29
	Setting Ethernet Parameters	30
	Managing Fibre Channel Adapters	32
	Adapter Management Window	32
	Managing a Fibre Channel Adapter Port	33
	Boot Configuration—Fibre Channel Port	36
	Firmware Parameters—Fibre Channel Port	38
	Transceiver Information—Fibre Channel Port	39
	Statistics Information—Fibre Channel Port	41
	Diagnostic Tests—Fibre Channel Port	42
	Retrieving Adapter Information	45
	VPD Information—Fibre Channel Port	46
	Temperature Information—Fibre Channel Port	47
	QoS Information—Fibre Channel Port	48
	Managing Converged Network Adapters	49
	Managing a Converged Network Adapter	50
	Managing a Port on a Converged Network Adapter	51
	General Section	51
	Function Bandwidth Weight Assignment	51
	Managing NIC Functions on a Converged Network Adapter	52
	NPAR Configuration—NIC Function	54
	Firmware Parameters—NIC Function	57
	Statistics Information—NIC Function	58
	Diagnostics Tests—NIC Function	59
	DCBX Information—NIC Function	60
	DCBX TLV Information—NIC Function	61
	VPD Information—NIC Function	62
	Managing FCoE Functions on a Converged Network Adapter	63
	NPAR Configuration—FCoE Function	64
	Boot Configuration—FCoE Function	65
	Firmware Parameters—FCoE Function	66
	Transceiver Information—FCoE Function	67

Statistics Information—FCoE Function	68
Diagnostics Tests—FCoE Function	69
FCoE Configuration—FCoE Function	71
VPD Information—FCoE Function	75
Managing iSCSI Functions on a Converged Network Adapter	76
NPAR Configuration—iSCSI Function	77
Boot Configuration—iSCSI Function	78
Parameters—iSCSI Function	79
Statistics Information—iSCSI Function	82
Diagnostics Configuration—iSCSI Function	84
VPD Information—iSCSI Function	85
Viewing Target Device Information	86
Viewing LUN Information	87
Updating Adapter Flash	87
Menoning Mercell 579yy and 44000 Series Adeptors	

Managing Marvell 578xx and 41000 Series Adapters

Viewing Host Maps	89
Storage Map	90
Network Map	91
Managing 578xx/41000 Series Adapters	91
Adapter Information	92
Adapter Configuration	93
Adapter Commands: Updating Flash Firmware	94
Configuring the Flow Control, Protocol, and Bandwidth	94
Starting and Stopping the Adapter Temperature Monitor	95
QinQ Configuration	96
Viewing Port Information for 578xx/41000 Series Adapters	98
Configuring Port Boot Options	100
Configuring MBA Boot	101
Configuring iSCSI Boot	103
Configuring General Parameters	103
Configuring Initiator Parameters	104
Configuring Primary/Secondary Target Parameters	104
Configuring MPIO Parameters	105
Configuring FCoE Boot	106
Configuring General Parameters	106
Configuring Target Parameters	107
Configuring Link Settings	108
Running Adapter Port Diagnostics	109
Viewing Function Information for 578xx/41000 Series Adapters	110

Doc. No. TD-000965 Rev. 1

Copyright © 2021 Marvell

5

Viewing iSCSI Information for 578xx/41000 Series Adapters	113
Viewing Information for an iSCSI Target Connected to 578xx/41000 Series	
Adapters	115
Viewing Information for an iSCSI LUN Connected to 578xx/41000 Series	
Adapters	117

Part II

QConvergeConsole VMware vSphere Web Client Plug-in

7	vSphere Web Client Plug-in Overview	440
	Features System Requirements Hardware Requirements Software Requirements Software Requirements Software Requirements	119 120 120 120
		120
8	Installing the vSphere Web Client Plug-in	
	Installing the vSphere Web Client Plug-in	122 124
9	Getting Started with vSphere Web Client Plug-in	
	Starting the vSphere Web Client Plug-in	125 133
10	Using the vSphere Web Client Plug-in	
	Managing Hosts	134 134
	Viewing Driver Information	135
	Managing Adapters	130
	Updating the Eirmware Preload Table	139
	Undating the Firmware SerDes Table	140
	Configuring the Personality Type.	141
	Configuring SR-IOV Parameters	141
	Managing NIC (Ethernet) Ports	142
	Configuring NIC Port Ethernet Parameters	142
	Viewing NIC Port Statistics	143
	Retrieving NIC Port Debug Dump	143
	Managing Fibre Channel Ports	145
	Using the Fibre Channel Port Test Beacon	147

Configuring Fibre Channel Port Boot Parameters	147
Configuring Fibre Channel Port Parameters	148
Viewing Fibre Channel Port Transceiver Information	149
Viewing Fibre Channel Port Statistics	150
Running Fibre Channel Port Diagnostics	151
Loopback Test	152
Read-Write Buffer Test	152
Retrieve Firmware Debug	153
Fibre Channel Ping Tests	153
Viewing Fibre Channel Port VPD	154
Viewing Fibre Channel Port Temperature Information	155
Viewing Fibre Channel QoS Information	156
Managing Converged Network Adapter Ports	159
Managing NIC Functions	160
Configuring NIC Function NPAR	160
Configuring NIC Function NPAR Bandwidth	161
Configuring NIC Function NPAR Function Type	163
Displaying NIC Function eSwitch Statistics	163
Configuring NIC Function eSwitch Parameters	164
Configuring NIC Function Parameters.	166
Viewing NIC Function Statistics.	167
Running NIC Function Diagnostics	168
Running NIC Function Diagnostic Tests	168
Retrieving NIC Function Firmware Debug Dump	169
Viewing NIC Function DCBX Information	169
Viewing NIC Function DCBX TLV Information	170
Viewing NIC Function VPD	172
Managing FCoE Functions.	173
Configuring FCoE Function NPAR Function Type	174
Configuring FCoE Function Boot Parameters	175
Configuring FCoE Function Parameters	175
Viewing FCoE Function Transceiver Information	176
Viewing FCoE Function Statistics	177
Running FCoE Function Diagnostics.	179
Loopback Test.	179
Read-Write Buffer Test	180
Retrieve Firmware Debug	180
Ping Tests	181
Configuring the FCoE Function	182

Configuring the FCoE Function Primary FCF VLAN ID	182
Viewing FCoE Function DCB Information.	183
Viewing FCoE Function DCE Statistics	184
Viewing FCoE Function DCBX TLV Information	185
Viewing FCoE Function Temperature Information	186
Viewing FCoE Function VPD.	187
Viewing FCoE Function Target Information	189
Viewing FCoE Function LUN Information	190
Managing iSCSI Functions.	190
Configuring iSCSI Function NPAR Function Type	191
Configuring iSCSI Function Boot Parameters	192
Configuring iSCSI Function Parameters	193
iSCSI Function iSCSI and Firmware Settings.	193
iSCSI Function Network Settings	194
iSCSI Function IPv4 Parameters	195
iSCSI Function IPv6 Parameters	196
Viewing iSCSI Function Statistics	196
Running iSCSI Function Diagnostics.	198
iSCSI Function Ping Test	198
Retrieve iSCSI Function Firmware Debug Dump	199
Viewing iSCSI Function VPD.	199
Managing Marvell 578xx and 41000 Series Adapters	
Managing Hosts	201
Storage Map	202
Network Map	206
Managing 578xx/41000 Series Adapters	208
Adapter Information	209
Adapter Configuration	210
Configuring the Adapter Using the vSphere Web Client Plug-in.	210
Configuring the Adapter Using the HTML5 based vSphere Client	
Plug-in	212
Adapter Commands: Updating the Flash Firmware	214
Starting and Stopping the Adapter Temperature Monitor	215
QinQ Configuration	216
Viewing Port Information for 578xx/41000 Series Adapters	220
Configuring Port Boot Options	224
Configuring MBA Boot	225
Configuring iSCSI Boot	229
Configuring General Parameters	229

	Configuring Initiator Parameters	232
	Configuring Primary and Secondary Target Parameters	234
	Configuring MPIO Parameters	235
	Configuring FCoE Boot	237
	Configuring General Parameters	238
	Configuring Target Parameters	240
	Configuring Link Settings	242
	Running Adapter Port Diagnostics	244
	Viewing Function Information for 578xx/41000 Series Adapters	247
	Viewing iSCSI Information for 578xx/41000 Series Adapters	251
	Viewing Information for an iSCSI Target Connected to 578xx/41000 Series	
	Adapters	253
	Viewing Information for an iSCSI LUN Connected to 578xx/41000 Series	
	Adapters	254
Α	Installing the QLogic Adapter CIM Provider Using VUM	
В	Troubleshooting	
	CIM Provider Troubleshooting	257
	VMware vSphere Web Client Troubleshooting	257
	Windows Server 2016, Windows 2019, and Azure Stack HCI	258

Unable to view QConvergeConsole tab in vCenter Server Appliance.

C Revision History

Glossary

Index

258

List of Figures

Figure		Page
i	Managing an ESXi 6.0 Host Containing a FastLinQ or	
	Fibre Channel Adapter	xviii
ii	Managing an ESXi 6.0/6.5 Host Using the vSphere Web Plug-in	xviii
iii	Managing an ESXi 6.7/7.0 Host with a FastLinQ or Fibre Channel Adapter	
	Using the HTML5 Plug-in	xviii
1-1	Required Hardware	3
2-1	InstallAnywhere Initial Window	8
2-2	QLogic Adapter VI Plug-in Registration Wizard—Introduction	9
2-3	QLogic Adapter VI Plug-in—Configuration	9
2-4	QLogic Adapter VI Plug-in—Previous Version Found Options.	10
2-5	QLogic Adapter VI Plug-in—Select the Installation Folder	11
2-6	QLogic Adapter VI Plug-in—Installing the vCenter Server Plug-in	11
2-7	QLogic Adapter VI Plug-in—User Input Window	12
2-8	QLogic Adapter VI Plug-in—Configuration	13
2-9	QLogic Adapter VI Plug-in—Successful Registration.	13
3-1	vSphere Client Login Dialog Box	19
3-2	vCenter Server Plug-in User Interface	19
3-3	vCenter Server Plug-in User Interface	20
3-4	Plug-in Manager: Verifying vCenter Server Plug-in Status	23
3-5	Plug-in Manager: Toggling vCenter Server Plug-in Status	24
4-1	Host View—Storage Map	26
4-2	Host View—Network Map	27
4-3	Host View—Fibre Channel Parameters	27
4-4	Host View—iSCSI Parameters	29
4-5	Host View—Ethernet Parameters	30
4-6	Adapter Management for Fibre Channel Adapter	32
4-7	Adapter Management Window—Fibre Channel Port	33
4-8	Fibre Channel Port—Information Selection	34
4-9	Fabric-Assigned WWPN (50-00-53-37-E5-FB-F0-04)	35
4-10	D_Port Label on WWPN (FC_21-00-00-0E-1E-14-0E-90)	35
4-11	FEC Enabled on Port FC_21-00-00-0E-1E-08-C2-00	36
4-12	Fibre Channel Port—Boot Configuration	36
4-13	Fibre Channel Port—Firmware Parameters	38
4-14	Fibre Channel Port—Transceiver Information	39
4-15	Fibre Channel Port—Statistics Information	41
4-16	Fibre Channel Port—Diagnostics.	42
4-17	Fibre Channel Port—Ping Test Results	45
4-18	Fibre Channel Port—VPD Information	46
4-19	Fibre Channel Port—Temperature Information	47
4-20	Fibre Channel Port—QoS Information	48
4-21	Fibre Channel Port—Adding an Entry to the QoS Table	49
4-22	Adapter Management Window for Converged Network Adapter	50
4-23	Adapter Management Window for Converged Network Adapter Port	51

4-24	Adapter Management Window—PCI Function	52
4-25	Converged Network Adapter NIC Function—Information Selection	53
4-26	Converged Network Adapter NIC Function—NPAR Configuration	54
4-27	Bandwidth Configuration	55
4-28	Converged Network Adapter NIC Function 0 or 1—Function Type	56
4-29	Converged Network Adapter NIC Function 2 or 3—Function Type	56
4-30	Converged Network Adapter NIC Function—Firmware Parameters	57
4-31	Converged Network Adapter NIC Function—Statistics Information	58
4-32	Converged Network Adapter NIC Function—Diagnostic Tests	59
4-33	Converged Network Adapter NIC Function—DCBX and ETS Values	60
4-34	Converged Network Adapter NIC Function—DCBX TLV Data	61
4-35	Converged Network Adapter NIC Function—VPD Information	62
4-36	Adapter Management Window—FCoE Function	63
4-37	Converged Network Adapter FCoE Function—Information Selection	63
4-38	Converged Network Adapter FCoE Function—NPAR Configuration	64
4-39	Converged Network Adapter FCoE Function—Boot Configuration	65
4-40	Converged Network Adapter FCoE Function—Firmware Parameters	66
4-41	Converged Network Adapter FCoE Function—Transceiver Information	67
4-42	Converged Network Adapter FCoE Function—Statistics Information	68
4-43	Converged Network Adapter FCoE Function—Diagnostic Tests	69
4-44	FCoE Port—Ping Test Results	70
4-45	Converged Network Adapter FCoE Function—FCoE Attribute Information	71
4-46	Converged Network Adapter FCoE Function—FCoE Configuration	72
4-47	Converged Network Adapter FCoE Function—Data Center Bridging	72
4-48	Converged Network Adapter FCoE Function—DCE Statistics	74
4-49	Converged Network Adapter—DCBX TLV	74
4-50	Converged Network Adapter FCoE Function—VPD Information	75
4-51	Adapter Management Window—iSCSI Function	76
4-52	Converged Network Adapter iSCSI Function—Information Selection	76
4-53	Converged Network Adapter iSCSI Function—NPAR Configuration	77
4-54	Converged Network Adapter iSCSI Function—Boot Configuration	78
4-55	Converged Network Adapter iSCSI Function—General Parameters	79
4-56	Converged Network Adapter iSCSI Function—Statistics Information	82
4-57	Converged Network Adapter iSCSI Function—Diagnostics	84
4-58	Converged Network Adapter iSCSI Function—VPD Information	85
4-59	Adapter Management Window for Target Device	86
4-60	Adapter Management Window for Target Device LUN	87
5-1	Storage Map with 578xx/41000 Series Adapters	90
5-2	Network Map with 578xx/41000 Series Adapters	91
5-3	Adapter Management of Single-Function 578xx/41000 Series Adapters	92
5-4	Adapter Management of Multi-Function 578xx Series Adapters	93
5-5	Multi-Function Edit Dialog Box for 578xx Series Adapters	95
5-6	Temperature Page	96
5-7	QinQ Configuration Page	97
5-8	Port Information for 578xx/41000 Series Adapters	99

5_0	Port Information with DCBX Information	100
5_10	Boot Configuration Panel for MBA Parameters	100
5-10	isCSI Boot Configuration Pane for 578vy Series Adapters	102
5-12	ECoE Boot Configuration Panel	100
5-12		100
5 1/		100
5 15	Diagnostics Pane Test Posulte	110
5 16	Eulerion Information on 578vv//1000 Series Adapters	110
5 17	Function Ethornot Statistics on 578xx/41000 Series Adapters	110
5 10	isCSI Information on 578yy//1000 Series Adapters	112
5-10 5-10	iSCSI Information on 578xx/41000 Series Adapters	114
5-19	iSCSI Fortal Information of 578xx/41000 Series Adapters	110
5-20 5-21	iSCSI LUN Information on E79vv/41000 Series Adapters	110
0-21	SUST LUN Information on 578XX/41000 Series Adapters	117
9-1	Getting Started with vSphere Web Client Version 6.0	120
9-2	Getting Started with vSphere Web Client Version 6.5	126
9-3	Getting Started with vSphere Web Client Version 6.7	127
9-4		127
9-5		128
9-6		129
9-7	Host Getting Started Page	130
9-8	QConvergeConsole Page, vSphere Web Client 6.0	131
9-9	QConvergeConsole Page, vSphere Web Client 6.5/6.7	132
9-10	QConvergeConsole Page, HTML Based vSphere Web Client 6.5/6.7	132
10-1	Host View—Storage Map	135
10-2	Fibre Channel Driver Information	136
10-3	Fibre Channel Driver Parameters	137
10-4	Host View—Adapters	139
10-5	Managing NIC Ports	142
10-6	NIC Port Statistics	143
10-7	NIC Port Firmware Debug Dump	144
10-8	Fibre Channel Ports	145
10-9	Fibre Channel D_Port Indication	146
10-10	FEC Enabled on Port FC_21-00-00-0E-1E-08-C2-00	147
10-11	Fibre Channel Boot Parameters	148
10-12	Fibre Channel Port Parameters	149
10-13	Fibre Channel Port Transceiver Information	150
10-14	Fibre Channel Port Statistics	151
10-15	Fibre Channel Port Diagnostics	151
10-16	Fibre Channel Ping Test Results	154
10-17	Fibre Channel Port Vital Product Data	155
10-18	Fibre Channel Port Temperature Information	156
10-19	Fibre Channel Port QoS Service Information	157
10-20	QoS—Edit Priority	157
10-21	QoS Service—Add an Entry	158
10-22	Converged Network Adapter Ports.	159

10-23	NIC Function	160
10-24	NPAR Configuration	161
10-25	NPAR Bandwidth Parameters	162
10-26	NIC Function NPAR Function Type	163
10-27	eSwitch Statistics	164
10-28	eSwitch Configuration	165
10-29	NIC Function Parameters.	166
10-30	NIC Function Statistics.	167
10-31	NIC Function Diagnostics.	168
10-32	NIC Function Diagnostic Tests	169
10-33	NIC Function DCBX Information	170
10-34	NIC Function DCBX TLV Information	171
10-35	NIC Function DCBX TLV—Transmission Bandwidth Percentage	172
10-36	NIC Function VPD	173
10-37	FCoE Functions	173
10-38	FCoE NPAR Function Type	174
10-39	FCoE Function Boot Parameters	175
10-40	FCoE Function Parameters	176
10-41	FCoF Function Transceiver Information	177
10-42	FCoE Function Statistics	178
10-43	FCoF Function Diagnostics	179
10-44	FCoE Ping Test Results	181
10-45	FCoF Function Attribute Information	182
10-46	FCoE Function Primary FCE VI AN ID	183
10-47	FCoE Function Data Center Bridging Information	184
10-48	FCoE Function DCE Statistics	185
10-49	FCoE Function DCBX TIV Information	186
10-50	FCoE Function Temperature	187
10-51	FCoE Function Vital Product Data	188
10-52	FCoE Function Target Information	189
10-02	FCoE Function I LIN Information	190
10-50	iSCSI Functions	190
10-55	iSCSI Function NPAR Function Type	101
10-56	iSCSI Function Boot Parameters	102
10-57	iSCSI Function Parameters	102
10-58	iSCSI Function iSCSI and Firmware Settings	194
10-50	iSCSI Function Network Parameters	105
10-00	iSCSI Function IPv4 Parameters	196
10-60	iSCSI Function Statistics	197
10-01		108
10-02	iSCSI Function Ping Test	100
10-03	iSCSI Function Vital Product Data	200
10-04	Storage Man with 578yy//1000 Series Adapters	200
11-1	(vSnberg Web Client Plug_in)	202
		202

11-2	Storage Map with 578xx/41000 Series Adapters	
	(HTML5 based vSphere Client Plug-in)	203
11-3	Storage Map Showing LUNs Attached to VMs	
	(vSphere Web Client Plug-in)	204
11-4	Storage Map Showing LUNs Attached to VMs	
	(HTML5 based vSphere Client Plug-in)	205
11-5	Network Map with 578xx/41000 Series Adapters	
	(vSphere Web Client Plug-in).	206
11-6	Network Map with 578xx/41000 Series Adapters	
	(HTML5 based vSphere Client Plug-in)	207
11-7	Adapter Management on 578xx/41000 Series Adapters	
	(vSphere Web Client Plug-in)	208
11-8	Adapter Management on 578xx/41000	
	(HTML5 based vSphere Client Plug-in)	209
11-9	Single/Multi-Function Configuration for 578xx Series Adapters	211
11-10	Adapter Configuration for a 578xx Series Adapter.	212
11-11	Adapter Configuration for a 41000 Series Adapter	212
11-12	Adapter Configuration Wizard: Select Multi-Function Mode	213
11-13	Adapter Configuration Wizard: Enable Protocols	213
11-14	Adapter Configuration Wizard: Adjust Bandwidth	214
11-15	Adapter Configuration Wizard: Set SR-IOV	214
11-16	Temperature Page (vSphere Web Client Plug-in)	215
11-17	Temperature Page (HTML5 based vSphere Client Plug-in)	216
11-18	QinQ Configuration Page (vSphere Web Client Plug-in)	217
11-19	QinQ Configuration Page (HTML5 based vSphere Client Plug-in)	218
11-20	QinQ Dialog Box (vSphere Web Client Plug-in)	218
11-21	QinQ Dialog Box (HTML5 based vSphere Client Plug-in)	219
11-22	Port Information on 578xx/41000 Series Adapters	
	(vSphere Web Client Plug-in)	221
11-23	Port Information on 578xx/41000 Series Adapters	
	(vSphere Web Client Plug-in)	222
11-24	Port Information on 41000 Series Adapters (HTML5 based vSphere Client Plug-in)	223
11-25	Port Information with DCBX Information	224
11-26	MBA Boot Configurations (vSphere Web Client Plug-in)	225
11-27	MBA Boot Configurations (HTML5 based vSphere Client Plug-in)	226
11-28	Update MBA Configuration Dialog Box (vSphere Web Client Plug-in)	228
11-29	Update MBA Configuration Dialog Box (HTML5 based vSphere Client Plug-in)	228
11-30	iSCSI Boot Configuration in the vSphere Web Client Plug-in	229
11-31	iSCSI Boot Configuration in the HTML5 based vSphere Client Plug-in	230
11-32	Update iSCSI Boot Configuration, General Parameters	
	for 578xx Series Adapters	231
11-33	Update iSCSI Boot Configuration, General Parameters	
	tor 41000 Series Adapters	232
11-34	Update ISCSI Boot Configuration, General Parameters	
	(HIML5 based vSphere Client Plug-in)	232

11-35	Update iSCSI Boot Configuration, Initiator Parameters (vSphere Web Client Plug-in)	233
11-36	Update iSCSI Boot Configuration, Initiator Parameters	
	(HTML5 based vSphere Client Plug-in)	234
11-37	Update iSCSI Boot Configuration, Primary Target Parameters	
	(vSphere Web Client Plug-in)	235
11-38	Update iSCSI Boot Configuration, Primary Target Parameters	
	(HTML5 based vSphere Client Plug-in)	235
11-39	Update iSCSI Boot Configuration, MPIO Parameters	
	(vSphere Web Client Plug-in)	236
11-40	Update iSCSI Boot Configuration, MPIO Parameters	
	(HTML5 based vSphere Client Plug-in)	237
11-41	Boot Configuration – FCoE Boot Page (vSphere Web Client Plug-in)	237
11-42	Boot Configuration – FCoE Boot Page (HTML5 based vSphere Client Plug-in)	238
11-43	Update FCoE Boot Configuration, General Parameters	
	(vSphere Web Client Plug-in).	239
11-44	Update FCoE Boot Configuration, General Parameters	
	(HTML5 based vSphere Client Plug-in)	240
11-45	Update FCoE Boot Configuration, Target Parameters	
		241
11-46	Update FCoE Boot Configuration, Target Parameters	
44 47	(HTML5 based vSphere Client Plug-in)	241
11-47	vSphere Web Client Plug-in Link Settings	242
11-48	HTML5 based vSphere Client Plug-in Link Settings	243
11-49	VSphere Web Client Plug-in Diagnostics Page	244
11-50		245
11-51		246
11-52	Diagnostics lest Completed	247
11-53	Web Client Function Information on 578xx/41000 Series Adapters.	248
11-54	Configuration Page for 578XX Series Adapters	249
11-55	Configuration Page for 41000/ Series Adapters.	249
11-50	Configuration Page for 578xx Series Adapters	250
11-57	Web Client Function Ethernet Statistics on 578xx/41000 Series Adapters	251
11-58 11 50	isCSI Derted Information on a 578xx/41000 Series Adapters	202
11-09	Nob Client iSCSI Target Information on 579yy/41000 Series Adapters	203
11-00	Web Client iSCS1 LIN Information on 570vv/41000 Series Adapters	204
11-01	web client 13031 LON Information on 37 0XX/4 1000 Series Adapters	200

List of Tables

Table		Page
3-1	System Tree Device Icons	21
3-2	Special Icon Symbols	22
4-1	Data Patterns Available for Use	43
4-2	ImmediateData and IntialR2T	80
10-1	Driver Parameters	137

Preface

This preface lists the supported products, specifies the intended audience, explains the typographic conventions used in this guide, lists related documents, provides technical support and contact information, and describes legal notices.

Supported Products

This user's guide provides information on installing and using the QConvergeConsole® VMware® vCenter Server® Plug-in (Part I) and the QConvergeConsole VMware vSphere® Web Client Plug-in (Part II).

- The QConvergeConsole VMware vCenter Server Plug-in (vCenter Server Plug-in) extends the capabilities of VMware vCenter Server, giving you the ability to manage adapters from Marvell installed in VMware ESX[®] and ESXi[™] hosts using an intuitive, graphical interface. The vCenter Server Plug-in supports the following Marvell adapters:
 - 2600 and 2700 Series Fibre Channel Adapters
 - **G** 578xx and 41000 Series Intelligent Ethernet Adapters
 - □ 578xx and 41000 Series Converged Network Adapters
- QConvergeConsole VMware vSphere Web Client Plug-in (vSphere Web Client Plug-in) extends the capabilities of vSphere Web Client, giving you the ability to manage adapters installed in VMware ESX and ESXi hosts managed by VMware vCenter servers. The vSphere Web Client Plug-in supports the following Marvell adapters:
 - □ 2600 and 2700 Series Fibre Channel Adapters
 - **578xx** and 41000 Series Intelligent Ethernet Adapters
 - □ 578xx and 41000 Series Converged Network Adapters

The interface and features of both plug-ins are modeled on the QConvergeConsole tool, which is used in non-VMware environments for management of Marvell adapters. For more information, see the following links:

vCenter Server: http://www.vmware.com/products/vcenter-server/

vSphere: http://www.vmware.com/products/vsphere/

NOTE

The plug-ins on the VMware vCenter Server and vCenter Server Appliance operate identically. You can perform the same operation on both the VMware vCenter Server and the vCenter Server Appliance.

Using QConvergeConsole vSphere Plug-ins

The following diagrams illustrate how to manage adapters and hosts when using the QConvergeConsole Plug-ins for vSphere: the QConvergeConsole VMware vCenter Server Plug-in, the QConvergeConsole VMware vSphere Web Client Plug-in, and the QConvergeConsole HTML5 based vSphere Client Plug-in.



Figure i. Managing an ESXi 6.0 Host Containing a FastLinQ or Fibre Channel Adapter



Figure ii. Managing an ESXi 6.0/6.5 Host Using the vSphere Web Plug-in



Figure iii. Managing an ESXi 6.7/7.0 Host with a FastLinQ or Fibre Channel Adapter Using the HTML5 Plug-in

Intended Audience

This guide is intended for use by administrators who are planning to deploy or have deployed one of the supported Marvell adapters in their VMware ESX and ESXi environments.

What Is in This Guide

This user's guide contains information you need to use the vCenter Server Plug-in and the vSphere Web Client Plug-in.

This preface explains the purpose of each plug-in, identifies this guide's intended audience, lists related documents, describes the typographic conventions used in this guide, refers you to the applicable license agreements, and provides technical support and contact information.

The remainder of this user's guide is organized into the following parts, chapters and appendices:

- Part I QConvergeConsole VMware vCenter Server Plug-in
 - Chapter 1 vCenter Server Plug-in Overview lists the hardware, software, and operating system requirements for successful installation and operation of the vCenter Server Plug-in.
 - Chapter 2 Installing the vCenter Server Plug-in explains how to install, uninstall, and upgrade the vCenter Server Plug-in.
 - Chapter 3 Getting Started with vCenter Server Plug-in describes how to access the vCenter Server Plug-in from the vCenter Server, how to navigate to a host, and how to enable or disable the plug-in.
 - Chapter 4 Using the vCenter Server Plug-in explains the features of the vCenter Server Plug-in's graphical user interface (GUI), as well as detailed instructions on how to configure and manage Marvell adapters using the GUI.
 - Chapter 5 Managing Marvell 578xx and 41000 Series Adapters provides detailed instructions on how to use the vCenter Server Plug-in to manage Marvell 578xx and 41000 Series Adapters and connected storage devices.
- Part II QConvergeConsole VMware vSphere Web Client Plug-in
 - Chapter 7 vSphere Web Client Plug-in Overview lists the hardware, software, and operating system requirements for successful installation and operation of the vSphere Web Client Plug-in.
 - Chapter 8 Installing the vSphere Web Client Plug-in provides instructions about how to install and uninstall the vSphere Web Client Plug-in.

- Chapter 9 Getting Started with vSphere Web Client Plug-in describes how to start and exit the vSphere Web Client Plug-in.
- Chapter 10 Using the vSphere Web Client Plug-in provides instructions about how to manage hosts, adapters, ports, and functions. Management tasks include displaying information, updating firmware, configuring parameters, and diagnostics for NIC, Fibre Channel, FCoE, and iSCSI ports and functions.
- Chapter 11 Managing Marvell 578xx and 41000 Series Adapters provides detailed instructions on how to use the vCenter Server Web Client Plug-in to manage Marvell 578xx and 41000 Series Adapters and connected storage devices.
- Appendix A Installing the QLogic Adapter CIM Provider Using VUM explains how to install the QLogic Adapter CIM Provider using the VMware Update Manager (VUM).
- Appendix B Troubleshooting provides troubleshooting information for the QLogic Adapter CIM Provider and the VMware vSphere Web Client.
- Appendix C Revision History contains a list of changes made to this guide since the last revision.

At the end of this guide are a glossary with term definitions and an index to help you quickly find the information that you need.

Related Materials

For additional information, refer to following documents that are available from the Marvell Web site, <u>www.marvell.com</u>:

- Read Me, QConvergeConsole VMware vCenter Server Plug-in
- Release Notes, QConvergeConsole VMware vCenter Server Plug-in
- Read Me, QConvergeConsole VMware vSphere Web Client Plug-in
- Release Notes, QConvergeConsole VMware vSphere Web Client Plug-in
- User's Guide—Fibre Channel Adapter, 2600 Series
- User's Guide—Fibre Channel Adapter, 2700 Series
- User's Guide—Marvell® Ethernet iSCSI Adapters and Ethernet FCoE Adapters Marvell BCM57xx and BCM57xxx
- User's Guide—Converged Network Adapters and Intelligent Ethernet Adapters, FastLinQ 41000 Series

For VMware vCenter and vSphere documentation, see <u>www.vmware.com</u>.

Documentation Conventions

This guide uses the following documentation conventions:

- **NOTE** provides additional information.
- CAUTION without an alert symbol indicates the presence of a hazard that could cause damage to equipment or loss of data.
- Text in blue font indicates a hyperlink (jump) to a figure, table, or section in this guide, and links to Web sites are shown in <u>underlined blue</u>. For example:
 - **Table 9-2** lists problems related to the user interface and remote agent.
 - See "Installation Checklist" on page 3-6.
 - For more information, visit <u>www.marvell.com</u>.
- Text in **bold** font indicates user interface elements such as a menu items, buttons, check boxes, or column headings. For example:
 - Click the **Start**, point to **All Programs**, point to **Accessories**, and then click **Command Prompt**.
 - Under Notification Options, select the Warning Alarms check box.
- Text in Courier font indicates a file name, directory path, or command line text. For example:
 - □ To return to the root directory from anywhere in the file structure: Type cd /root and press ENTER.
 - □ Issue the following command: # sh /install.bin
- Key names and key strokes are indicated with UPPERCASE:
 - Press CTRL+P.
 - Press the UP ARROW key.
- Text in *italics* indicates terms, emphasis, variables, or document titles. For example:
 - □ For a complete listing of license agreements, refer to the applicable *Software End User License Agreement.*
 - □ What are *shortcut keys*?
 - □ To enter the date type *mm/dd/yyyy* (where *mm* is the month, *dd* is the day, and *yyyy* is the year).
- Topic titles between quotation marks identify related topics either within this manual or in the online help, which is also referred to as *the help system* throughout this document.

QConvergeConsole VMware vCenter Server Plug-in

Part 1 describes how to install the QConvergeConsole VMware vCenter Server Plug-in and configure 2600, 2700, 578xx, and 41000 Series Adapters. This section includes the following chapters:

- Chapter 1 vCenter Server Plug-in Overview
- Chapter 2 Installing the vCenter Server Plug-in
- Chapter 3 Getting Started with vCenter Server Plug-in
- Chapter 4 Using the vCenter Server Plug-in
- Chapter 5 Managing Marvell 578xx and 41000 Series Adapters

1 vCenter Server Plug-in Overview

The vCenter Server Plug-in provides the ability to manage Marvell Fibre Channel Adapters, Converged Network Adapters, Intelligent Ethernet Adapters, and connected devices within a VMware vCenter Server environment. This plug-in is part of the Marvell QConvergeConsole suite of management tools, which includes the QConvergeConsole Web-based GUI and the QConvergeConsole CLI for other operating system environments. The plug-in provides an interactive GUI that is similar to the QConvergeConsole Web-based tool.

Features

The vCenter Server Plug-in allows users to centrally manage Marvell QLogic Fibre Channel adapters, Converged Network Adapters, and Intelligent Ethernet Adapters for all supported protocols on the QConvergeConsole page in VMware vCenter Server. The management capabilities include:

- Management for Fibre Channel, FCoE, iSCSI, and NIC adapters
- Storage and network maps that provide an end-to-end view of the adapter connections to the software and hardware components in the VMware ESX/ESXi environments.
- Updating the adapter boot code and firmware for all supported adapters
- Dynamic management of Marvell NIC partitioning (NPAR) for supported Converged Network and Intelligent Ethernet adapters, including the ability to modify partition function type and set quality of service (QoS).
- Querying and modifying driver parameters for all supported protocols.
- Viewing and managing initiators, targets, and LUNs for Fibre Channel, FCoE, and iSCSI ports
- Querying statistics, running diagnostics, and obtaining transceiver information

These capabilities produce the following key benefits:

- Marvell adapters can be managed from VMware vCenter Server
- Visibility of the virtual machine (VM) location and resource utilization
- Accelerated infrastructure deployment
- Simplified adapter management

System Requirements

This section lists the requirements for proper operation of the vCenter Server Plug-in.

Hardware Requirements

The vCenter Server Plug-in requires the following hardware, as shown in Figure 1-1:

- VMware ESX or ESXi Server
- Server to run the VMware vCenter Server



Figure 1-1. Required Hardware

Marvell provides the following components that must be installed on the ESX/ESXi Servers and the vCenter Server.

ESX/ESXi Server:

- Marvell adapters with proper firmware and driver
- QLogic Adapter CIM Provider

vCenter Server:

Software installer file to register the plug-in to the vCenter Server

The vCenter Server Plug-in requires a physical or Virtual Machine server with 200MB of free disk space and at least 4GB of RAM.

For more information about hardware requirements, see the VMware vCenter Server and vSphere documentation.

Software Requirements

The following software requirements apply:

- VMware vSphere ESX/ESXi environment 6.x or 7.x
- Any operating system, including Windows, on which one of the supported versions of VMware vCenter Server is supported by VMware
- VMware vCenter Server 6.0 or later, or vCenter Server Appliance 6.0 or later
- vSphere Client 6.0 or later
- Tomcat[™] Web server (optional if you choose not to use the Tomcat server bundled with the VMware vCenter Server installation, or installing for the vCenter Server Appliance. Tomcat 7 is recommended)
- QLogic Adapter CIM Provider provides drivers for the adapters being managed

For information about software requirements to run VMware vCenter Server, vCenter Server Appliance, and vSphere Client, see the VMware vSphere product documentation.

Supported Adapters

The vCenter Server Plug-in supports the following Marvell adapters:

- 2600 and 2700 Series Fibre Channel Adapters
- 578xx and 45000 Series Intelligent Ethernet Adapters
- 578xx and 45000 Series Converged Network Adapters

Supported VMware ESX/ESXi and vCenter Server Versions

Refer to the vCenter Server Plug-in *Read Me* and *Release Notes* documents for the latest information regarding supported versions of the following:

- VMware vCenter Server
- VMware vSphere Client

To determine what version of VMware vCenter Server can manage what versions of VMware ESX and ESXi, see the VMware vSphere product documentation.

User Privilege Requirements

User privilege requirements are as follows:

- Administrator privileges on the vSphere Client system are required to install, register, and use the vCenter Server Plug-in.
- Root privileges are required on the ESX or ESXi host to install the QLogic Adapter CIM Provider drivers.

2

Installing the vCenter Server Plug-in

This chapter explains how to install and uninstall the required software in the following sections:

- Installation Package Contents
- "Installing the vCenter Server Plug-in" on page 8
- "Uninstalling the vCenter Server Plug-in" on page 14
- "Installing the QLogic Adapter CIM Provider" on page 14
- "Uninstalling the QLogic Adapter CIM Provider" on page 16

For information on installing the plug-in, refer to "Installing the vCenter Server Plug-in" on page 8.

To use the vCenter Server Plug-in, install the following software in this order:

- 1. vCenter Server Plug-in—on the vCenter Server
- 2. QLogic Adapter CIM Provider—on the ESX or ESXi Server

Installation Package Contents

The QLogic Adapter CIM Provider and vCenter Server Plug-in package contains the following files (where <ver_num> indicates the current package version) needed to install both the plug-in and the CIM Providers:

- QLogic_Adapter_VI_Plugin_<ver_num>.exe
 The vCenter Server Plug-in installation package
- QLogic_Adapter_Web_Client_Plugin_<ver_num>.exe The vSphere Web Client Plug-in installation package
- QLogic_Adapter_Web_Client Plugin_Linux_i386_<ver_num>.bin The vSphere Web Client Plug-in installation package to be installed on 32-bit Linux servers
- QLogic_Adapter_Web_Client_Plugin_Linux_x64_<ver_num>.bin The vSphere Web Client Plug-in installation package to be installed on 64-bit Linux servers

- QLogic_Adapter_vSphere_Client_Plugin_<ver_num>.exe The HTML5 based vSphere Client Plug-in installation package (for HTML5 based vSphere Client)
- QLogic_Adapter_vSphere_Client_Plugin_Linux_i386_<ver_num>. bin The vSphere Client Plug-in installation package to be installed on 32-bit

Linux Servers (for HTML5 based vSphere Client)

- QLogic_Adapter_vSphere_Client_Plugin_Linux_x64_<ver_num>.bin The vSphere Client Plug-in installation package to be installed on 64-bit Linux Servers (for HTML5 based vSphere Client)
- esx65-1.1.13\QLGC-ESX-6.5.0-viplugin-cimprovider-1.1.13-27
 68847-offline_bundle-<ver_num>.zip
 The Marvell QLogic 2500, 2600, and 2700 Series Adapter CIM Provider installation file
- esx6x-1.7.19\VMW-ESX-6.x.0-qlogic-adapter-provider-1.7.19-1391871-offline_bundle-<ver_num>.zip
 The Marvell FastLinQ 578xx and 41000 Series Adapter CIM Provider installation file for ESXi 6.5 and 6.7
- esx70-1.7.19\VMW-esx-7.0.0-MRVL-adapter-provider-1.7.19-<v
 er_num>.zip
 The Marvell FastLinQ 578xx and 41000 Series Adapter CIM Provider
 installation file for ESXi 7.0
- esx65-1.1.13\QLGC-ESX-6.5.0-viplugin-cimprovider-1.1.13-27
 68847-offline_bundle-<ver_num>.zip
 The Marvell FastLinQ 578xx and 41000 Series Adapter CIM Provider
 installation file for ESXi 6.5
- readme.txt

The Read Me document contains hardware and software requirements, operating system support, supported features, installation and removal instructions, known issues and workarounds, and support contact information.

release_notes.txt
The Release Notes document lists changes, fixes, known issues, and release details.

For detailed information on installing the vCenter Server Plug-in, refer to "Installing the vCenter Server Plug-in" on page 8. For detailed information on installing the CIM Provider, refer to "Installing the QLogic Adapter CIM Provider" on page 14.

Installing the vCenter Server Plug-in

Follow the instructions in this section to install the vCenter Server Plug-in on a vCenter Server or Windows server running Tomcat Web server (Tomcat 7 recommended) for the vCenter Server, or vCenter Server Appliance.

To install the vCenter Server Plug-in:

- 1. Download the QLogic Adapter VI Plugin <ver num>.exe file.
- 2. Run the installation using one of these methods:
 - Double-clicking the .exe file.
 - **Typing the name of the** .exe file in a Run window.
 - Clicking **Browse** and locating the .exe file.

The InstallAnywhere wizard opens, as shown in Figure 2-1.

InstallAnywhere		
1	InstallAnywhere is preparing to install	
	71%	
		Cancel
(C) 1997-2009 Flexera Software Inc. and/or InstallShield Co. Inc.		

Figure 2-1. InstallAnywhere Initial Window

3. In the QLogic Adapter VI Plug-in Registration Wizard, Introduction window (Figure 2-2), click **Next**.



Figure 2-2. QLogic Adapter VI Plug-in Registration Wizard—Introduction

Wait while the wizard configures the plug-in (Figure 2-3).



Figure 2-3. QLogic Adapter VI Plug-in—Configuration

If a previous version of the plug-in is installed on the system, select from the following options (Figure 2-4):

- To cancel the installation, click **Finish**.
- To resume the installation, click **Next**.



Figure 2-4. QLogic Adapter VI Plug-in—Previous Version Found Options

4. Select the installation folder, and then click **Install** (Figure 2-5).



Figure 2-5. QLogic Adapter VI Plug-in—Select the Installation Folder

5. Wait while the wizard performs the installation (Figure 2-6).



Figure 2-6. QLogic Adapter VI Plug-in—Installing the vCenter Server Plug-in

6. In the User Input window (Figure 2-7 shows an example), enter the requested information, and then click **Next** to continue.

NOTE

The **Tomcat Server IP** text box is visible only if the embedded Tomcat Web services within vCenter Server are not used. This text box is not shown if you are installing the vCenter Server Plug-in on vCenter Server.

🖫 QLogic Adapter ¥I Plugin			
		User Input	
	Welcome to User Input Scr	een!	
and the second se	Please fill in all the boxes in order to register the plug-in successfully. Note: Textfields are case sensitive		
ALL REAL	vCenter Server IP	172.17.140.27	
$\sim \infty$	vCenter Server Username	administrator	
QLOGIC	vCenter Server Password	****	
	Tomcat Server IP	172.17.141.185	
InstallAnywhere			
Cancel		<u>P</u> revious <u>N</u> ext	

Figure 2-7. QLogic Adapter VI Plug-in—User Input Window



Wait again while the wizard finishes configuring the plug-in (Figure 2-8).

Figure 2-8. QLogic Adapter VI Plug-in—Configuration

7. Figure 2-9 appears when registration is completed. Click **Finish** to exit.



Figure 2-9. QLogic Adapter VI Plug-in—Successful Registration

- 8. After the installation completes, restart the Tomcat service as follows:
 - □ If the vCenter Server Plug-in is installed on a server other than the vCenter Server, restart the Apache[™] Tomcat service.

Uninstalling the vCenter Server Plug-in

To remove the vCenter Server Plug-in:

- 1. In the Windows Control Panel, select **Add or Remove Programs**. (Windows Server 2016 or later only: Select **Programs and Features**.)
- 2. In the Add or Remove Programs dialog box, select the vCenter Server Plug-in, and then click **Change/Remove**.
- 3. Follow the instructions in the plug-in installer to remove the plug-in.

Installing the QLogic Adapter CIM Provider

This section describes how to install and start the QLogic Adapter CIM Provider for VMware ESX/ESXi. Because multiple zip packages exist, make sure that you select the zip package that matches your environment: ESXi 6.0, ESXi 6.5, ESXi 6.7, or ESXi 7.0.

NOTE

The QLogic Adapter CIM Provider for VMware ESX was generated as a vSphere Installation Bundle (VIB) file. A VIB contains the complete set of files and binaries required to install the provider on VMware ESX/ESXi. The file offline-bundle.zip contains the VIB and the necessary metadata to install the provider on VMware ESX/ESXi.

The CIM Provider bundled with the current vCenter Server Plug-in also includes a zip bundle to be used with VMware Update Manager (VUM) for auto-deployment of the QLogic Adapter CIM Provider.

Initial Installation Methods

Initial installation methods for the QLogic Adapter CIM Provider include the following:

- Online—Refer to "To install the CIM Provider on an ESXi 6.x or 7.0 host:" on page 15.
- Offline—Refer to Appendix A Installing the QLogic Adapter CIM Provider Using VUM.

■ VUM—Refer to Appendix A Installing the QLogic Adapter CIM Provider Using VUM. The VMware Update Manager (VUM) is a plug-in for the vCenter Server. You can use the VUM UI to install a VIB by importing the associated offline bundle package (a zip file that contains the VIB and metadata). You can then create an add-on baseline and remediate the hosts with this baseline. For details on VUM, see the vCenter Server documentation.

To install the CIM Provider on an ESXi 6.*x or 7.0* host:

- Copy the <CIM Provider installation file
 (offline-bundle.zip)> file to the root directory (/) of the ESXi 6.x or
 ESXi 7.0 system.
- 2. Issue the esxcli command as follows:

```
# cd /
# esxcli software vib install -d file:///<CIM Provider
installation file (offline-bundle.zip)> --maintenance-mode
```

3. Reboot the system as required.

NOTE

On ESXi 6.5, the CIMOM (CIM object manager) may be disabled. To check to see if the CIMOM is disabled, issue the following command:

```
esxcli system wbem get
```

To enable the CIMOM, issue the following command:

```
esxcli system wbem set -e true
```

Subsequent Update Installation

To update the QLogic Adapter CIM Provider after a prior VIB installation, remove the existing VIB by following the instructions in "Uninstalling the QLogic Adapter CIM Provider" on page 16. After completing the VIB removal, install the new VIB by following the same steps in "Initial Installation Methods" on page 14.

Starting the QLogic Adapter CIM Provider

After a system startup, the Small-Footprint CIM Broker (SFCB) CIM object manager (CIMOM) in the ESX system should start automatically and load the QLogic Adapter CIM Provider when necessary. If the CIM Provider does not start automatically, refer to Appendix B Troubleshooting for information on how to manually stop, start, or restart the SFCB CIMOM.
Uninstalling the QLogic Adapter CIM Provider

You can uninstall the QLogic Adapter CIM Provider for your version of VMware. For information about removing the QLogic Adapter CIM Provider through a remote host, see the *QLogic Adapter CIM Provider and vCenter Plug-in for VMware ESX/ESXi Read Me* document.

To uninstall the QLogic Adapter CIM Provider from an ESXi 6.x or 7.0 host:

- 1. To view the VIB list and determine the CIM Provider name (in this case, qlogic-adapter-provider or viplugin-cimprovider for FastLinQ Adapters), issue the following command:
 - # esxcli software vib list
- 2. To remove the QLogic Adapter CIM Provider, issue the following command:
 - # esxcli software vib remove --vibname qlogic-adapter-provider --maintenance-mode -f

3 Getting Started with vCenter Server Plug-in

This chapter provides instructions for accessing the vCenter Server Plug-in and provides information on the plug-in's user interface, including:

- Starting VMware vCenter Server Using the vCenter Server Plug-in
- "Introduction to the vCenter Server Plug-in" on page 20
- "Enabling and Disabling the vCenter Server Plug-in" on page 23

Starting VMware vCenter Server Using the vCenter Server Plug-in

If you have not done so, create a data center (select **New Datacenter**), and then add each ESX/ESXi Server to the new data center. Then, select the server from the tree on the left side to display a row of tabs on the right side. If the server has the QLogic Adapter CIM Provider and adapters installed, and if the plug-in installation and registration have been done successfully, the row of tabs includes the **QConvergeConsole** tab (see "vCenter Server Plug-in User Interface" on page 19). Click this tab to begin using the plug-in to manage adapters in vCenter Server.

If you start and connect the vSphere Client directly to an ESX/ESXi Server, the Plug-in does not appear.

To start the vCenter Server Plug-in:

- 1. Start the VMware vSphere Client and connect to the VMware vCenter Server by entering the IP address or its qualified domain name, user name, and password, and then click **Login**.
- 2. If the Security Warning dialog box appears, click **Ignore** to use the current SSL certificate.
 - □ If you start and connect the vSphere Client directly to an ESX/ESXi Server, the vCenter Server Plug-in does not appear.
 - □ If you have not done so, create a data center (select **New Datacenter**) and add each ESX/ESXi Server to the newly created data center.

- 3. In the left pane, select the IP address of the VMware ESX/ESXi Server.
- 4. In the right pane, click the **QConvergeConsole** tab to view the plug-in. The vCenter Server Plug-in retrieves the adapter information from the server.

NOTE

If the ESXi host does not have the QLogic Adapter CIM Provider and adapters installed, or if the vCenter Server Plug-in installation and registration was not successful, the **QConvergeConsole** tab is not shown.

In the right pane of VMware vCenter, the vCenter Server Plug-in appears on the page labeled with the tab **QConvergeConsole**.

To access the QConvergeConsole tab in VMware vCenter Server:

 On a computer or server that has the VMware vSphere Client software installed, double-click the VMware vSphere Client icon *P* to start the vSphere Client.

NOTE

If you start and connect the vSphere Client directly to an ESX/ESXi Server, the plug-in does not appear.

- 2. In the vSphere Client log-in dialog box (Figure 3-1), log in as follows:
 - a. To connect to multiple hosts, type the VMware vCenter Server's IP address in the **IP address/Name** box. Or, to connect to a single host, type the host's IP address or host name in the **IP address/Name** box.
 - b. Type your user name and password for the VMware vCenter Server in the appropriate boxes. You can also select the Use Windows Session credentials check box, if credentials are configured and applicable.

c. Click Login.

VMware vSphere Client	:		
			P
vinware vSpnere			
Client			
To manage multiple hosts,	, enter the IP address o	or name of a	iame.
To manage multiple hosts, vCenter Server. IP address / Name:	172.29.28.100	or name of a]
To manage multiple hosts, vCenter Server. IP address / Name: User name:	172.29.28.100	or name of a	- -
To manage multiple hasts, vCenter Server. IP address / Name: User name: Password:	172.29.28.100	or name of a	
To manage multiple hosts, vCenter Server. IP address / Name: User name: Password:	172.29.28.100	r name of a	
To manage multiple hosts, vCenter Server. IP address / Name: User name: Password:	172.29.28.100	ssion credentia	isine.

Figure 3-1. vSphere Client Login Dialog Box

VMware vCenter opens in the vSphere Client window. Figure 3-2 identifies the ESXi host node and the **QConvergeConsole** tab.



Figure 3-2. vCenter Server Plug-in User Interface

- In the left pane of the VMware vCenter Server window under Home, Inventory, Hosts and Clusters View, select a VMware vSphere ESX or ESXi host.
- 4. In the right pane, click the **QConvergeConsole** tab.

The right pane displays the QConvergeConsole user interface, as shown in Figure 3-3. If there is no **QConvergeConsole** tab, see Appendix A Installing the QLogic Adapter CIM Provider Using VUM.



Figure 3-3. vCenter Server Plug-in User Interface

Introduction to the vCenter Server Plug-in

The vCenter Server Plug-in's graphical interface appears in the right pane of VMware vCenter Server. The interface is divided into two panes (see Figure 3-3):

- System Tree Pane
- Content Pane

Use the system tree pane to select a device to configure. The content pane then displays the configuration options for the item selected in the system tree.

System Tree Pane

The system tree resides in the left pane of the QConvergeConsole interface. The nodes of the system tree show all available ESX and ESXi hosts and their connected devices (adapters, ports, devices, and LUNs). The nodes are arranged hierarchically from host (highest level) to LUN (lowest level). You can display or hide the information in lower levels of a node, as follows:

- Click I next to any tree node to show its list of connected devices.
- Click I next to any tree node to hide its list of connected devices.

Each system tree node has an icon that identifies the associated device (host, adapter, port, target device, or LUN), as shown in Table 3-1.

lcon	Meaning
II	An ESXi host
EC	A supported QLogic Fibre Channel Adapter
BHR	A supported Marvell Converged Network Adapter
NIC	A supported Marvell Ethernet Adapter
QLogic	A physical adapter
	A physical port on a supported adapter
0	A target device connected to an adapter port
000	A LUN on a target device
NIC	NIC PCI function on Converged Network Adapter port
i808l	iSCSI PCI function on Converged Network Adapter port
FCOE	FCoE PCI function on Converged Network Adapter port
ج	PCI function disabled on Converged Network Adapter port
1	578xx/41000 Series Adapters
PT 11	578xx/41000 Series Adapters FCoE
0	578xx/41000 Series Adapters FCoE Port
140 B	578xx/41000 Series Adapters Function (Link Down)
	578xx/41000 Series Adapters Function (Link Up)
	578xx/41000 Series Adapters iSCSI

Table 3-1. System Tree Device Icons

lcon	Meaning
ISCSI	578xx/41000 Series Adapters iSCSI Portal
۵	A LUN on a target device connected to a 578xx/41000 Series Adapters
->⊘	578xx/41000 Series Adapters Port
	A target device connected to a 578xx/41000 Series Adapters

Table 3-2 shows symbols that are added to the basic icons in Table 3-1 to indicate additional information.

Table 3-2. Special Icon Symbols

Symbol	Meaning	Example			
+	Device, link, or function is down	is csi	iSCSI PCI function is down		
Yellow	Device, link, or function is not connected or link is down	L <mark>FC</mark>	Fibre Channel port is down		
Yellow or Green VM	Indicates whether VM is pow- ered on or off	—	-		

Content Pane

The right pane of the QConvergeConsole interface displays information and management options for the device associated with the selected system tree node. If the device has no associated management options, the content pane displays information only.

The following options are generally available in the content pane:

- **Refresh**—Click this to update the content pane with the latest information.
- **Reset**—Click this to reset relevant information.
- Save—Click this to save changes made to parameter values (not available if content pane contains information only).
- Save Configuration—Click this to save configuration changes (not available if content pane contains information only).
- Update Adapter Flash Image—Click this to update the Flash using the vCenter Server Plug-in.

Enabling and Disabling the vCenter Server Plug-in

NOTE

If the vCenter Server Plug-in installation completed successfully, you do not need to enable the plug-in; it is automatically enabled during installation. You can, however, verify if the plug-in is enabled by following these steps.

To enable or disable the QConvergeConsole plug-in:

- 1. In the vSphere Client window, open the **Plug-ins** menu, and then click **Manage Plug-ins**.
- 2. In the Plug-in Manager window under **Installed Plug-ins**, locate the QConvergeConsole plug-in.

The plug-in's status (**Enabled** or **Disabled**) is displayed in the **Status** column, as shown in Figure 3-4.



Figure 3-4. Plug-in Manager: Verifying vCenter Server Plug-in Status

3. To enable or disable the vCenter Server Plug-in, right-click the plug-in, and on the shortcut menu, select **Enabled** or **Disabled** (the status toggles between the two), as shown in Figure 3-5.

in Name	Vendor	Version	Status	Description	Progress	Errors
alled Plug-ins						
VMware vCenter Storage Mon	VMware Inc.	5.0	Enabled	Storage Monitoring and Reporting		
vCenter Hardware Status	VMware, Inc.	5.0	Enabled	Displays the hardware status of hosts (CIM monitoring)		
vCenter Service Status	VMware, Inc.	5.0	Enabled	Displays the health status of vCenter services		
com.qlogic.QLogicAdapterVIP	QLogic Corporat	1.0.44	Enabled	Qlogic Adapter VI Plugin		
lable Plug-ins						Disable
						Copy to Clipboard Ctrl+C

Figure 3-5. Plug-in Manager: Toggling vCenter Server Plug-in Status

4

Using the vCenter Server Plug-in

This chapter provides detailed instructions on how to use the vCenter Server Plug-in to manage Marvell adapters and connected devices, including viewing adapter and device information and updating the adapter Flash firmware.

- Managing Hosts
- "Managing Fibre Channel Adapters" on page 32
- "Managing Converged Network Adapters" on page 49
- "Viewing Target Device Information" on page 86
- "Viewing LUN Information" on page 87
- "Updating Adapter Flash" on page 87

NOTE

- For instructions on using N_Port ID Virtualization (NPIV) to create and delete virtual ports, refer to the VMware vCenter Server documentation: <u>http://pubs.vmware.com/vsphere-50/index.jsp#com.vmware.vsphere.vm</u> admin.doc 50/GUID-C713BCA5-71B4-4539-A4AE-8E781330755C.html.
- For instructions on how to access the vCenter Server Plug-in, a description of the plug-in's user interface, and information on how to connect to and disconnect from hosts, refer to Chapter 3 Getting Started with vCenter Server Plug-in.

Managing Hosts

When you select an ESX or ESXi host, the content pane provides several display options. Select the option for the type of information you want to view, which are described in the following sections:

- Viewing the Storage Map
- Viewing the Network Map
- Setting Fibre Channel Parameters

- Setting iSCSI Parameters
- Setting Ethernet Parameters

Viewing the Storage Map

Next to **Map**, click **Storage** to view the host's storage map, with the host on one end and the VMs on the other end. Figure 4-1 shows an example of a storage map.



Figure 4-1. Host View—Storage Map

Viewing the Network Map

Next to **Map**, click **Network** to view the selected host's network map, as shown in Figure 4-2.



Figure 4-2. Host View—Network Map

Setting Fibre Channel Parameters

Next to **Parameter**, click **Fibre Channel** to view and edit Fibre Channel parameters for the selected host, as shown in Figure 4-3.

172.29.40.98 ¥Mware E5Xi, 5.0.0, 46	59512				•				
3 Started Summary Virtual Machines	Resource Allocation Per	formance Configuration Tasks & Events	Alarms Permissions Maps	Storage Views Hardware	Status QConvergeConsole 🛛 🖒				
	imate in Performance	Adapter Management			Refresh				
□ ₩172.29.40.98	Map: C Storage	Network Parameter: © Fibre Channel	C iSCSI C Ethernet						
QLE8242:AFE1020C03081	General								
	System OS:	¥Mware ESXi 5.0.0 build-469512	System Vendor:	Dell Inc.					
QLE2562:LFC1008084111	System Model:	PowerEdge R710	Provider Version:	1.6.12					
QLE2562:LFC1008U83918	FC Driver Version:	911.k1.1-19vmw							
	Parameters								
	Enable Extended Error f	Enable Extended Error Message Logging.							
	Turn off ZIO (Zero Inter	rupt Delay) Operation Mode.							
	Delay (in 100-microsecond increment) before generating an interrupt to notify completion of request:								
	Maximum queue depth to report for target device (LUN): 64								
	Waiting time (in second) to	retry commands to a port that returns PORT DO	WN status:	5	* *				
	Enable MSI/MSI-X Interrup	: Handling:		Enable MSI	<u> </u>				
	Firmware minidump capture	level mask:		0×1F	•				
	Save Configuration								
1									
1									

Figure 4-3. Host View—Fibre Channel Parameters

The **General** information section at the top of the window contains the following:

- System OS: Name and version of the host operating system
- System Vendor: Name of host manufacturer
- **System Model:** Model name of host
- Provider Version: Reduce Zoom for Plug-in version
- **FC Driver Version:** Version of the Fibre Channel driver

The **Parameters** section contains the following configurable parameters:

- Enable Extended Error Message Logging: Select the check box to enable extended error message logging, or clear the check box to disable extended error message logging.
- Turn off ZIO (Zero Interrupt Delay) Operation Mode: Select the check box to turn off ZIO mode, or clear the check box to turn on ZIO mode.
- Delay (in 100-microsecond increment) before generating an interrupt to notify completion of request: When ZIO mode is on, use the up and down arrows or type the delay in 100ms increments before generating an interrupt.
- Maximum queue depth to report for target device (LUN): Select the maximum queue depth. Allowed values are 0–65,535; the default maximum queue depth value is 64.
- Waiting time (in seconds) to retry commands to a port that returns PORT DOWN status: Select the number of seconds between command retry attempts when a port is down. Allowed values are 0–255. The default is 5.
- Enable MSI/MSI-X Interrupt Handling: Select the interrupt handling mechanism:
 - 0—Enable traditional pin-based interrupt mechanism
 - □ 1—Enable MSI-X interrupt mechanism (default)
 - 2—Enable MSI interrupt mechanism
- **Firmware minidump capture level mask:** Select the driver capture mask for firmware minidump:
 - □ 0x00—Capture mask specified by the firmware
 - □ 0x03—Capture mask 0x03
 - Ox0F—Capture mask 0x0F
 - □ 0x1F—Capture mask 0x1F (default)
 - Ox7F—Capture mask 0x7F

To save your changes, click Save Configuration.

Setting iSCSI Parameters

Next to **Parameter**, click **iSCSI** to view and edit iSCSI parameters for the selected host, as shown in Figure 4-4.

Figure 4-4. Host View—iSCSI Parameters

The General information section at the top of the window contains the following:

- System OS: Name and version of the host operating system
- System Vendor: Name of host manufacturer
- System Model: Model name of host
- Provider Version: Version of the QLogic Adapter CIM Provider
- **iSCSI Driver Version:** Version of the iSCSI driver

The **Parameters** section contains the following configurable parameters:

- Enable Extended Error Message Logging: Select the check box to enable extended error message logging, or clear the check box to disable this feature.
- Command Timeout: To set the command time-out in seconds, type or select a value.
- Firmware minidump capture level mask: Choose the driver capture mask for firmware minidump.

To save your changes, click Save Configuration.

Setting Ethernet Parameters

Next to **Parameter**, click **Ethernet** to view and edit Ethernet parameters for the selected host, as shown in Figure 4-5.

172.29.40.98 VMware E5Xi, 5.0.0, 46	59512	•						
3 Started Summary Virtual Machines	Resource Allocation Performance Configuration Tasks & Events Alarms Permissions Maps Storage Views Hardware Status QConve	ergeConsole 🛛 🖞 🕨						
	imate in Performance Adapter Management	🔹 Refresh						
□ ₩172.29.40.98	Map: C Storage C Network Parameter: C Fibre Channel C ISCSI © Ethernet							
REQLE8242:AFE1020C03081	General							
CLE8152:RFC0941P03903	System OS: VMware E5Xi 5.0.0 build-469512 System Vendor: Dell Inc.							
	System Model: PowerEdge R710 Provider Version: 1.6.12							
E QLE2562:LFC1008U83918	NIC Driver Version: 5.0.741							
	Parameters							
	✓ Enable automatic firmware recovery.							
	Enable TCP Segmentation Offload (TSO).							
	✓ Enable hardware VLAN support.							
	🔽 Enable hardware Large Receive Offload (LRO).							
	Enable firmware minidump support.							
	Finable Receive Netqueue support.							
	Enable checking of MAC address/MAC learning in the receive path.							
	Enable MSI interrupt handling.							
	Enable MSI-X interrupt handling.							
	Transmit Ring size: 1024 -							
	Receive Ring size for 1500 MTU: 512 •							
	Receive Ring size for jumbo (9000) MTU: 128 💌							
	Firmware minidump capture level mask: 0x1F							
	Number of receive netqueues per function (excluding default receive queue):							
	Save Configuration							

Figure 4-5. Host View—Ethernet Parameters

The **General** information section at the top of the window contains the following:

- System OS: Name and version of the host operating system
- System Vendor: Name of host manufacturer
- System Model: Model name of host
- Provider Version: Version of the CIM Provider
- NIC Driver Version: Version of the NIC driver

The **Parameters** section contains the following configurable parameters:

- Enable automatic firmware recovery: Select the check box to enable automatic firmware recovery, or clear the check box to disable this feature.
- Enable TCP Segmentation Offload (TSO): Select the check box to enable TCP segmentation offload, or clear the check box to disable this feature.
- Enable hardware VLAN support: Select the check box to enable hardware VLAN, or clear the check box to disable this feature.
- Enable hardware Large Receive Offload (LRO): Select the check box to enable hardware LRO, or clear the check box to disable this feature.

- Enable firmware minidump support: Select the check box to enable firmware minidump, or clear the check box to disable this feature.
- Enable Receive Netqueue support: Select the check box to enable Receive Netqueue support, or clear the check box to disable this feature.
- Enable checking of MAC address/MAC learning in the receive path: Select the check box to enable checking of MAC address and learning when configuring NPAR-supported devices. This feature must be enabled for NPAR configuration.
- Enable MSI interrupt handling: Select the check box to enable MSI interrupt handling. This parameter is enabled by default for all types of adapters.
- Enable MSI-X interrupt handling: Select the check box to enable MSI-X interrupt handling. If MSI-X fails at driver load time, the driver falls back to MSI.
- Transmit Ring size: Specify the transmit ring size for any NIC adapter. The default is adapter-dependent.
- Receive Ring size for 1500 MTU: Specify the 1,500 MTU receive ring size for any NIC adapter. The default is adapter-dependent.
- Receive Ring size for jumbo (9000) MTU: Specify the 9,000 MTU receive ring size for any NIC adapter. The default is adapter-dependent.
- **Firmware minidump capture level mask:** Choose the driver capture mask for firmware minidump, either:
 - Ox03—Capture mask 0x03
 - Ox07—Capture mask 0x07
 - Ox0F—Capture mask 0x0F
 - Ox1F—Capture mask 0x1F (default)
 - Ox3F—Capture mask 0x3F
 - Ox7F—Capture mask 0x7F
 - OxFF—Capture mask 0xFF
- Number of receive netqueues per function (excluding default receive queue): Choose the quantity of receive netqueues per function:
 - Two functions—seven per function
 - NPAR—one per function

To save your changes, click Save Configuration.

Managing Fibre Channel Adapters

When you select a Fibre Channel adapter from the system tree, the Adapter Management window appears in the content pane, as shown in Figure 4-6.

72.29.40.98 VMware ESXi, 5.0.0, 46 tarted Summary Virtual Machines	9512 Resource Allocation Perfo	ormance Configuration	Tasks & Events Ala	arms Permissions Maps Stora	ige Views 🔪 Hardware Status 🔰 QCI	onvergeConsole
	mate in Performance	Adapter Manag	ement			2 Refrest
0 🧸 172.29.40.98	General					
QLE8242:AFE1020C03081	Model:	QLE2562		Type:	Fibre Channel Adapter	
	PCI Bus Id:	4		Vendor Id:	1077	
□ 📴 QLE2562:LFC1008U84111	Serial Number:	LFC1008U84111		Chip Revision:	2	
- FC 21-00-00-1B-32-9F-	Subsystem Device Id:	15d		Subsystem Vendor Id:	1077	
OF-CD	Active Firmware Version:	5.06.02		Flash Firmware Version:	5.04.01	
	BIOS Version:	3.00		Multiboot Version:	N/A	
FC_21-01-00-1B-32-BF-	Personality Type Config	uration		Save		Reset
	Personality Type:	FC Only	O CNA			
	Commands					
	Update Adapter Flash	Image ad Table				

Figure 4-6. Adapter Management for Fibre Channel Adapter

Adapter Management Window

The Adapter Management window for Fibre Channel Adapters (see Figure 4-6) contains the **General** section, which displays the following read-only information:

- Model: Fibre Channel or FCoE adapter model
- **Type:** Either Fibre Channel Adapter or Converged Network Adapter
- PCI Bus ID: PCI bus number
- Vendor ID: Vendor ID information
- Serial Number: Serial number of the Fibre Channel Adapter
- **Chip Revision:** Chip revision number
- **Subsystem Device ID:** ID number of the subsystem device
- Subsystem Vendor ID: ID number of the subsystem vendor
- Active Firmware Version: Current active firmware version
- Flash Firmware Version: Current Flash firmware version
- BIOS Version: Current BIOS version
- Multiboot Version: Multiboot Flash kit version

The **Personality Type Configuration** section displays the following option:

Personality Type: The adapter's personality type is either FC Only (Fibre Channel) or CNA (Converged Network Adapter). The selected option indicates the adapter's current personality. To change the personality, select the other option, and then click Save. When instructed, reboot the machine.

The **Commands** section provides controls to update the following:

- Update Adapter Flash Image: Click this option to update the adapter's Flash image.
- Update Firmware Preload Table: Click this option to update the firmware preload table.
- Update Firmware SerDes Table: Click this option to update the firmware serializer/deserializer (SerDes) table. This option is not available for all adapters and is not shown in Figure 4-6.

Managing a Fibre Channel Adapter Port

To manage a port on a Fibre Channel adapter, select the port in the system tree. The Adapter Management window then appears as shown in Figure 4-7.

172.27.9.114 VMware E5Xi, 5.1.0, 1483097								
Getting Started Summary Virtual Machines Resource Allocat	ion Performance Configuration T	asks & Events Alarms Permissions Maps Storage V	Tews QConvergeConsole Hardware	: Status				
OLOGIC [*] The Ultimate in Performance	Adapter Management				🔹 Refresh			
e 💐 172.27.9.114	General	General						
QLE8242:RFE1317H72726	Product Identifier: QLE8362 QLogic 2-port 16Gb Fibre Channel Adapter							
QLE8362:RFE1315H65345	Link Status:	Online	Port Type:	Node Port				
FC_21-00-00-0E-1E-14-0E-91	Device Name:	vmhba6	Port Name:	50-00-53-37-E5-FB-F0-04				
FC_50-00-53-37-E5-FB-F0-04	Enk Speed: PCT Function Number:	16 Gbps	Maximum Speed: PCT Bus Number:	16 Gbps				
EBQLE2560:USJ1234567	Ter one on the per	•		•				
FC Cached Adapter Network	Commands							
	🚧 Set Beacon On							
	Past Parameters Transceiver Sta	tistics Diagnostics VPD Temperature OoS						
	Enable boot from the port.							
	Enable Fabric Assigned Boot LUN							
	Boot from the selected device(s): (*)						
	Boot Name	Target WWN		LUN Id				
	Primary Boot	00-00-00-00-00-00 🗸		0 🗸				
	Alternate Boot 1	00-00-00-00-00-00-00 🗸		0 🗸				
	Alternate Boot 2	00-00-00-00-00-00-00 🗸		0 🗸				
	Alternate Boot 3	00-00-00-00-00-00-00 🗸		0 🗸				
	(*) If boot is enabled and boot device se	election is disabled or not specified, the port will attempt to bo	ot from the first device found.					
		Save (Configuration					
					-			

Figure 4-7. Adapter Management Window—Fibre Channel Port

The **General** information section at the top of the content pane contains the following:

- Product Identifier
- Link Status
- Device Name
- Link Speed
- PCI Function Number
- Port Type
- Port Name
- Maximum Speed
- PCI Bus Number

The Beacon Test section of the content pane contains the following option:

Beacon On/Beacon Off—Click this to toggle the beacon from on to off, or off to on.

Below the identifying information is a row of buttons, as shown in Figure 4-8:

Boot	Parameters	Transceiver	Statistics	Diagnostics	VPD	Temperature	QoS
------	------------	-------------	------------	-------------	-----	-------------	-----

Figure 4-8. Fibre Channel Port—Information Selection

Click the following buttons to select the information to manage on the port:

- **Boot**—Boot configuration
- **Parameters**—Firmware parameters
- **Transceiver**—Transceiver information
- Statistics—Statistics information
- Diagnostics—Diagnostic tests
- VPD—Vital product data (VPD) information
- **Temperature**—Temperature information
- QoS—QoS information

The option that appears pressed in indicates the selected information (for example, **Boot** in Figure 4-8). The information for that option appears in the content pane. The following sections describe the Fibre Channel port information types:

- Boot Configuration—Fibre Channel Port
- Firmware Parameters—Fibre Channel Port
- Transceiver Information—Fibre Channel Port
- Statistics Information—Fibre Channel Port
- Diagnostic Tests—Fibre Channel Port
- VPD Information—Fibre Channel Port
- Temperature Information—Fibre Channel Port
- QoS Information—Fibre Channel Port

The world wide port name (WWPN) can be assigned by the fabric through a Brocade switch if both the adapter and Brocade switch are enabled to allow fabric-assigned WWPNs. For information about enabling fabric-assigned WWPNs, see the adapter user's guide and Brocade switch documentation.

In Figure 4-9, port 50-00-53-37-E5-FB-F0-04 is assigned by the fabric through the Brocade switch.

172.27.9.114 ¥Mware ESXi, 5.1.0, 1483097					1 1			
Getting Started Summary Virtual Machines Resource Alloca	ion Performance Configuration T	asks & Events 🔪 Alarms 🔪 Permissions 🔍 Maps 🔪 Storage	e Views Hardware Status QConvergeC	onsole				
OCC OCC The Ultimate in Performance	Adapter Management				🐔 Refresh			
E 172.27.9.114	General	General						
QLE8242:RFE1317H72726	Product Identifier:	QLE8362 QLogic 2-port 16Gb Fibre Channel Adapt	er					
🕀 📑 Port 1	Link Status:	Online	Port Type:	Node Port				
Port 2	Device Name:	vmhba6	Port Name:	50-00-53-37-E5-FB-F0-04				
Employees362:RFE1315H65345	Link Speed: DCI Exection Numbers	16 Gbps	Maximum Speed: DCT Bus Number	16 Gbps				
FC_21-00-00-0E-1E-14-0E-91	Per Pareatin Namber:	0	PCI bus Number.	4				
FC_50-00-53-37-E5-FB-F0-04	Commands							
EQLE2560:USJ1234567	🚧 Set Beacon On							
FC_21-00-00-24-FF-00-F2-68								
FC Cached Adapter Network	Boot Parameters Transceiver Stat	tistics Diagnostics VPD Temperature						
😑 🚚 Server List	Enable boot from the port.							
	Enable Fabric Assigned Boot LUN							
	Boot from the selected device(s): (*)						
	Boot Name	Target WWN		LUN Id				
	Primary Boot	00-00-00-00-00-00-00 🗸		0 🗸				
	Alternate Boot 1	00-00-00-00-00-00-00 V		0 ~				
	Alternate Boot 2	00-00-00-00-00-00-00 🗸		0 ~				
	Alternate Boot 3	00-00-00-00-00-00-00 ∨		0 ~				
	(*) If boot is enabled and boot device se	election is disabled or not specified, the port will attempt to	boot from the first device found.					
	L	Sav	ve Configuration					

Figure 4-9. Fabric-Assigned WWPN (50-00-53-37-E5-FB-F0-04)

The D_Port setting on the Brocade switch also appears as (**D-port**) in the adapter tree, as shown in Figure 4-10.



Figure 4-10. D_Port Label on WWPN (FC_21-00-00-0E-1E-14-0E-90)

For forward error correction (FEC) to be enabled for a connection, the port on the Brocade switch and the connected adapter port must have FEC enabled. In Figure 4-11, FEC is enabled on port FC 21-00-00-0E-1E-08-C2-00.

172.28.3.145 VMware ESXi, 6.0.0, 2461885							
Getting Started Summary Virtual Machines Re	esource Allocation Performance Conf	iguration Tasks & Events Alarm	s Permissions Maps QG	onvergeConsole			
Ά φιοgic	Adapter Manag	gement				💰 Refresh	
I72.28.3.145	General						
QLE2692:AFD1483Y00264	Product Identifier:	QLE8362 QLogic 2-port 16Gb	Fibre Channel Adapter				
FC_20-00-00-24-FF-78-31-60	Link Status:	Online		Port Type:	Node Port		
FC_20-00-00-24-FF-78-31-61	Device Name:	vmhba3		Port Name:	21-00-00-0E-1E-08-C2-00		
ImmOLE8362:AFE1226F05646	Link Speed: PCT Eurotian Number:	16 Gbps		Maximum Speed: BCT Bus Number:	16 Gbps		
	Per l'unedon Number.	0		PCI bus Number.	10		
FC_21-00-00-0E-1E-08-C2-01	Commands						
Adapter1: BCM5709 C0	🚧 Set Beacon On						
Port 0 Port 1	Book Parameters Transceiver Statistics Diagnostics VPD Temperature						
	Data Rate:		Auto 🗸				
Adapter2: BCM5709 C0	Connection Options:		1 - Point to Point Only	V			
Port 0	Frame Size:		2048				
🔶 Port 1	Login Retry Count:		8				
	Enable LR						
	✓ Enable FEC Support						
	Enable Fabric Assigned WWN						
			Save 1	Configuration			

Figure 4-11. FEC Enabled on Port FC_21-00-00-0E-1E-08-C2-00

Boot Configuration—Fibre Channel Port

When **Boot** is selected, the content pane appears as shown in Figure 4-12.

172.27.9.114 ¥Mware E5Xi, 5.1.0, 1483097						
Getting Started Summary Virtual Machines Resource	Allocation Performance Configu	ration Tasks & Events Alarms Permissions	Maps Storage Views Hardwa	re Status QConvergeConsole		
QLOGIC [®] The Ultimate in Performan	Adapter Manage	ment			🔺 🖈 Refresh	
😑 💐 172.27.9.114	General					
QLE8242:RFE1317H72726	Product Identifier:	QLE8362 QLogic 2-port 16Gb Fibre Channel	Adapter			
🕀 📑Port 1	Link Status:	Online	Port Type:	Node Port		
Port 2	Device Name:	vmhba6	Port Name:	50-00-53-37-E5-FB-F0-04		
EBQLE8362:RFE1315H65345	Enk Speed: PCT Eurotion Number:	16 Gbps 0	Maximum Speed: PCI Bus Number:	16 Gbps 4		
FC_21-00-00-0E-1E-14-0E-91			Ter bus Humbert			
FC_50-00-53-37-E5-FB-F0-04	Commands					
QLE2560:USJ1234567	🗯 Set Beacon On					
FC_21-00-00-24-FF-00-F2-68						
FC Cached Adapter Network	Boot Parameters Transceiver	Statistics Diagnostics VPD Temperature QoS				
😑 💐 Server List	Enable boot from the port.	Enable boot from the port.				
E 2019 - 2019	Enable Fabric Assigned Boot LU	IN				
⊕	Boot from the selected device(s): (*)				
	Boot Name	Target WWN		LUN Id		
	Primary Boot	00-00-00-00-00-00-00 ∨		0 🗸		
	Alternate Boot 1	00-00-00-00-00-00-00 ∨]	0 🗸		
	Alternate Boot 2	00-00-00-00-00-00-00 ∨		0 ~		
	Alternate Boot 3	00-00-00-00-00-00-00 ~		0 ~		
	(*) If boot is enabled and boot dev	ice selection is disabled or not specified, the port will a	ttempt to boot from the first device	e found.		
		Sa	we Configuration			

Figure 4-12. Fibre Channel Port—Boot Configuration

The content pane contains the following configurable parameters:

- Enable boot from the port: Select the check box to enable booting from the selected port, or clear the check box to disable booting from the port.
- Enable Fabric Assigned Boot LUN: Select the check box to enable booting from the fabric assigned boot LUN, or clear the check box to disable booting from the fabric assigned boot LUN.

When using the fabric-assigned boot LUN:

- The Fabric Assigned Boot LUN parameter must be enabled on both the initiator (adapter) and the Brocade switch for the FA-WWPN to be assigned to the adapter.
- □ If the Fabric Assigned Boot LUN parameter is disabled on the adapter and enabled on the Brocade switch, the FA-WWPN cannot be assigned to the adapter.
- If the Fabric Assigned Boot LUN parameter is enabled on the adapter and disabled on the Brocade switch, the FA-WWPN cannot be assigned to the adapter.
- Boot from the selected device(s): Select the check box to allow booting from a boot device that you specify. Clear the check box to disable this feature.

The following options are available only if **Boot from the selected device(s)** is selected:

- Primary Boot: Specify the primary boot device by selecting its worldwide name in Target WWN, and then select the device's LUN ID in LUN ID.
- Alternate Boot 1/2/3: Specify three alternate boot devices by selecting their worldwide names in Target WWN, and their LUN IDs in LUN ID.

To save your changes, click Save Configuration.

Firmware Parameters—Fibre Channel Port

If the **Parameters** button is selected, the content pane appears as shown in Figure 4-13.

172.29.40.98 VMware ESXi, 5.0.0, 48 Started Summary Virtual Machines	59512 Resource Allocation Perf	formance Configuration T	asks & Events Alarms Permissions Maps	Storage Views Hardware Status QConvergeConsole
	imate in Performance	Adapter Managem	nent	a Refresh
😑 💐 172.29.40.98	General			
① ② ③	Product Identifier:	PCI-Express Dual Cha	annel 8Gb Fibre Channel HBA	
① Description of the second	Link Status:	Online	Port Type:	Node Port
😑 📴 QLE2562:LFC1008U84111	Device Name:	vmhba2	Port Name:	21-00-00-1B-32-9F-0F-CD
FC_21-00-00-1B-32-9F-	Link Speed:	8 Gbps	Maximum Speed:	8 Gbps
OF-CD	PCI Function Number:	0	PCI Bus Number:	4
FC_21-01-00-1B-32-8F- 0F-CD @ QLE2562:LFC1008U83918	Beacon Test			
	Boot Parameters Trans	ceiver Statistics Diagnostics	VPD	
	Data Rate: Connection Options: Frame Size: Login Retry Count: ☑ Enable LIP Full Login.		Auto 2 - Loop Preferred, Otherwise Point to Point 2048 8	
			Save Configuration	

Figure 4-13. Fibre Channel Port—Firmware Parameters

The content pane contains the following configurable parameters:

- **Data Rate:** Determines the adapter port data rate:
 - □ When this setting is **32Gbps**, the 27*xx* adapter port runs at 32Gbps.
 - The FCoE ports can run at **10Gbps**.
 - □ When this setting is **16Gbps**, the 26*xx* adapter port runs at 16Gbps.
 - □ When this setting is **8Gbps**, 25*xx* and 26*xx* adapter ports run at 8Gbps.
 - □ When this setting is **4Gbps**, the 24*xx*, 25*xx*, and 26*xx* adapter ports run at 4Gbps.
 - ❑ When this setting is Auto, QConvergeConsole determines what rate your system can accommodate and sets the rate accordingly. The default is Auto.
- Connection Options: Defines the type of connection (loop or point-to-point) or connection preference.

- Frame Size: Specifies the maximum frame length supported by the adapter. The default size is 2,048 for both the Fibre Channel 2700/2600 Series adapters and FCoE 578xx/41000 Series adapters, which provides maximum performance for F_Port (point-to-point) connections.
- Login Retry Count: Specifies the number of times the software tries to log in to a device. The default is eight retries.
- Enable LIP Full Login: Instructs the ISP chip to re-log in to all ports after any loop initialization process (LIP). The default is enabled.

To save your changes, click Save Configuration.

Transceiver Information—Fibre Channel Port

If the **Transceiver** button is selected, the content pane appears as shown in Figure 4-14.

172.29.40.98 ¥Mware ESXi, 5.0.0, 40	59512					•
3 Started Summary Virtual Machines	Resource Allocation	Performance Configuration	Tasks & Events A	larms Permissions Maps	Storage Views Hard	ware Status QConvergeConsole
	imate in Performanc	e Adapter Manag	gement			🖉 Refresh
😑 💐 172.29.40.98	General					
🕀 💷 QLE8242:AFE1020C03081	Product Identifier:	PCI-Express Dua	l Channel 8Gb Fibre (hannel HBA		
QLE8152:RFC0941P03903	Link Status:	Online		Port Type:	Node Port	
😑 🚾 QLE2562:LFC1008U84111	Device Name:	vmhba2		Port Name:	21-00-00-	1B-32-9F-0F-CD
FC_21-00-00-1B-32-9F-	Link Speed:	8 Gbps		Maximum Speed;	8 Gbps	
OF-CD	PCI Function Number	; 0		PCI Bus Number:	4	
Target_50-06-01-60- 41-E0-63-25						
FC 21-01-00-1B-32-BF-	Beacon Test					
OF-CD	🚧 Beacon On					
① QLE2562:LFC1008U83918 ③						
	Boot Parameters	Transceiver Statistics Diagno	ostics VPD			
	Transceiver Infor	mation				Refresh
	Vendor: Identifier: Part Number: Connector: Revision:	Vendor: FINISAR CORP. Identifier: SFP Part Number: FTLF8528P2BCV-QL Connector: LC			800-M6-SN-S GBIC/SFP defined 200 MBytes/Sec, PGS0¥2K No	by serial ID only 400 MBytes/Sec, 800 MBytes/Sec
		Temperature (C)	Voltage (V)	Tx Bias (mA)	Tx Power (m₩)	Rx Power (mW)
	Yalue	35.05	3.35	7.50	0.4602	0.4807
	Status	Normal	Normal	Normal	Normal	Normal
	High Alarm	75.00	3.70	17.00	0.6310	1.2589
	• High Warning	70.00	3.60	14.00	0.5623	1.0000
	Low Warning	-5.00	3.00	2.00	0.1585	0.0158
	Low Alarm	-10.00	2.90	1.00	0.1259	0.0100

Figure 4-14. Fibre Channel Port—Transceiver Information

The content pane displays the following read-only information:

- Vendor: Transceiver manufacturer
- **Type:** Transceiver type
- Identifier: Transceiver form factor

- **Ext. Identifier:** Additional information about the transceiver
- Part Number: Transceiver part number
- **Speed:** Transceiver transmission speed
- **Connector:** Transceiver external optical or electrical cable type
- Serial Number: Transceiver serial number
- **Revision:** Vendor revision level
- QLogic SFP installed: Yes, if a QLogic SFP is installed; No, if an unsupported SFP is installed, or no SFP is installed.

A table at the bottom of the content pane displays information for the following transceiver characteristics: **Temperature**, **Voltage**, **Tx Bias**, **Tx Power**, and **Rx Power**. The information displayed for each of these characteristics includes:

- Value: Current value
- **Status:** Current status
- High Alarm: If a datum exceeds this value, the conditions are likely to cause an inoperable link and require immediate action.
- High Warning, Low Warning: Warnings indicate conditions outside the normally guaranteed bounds, but are not necessarily causes for immediate link failures.
- Low Alarm: If a datum is less than this value, the conditions are likely to cause an inoperable link and require immediate action.

Statistics Information—Fibre Channel Port

If the **Statistics** button is selected, the content pane appears as shown in Figure 4-15.

A QLOGIC The Ul	imate in Performance	Adapter Managem	ant				💈 Refres
172.29.40.98	General						
QLE8242:AFE1020C03081	Product Identifier:	PCI-Express Dual Cha	inel 8Gb Fibre C	hannel HBA			
QLE8152:RFC0941P03903	Link Status:	Online		Port Type		Node Port	
QLE2562:LFC1008U84111	Device Name:	vmhba2		Port Name	e:	21-00-00-1B-32-	9F-0F-CD
FC_21-00-00-1B-32-9F-	Link Speed:	8 Gbps		Maximum	Speed:	8 Gbps	
OF-CD	PCI Function Number:	0		PCI Bus N	lumber:	4	
 41-E0-63-25 ■ FC_21-01-00-18-32-8F- 0F-CD ■ QLE2562:LFC1008U83918 	Beacon Test Beacon On Boot Parameters Transc	eiver Statistics Diagnostics	VPD				
						Re	set Refr
	FC Statistics					12	
	FC Statistics Number of IOs:	240196		Throughp	ut in Megabytes:	13	10
	FC Statistics Number of IOs: Number of Interrupts:	240196 0		Throughp Number ol	ut in Megabytes: f LIP Resets:	13	10
	FC Statistics Number of IOs: Number of Interrupts: Link Failure:	240196 0 0		Throughp Number of Invalid CR	ut in Megabytes: f LIP Resets: :Cs:	13 1 0	10
	FC Statistics Number of IOs: Number of Interrupts: Link Failure: Loss of Sync: Controller Errors:	240196 0 0 0 0 0		Throughp Number of Invalid CR Loss of Sig Device Err	ut in Megabytes: f LIP Resets: :Cs: gnal: rors:	13 1 0 0 0	10
	FC Statistics Number of IOs: Number of Interrupts: Link Failure: Loss of Sync: Controller Errors: Invalid Transmission Words:	240196 0 0 0 0 0		Throughpi Number of Invalid CR Loss of Sig Device Err Sequence	ut in Megabytes: f LIP Resets: :Cs: gnal: rors: Protocol Errors:	13 1 0 0 0 0 0	10
	FC Statistics Number of IOs: Number of Interrupts: Link Failure: Loss of Sync: Controller Errors: Invalid Transmission Words: Target port Name	240196 0 0 0 0 0 0 Uink Failure	Sync Loss	Throughpi Number of Invalid CR Loss of Sig Device Err Sequence Signal Loss	ut in Megabytes: f LIP Resets: CS: gnal: rors: Protocol Errors: Invalid CRC	13 1 0 0 0 0 5eq Proto Error	10 Invalid Trans Word

Figure 4-15. Fibre Channel Port—Statistics Information

NOTE

Selecting the **Reset** option permanently clears the counters. Any tools that use these counters for historical trending must be readjusted.

The content pane reports the following read-only statistics information:

- **Number of IOs:** Quantity of I/Os generated by the adapter port per second
- Throughput in Megabytes: Throughput generated by the adapter port in megabytes
- **Number of Interrupts:** Quantity of interrupts
- Number of LIP Resets: Quantity of LIP resets
- Link Failure: Quantity of times the link has failed
- Invalid CRCs: Quantity of frames received that contain CRC failures
- Loss of Sync: Number of times loss of synchronization has occurred
- Loss of Signal: Number of times the signal was lost

- **Controller Errors:** Quantity of controller errors
- Device Errors: Quantity of device errors
- Invalid Transmission Words: Total quantity of invalid words transmitted by this adapter port
- Sequence Protocol Errors: Sequence protocol error count

Diagnostic Tests—Fibre Channel Port

If the **Diagnostics** button is selected, the content pane appears as shown in Figure 4-16.

□ 172.27.15.195 □ 172.27.15.195 □ 172.27.0.109	172.27.0.109 VMware ESXI, 6.0.0, 5050593 Evaluation (33 days remaining) Summary Virtual Machines Resource Allocation Performance Configuration Tas	sks & Events Alarms Permissions Maps QConve	ergeConsole		
277	Χ φιοgic	Adapter Manage	ment		Refresh
	IT2.27.0.109	General			
	[mgQLE2692:AFD1533Y02950 [0] [mgQLE2692:AFD1533Y02950 [0] [mgQL21:00:00-24+FF-8F-C9-F4 [mgQL22692:AFD1533Y02952 [0] [mgQL22692:AFD1533Y02952 [0] [mgQL21:00:002-44+F8-CA-32 [0]	Product Identifier: QLo Link Status: Onli Device Name: vmh Link Speed: 32 C Principal Fabric WWN: 10-1 PCI Function Number: 0	gic 326b 2-port FC to PCIe Gen3 x8 Adapter ine ba5 Sbp5 00-00-27-F8-F1-66-A0	Supported Speed(s): Port Type: Port Name: Maximum Speed: Adjacent Fabric WWN: PCI Bus Number:	2 Gbps / 4 Gbps / 8 Gbps / 10 Gbps / 16 Gbps Node Port 21-00-00-24-FF-75-41-F4 32 Gbps 20-03-00-27-F8-F1-66-A0 10
 ■ fc_21-0 ■ fc_21-0 ■ fc_21-0 ■ fc_21-0 	Ber C_21-00-00-24-FF-8F-CA-33 Jeg QLE2742:RFD16100(18909 Ber C_21-00-00-24-FF-75-41-F4 (FEC) Ber C_21-00-00-24-FF-75-41-F5 (FEC)	Commands Set Beacon On Boot Parameters Transce	iver Statistics Diagnostics VPD Temperature		
		Selection	Loopback Test		
		Loopback Test Read-Write Buffer Test FC Ping FC Echo CT Ping CT FC Trace Route Firmware Debug Dump Diagnostics Port Test RDP	Test Configuration: Data Pattern: Number of test(s) (1-65535): Test Increment (1-65535): Data Size (Bytes): On Error: Test continuously	Random Image: Constraint of the second	100 100 100 100
			l est kesuit		

Figure 4-16. Fibre Channel Port—Diagnostics

In the content pane, select the type of diagnostic test to perform: **Loopback Test** or **Read-Write Buffer Test**. Then, under **Test Configuration**, specify the following test parameters:

Data Pattern: Select the type of data pattern (jitter pattern) to use in the test. Or, type the pattern to use into the boxes provided.

Data pattern sequences are the bit sequences that are transmitted by a serializer onto a link or bit sequences received by a deserializer from a link. The data pattern sets the test pattern for evaluating the jitter compliance of a Fibre Channel link. Test bit sequences have a significant impact on stressing the link's jitter characteristics.

For more information see American National Standards Institute (ANSI), Fibre Channel – Methodologies for Jitter and Signal Quality Specification – MJSQ, Annex A - Test bit sequences. In addition to selecting a data pattern, you must also specify the **Data Size (Bytes)**. The maximum data size available is dependent on the frame size of the device you are testing and the kind of test you are conducting. For more information about frame size, see "Firmware Parameters—Fibre Channel Port" on page 38.

□ Loopback and echo tests support data sizes from 8 bytes to 2,048 (2K) bytes.

NOTE

For Linux operating systems only, the following data size values apply: 2048, 4096, 8192, up to 65535 (2K bytes to 64K bytes).

NOTE

Echo tests are available when the **HBA Port Connection Option** is set to **Point to Point Only**. If the connection option is set to **Loop Only**, the loopback test is available.

Read/write buffer tests support data sizes from 8 bytes to 128 bytes.

Table 4-1 lists the available data patterns.

Table 4-1. Data Patterns Available for Use

Data Pattern	Bit Sequence
00	0000000
55	01010101
5A	01011010
A5	10100101
AA	10101010
FF	11111111

To set test parameters on the HBA Diagnostics page:

- 1. From the **Data Pattern** list, do one of the following:
 - Select a data byte or compliant jitter pattern.
 - □ Click **Customized** to specify an eight-byte pattern. Type the data in hexadecimal format (00–FF) into the eight **Customized** boxes.
 - Click **Random** to randomly generate an eight-byte data pattern.

The data size sets the quantity of bytes transferred per test per iteration when the test is run.

- 2. From the **Data Size** list, specify the quantity of bytes to transfer. Allowed values are 8, 16, 32, 64, 128, 256, 512, 1024, and 2048.
- 3. To set the test frequency, do one of the following:
 - □ In the **Number of Tests** box, type or select the quantity of tests you want to run. Testing stops when the passes complete. The valid range is between 1 and 65,536.
 - Select the **Test Continuously** check box. You determine when testing stops.
- 4. For **On Error**, select one of the following to determine how errors are handled. This selection applies whether you entered the quantity of tests or opted to test continuously.
 - **Ignore on Error:** Ignores errors and continues the test sequence.
 - **Stop on Error:** Stops the test sequence when an error is encountered.
 - □ **Loop on Error:** Uses the same data pattern and tests until the failure is cleared.
- 5. In the Test Increment box, type or select the quantity of passes you want to run before the test stops. The valid range is between 1 and 10,000, and must be less than or equal to the value in the Number of Tests box (see step 3). For example, if the Number of Tests box contains 100 and the Test Increment box contains 15, 100 tests are run in seven passes. The first six passes run 15 tests each; the seventh pass runs 10 tests (6 × 15 + 10 = 100).
- 6. When you finish setting the diagnostic test parameters, you are ready to start diagnostic testing. To begin the selected test, click **Start Test**.

When the test is finished, the test results are displayed in the **Test Result** section of the content pane.

When a target with LUNs is connected to the port, you can conduct a ping test to any target in the table. To conduct a ping test, select a target in the table, specify the quantity of tests, and then click **Start Test**. The status for each test appears in the **Result** column, as shown in Figure 4-17. The CT Ping and CT FC Trace Route ping tests are conducted in a similar fashion. However, to successfully run a CT Ping or a CT FC Trace Route ping test, the fabric must contain a Brocade switch.

172.27.9.112 VMware E5Xi, 5.5.0, 1331820						•
Getting Started Summary Virtual Machines Resource Allocat	ion Performance Configuration T	asks & Events 🛛 A	larms Permissions Maps Storag	e Views Hardware Status QConve	ergeConsole	1
OCC The Ultimate in Performance	Adapter Management					🐔 Refresh
. 172.27.9.112	General					
QLE8362:RFE1250H08700	Product Identifier:	PCI-Express D	ual Channel 8Gb Fibre Channel HBA	1		
Port 1	Link Status:	Online		Port Type:	Node Port	
Port 2	Device Name:	vmhba5 8 Choc		Port Name: Maximum Encode	21-00-00-24-FF-32-FA-26	
QLE8242:RFE1314H59588	PCI Function Number:	8 GDps 0		PCI Bus Number:	33	
Port 1		-				
Port 2	Commands					
QLE2562:LFD1115N06966	🚧 Set Beacon On					
FC_21-00-00-24-FF-32-FA-26						
Target_B2-44-00-11-0D-05-00-00	Boot Parameters Transceiver Sta	tistics Diagnostics	s VPD			
SINN_0	Selection	CT Ping Test				
FC_21-00-00-24-FF-32-FA-27	Loopback Test	Test Configu	ration:			
FC Cached Adapter Network	Read-Write Buffer Test	O Select Ta	arget(s) to perform CT Ping Test			
😑 💐 Server List	FC Ping	Number of tes	t(s) (1-65535):	1		
B 2010 - 2010	CT Ping		Target Port WWN		Result	
⊕ ↓ 53d93917-0a22-d889-0d7e-9c8e9959ad66	CT FC Trace Route	~	B2-44-00-11-0D-05-00-00		Success (0 milliseconds)	
			1	🜔 Start Test		
						*
						×

Figure 4-17. Fibre Channel Port—Ping Test Results

Retrieving Adapter Information

To view information for 2500/2600/2700 Series Adapters, select Adapter Management, Diagnostics, then **Retrieve Adapter Information**.

Select one of the available buttons:

FW Table

Saves the Firmware Preload table contents to a readable text file.

- NVRAM Configuration
 Saves NVRAM contents to a readable text file.
 - Saves the SerDes information to a readable text file.

NOTE

Information retrieved is view-only and no configuration changes can be made.

VPD Information—Fibre Channel Port

If the **VPD** button is selected, the content pane appears as shown in Figure 4-18.

172.27.3.153	General			
QLE8242:AFE4393A43928	Product Identifier:	QLogic PCI-Express Dual Channel 16Gb Fibr	re Channel HBA	
Port 1	Link Status:	Loop down	Port Type:	Node Port
Port 2	Device Name:	vmhba2	Port Name:	21-00-00-0E-1E-08-4D-I
QLE8362:AAP4827A48273	Link Speed:	0 Gbps	Maximum Speed:	16 Gbps
😑 🛗 Port 1	PCI Function Number:	0	PCI Bus Number:	24
• Function_2 • Inction_4 NIC Function_6 ⊕ Image Port 2	Boot Parameters Transc	reiver Statistics Diagnostics VPD		
200NC375i:KD03MP4131	Port Vital Product Data	(VPD)		
Port 1 Port 2 Port 3	Product Identifier Part Number Serial Number	QLogic PCI-Express Dual Channel 16 QLE2662 AAP3423A34238	iGb Fibre Channel HBA	

Figure 4-18. Fibre Channel Port—VPD Information

The content pane also contains the following read-only VPD information:

- Product Identifier: Adapter product identifier
- Part Number: Adapter part number
- Serial Number: Adapter serial number

Temperature Information—Fibre Channel Port

If the **Temperature** button is selected (if available), the content pane appears as shown in Figure 4-19. To begin monitoring temperature, specify the monitoring rate, and then click **Start**. To stop monitoring, click **Stop**.

172.27.9.114 ¥Mware ESXi, 5.1.0, 1483097					•
Getting Started Summary Virtual Machines Resource Allocal	ion Performance Configuration Ta	fasks & Events Alarms Permissions Maps Storage Views	s QConvergeConsole Hardware Sta	tus l	1
OCC The Ultimate in Performance	Adapter Management				🐔 Refresh
#172.27.9.114	General				
QLE8242:RFE1317H72726	Product Identifier:	QLE8362 QLogic 2-port 16Gb Fibre Channel Adapter			
Port 1	Link Status:	Online	Port Type:	Node Port	
Port 2	Link Speed	vmhba6 16 Gbns	Port Name: Maximum Speed:	50-00-53-37-E5-FB-F0-04	
QLE8362:RFE1315H65345	PCI Function Number:	0	PCI Bus Number:	4	
FC_21-00-00-0E-1E-14-0E-91					
FC_50-00-53-37-E5-FB-F0-04	Commands				
EBQLE2560:USJ1234567	🚧 Set Beacon On				
FC_21-00-00-24-FF-00-F2-68					
FC Cached Adapter Network	Boot Parameters Transceiver Stat	atistics Diagnostics VPD Temperature QoS			
😑 💐 Server List	Current temperature: 32.0°C	Monitoring rate (seconds):	15 🗘	Start	Stop
B \$\$52dda1fc-2df9-8524-9189-9c8e9959ac94	100				
	95				
	85				
	80				
	70				
	60				
	τ 55 50				
	45				
	35				
	30				
	20				
	15				
	5				
	, v				
	•				• -

Figure 4-19. Fibre Channel Port—Temperature Information

QoS Information—Fibre Channel Port

If the **QoS** button is selected, the content pane appears as shown in Figure 4-20.

172.27.9.114 YMware ESXi, 5.1.0, 1483097							
Getting Started Summary Virtual Machines Resource Allocat	tion Performance Configuration T	asks & Events Alarms Permissions Maps Storage V	/iews Hardware Status QConvergeC	onsole			
QLOGIC The Ultimate in Performance	Adapter Management				💈 Refresh		
e 💐 172.27.9.114	General						
QLE8242:RFE1317H72726	Product Identifier:	QLE8362 QLogic 2-port 16Gb Fibre Channel Adapter					
🕀 🛅 Port 1	Link Status:	Online	Port Type:	Node Port			
Port 2	Device Name:	vmhba6	Port Name:	21-00-00-0E-1E-14-0E-90			
QLE8362:RFE1315H65345	EInk Speed: PCI Function Number:	16 GDps	Maximum Speed: PCT Bus Number:	16 GDps 4			
FC_21-00-00-0E-1E-14-0E-90				-			
FC_21-00-00-0E-1E-14-0E-91	Commands						
Emplement 2010 - 201	🚧 Set Beacon On						
FC_21-00-00-24-FF-00-F2-68							
😑 💑 FC Cached Adapter Network	Boot Parameters Transceiver Stat	tistics Diagnostics VPD Temperature QoS					
😑 💐 Server List	QoS		Add	Save	Refresh		
		1					
	Priority	vi	Port WWPN		Delete		
	b Low Medium His	gh 28-2E-0	0-0C-29-00-00-02				
	Low Medium His	ah =	0-0C-29-00-00-07				
	Low Medium His	gh 28-3A-0	0-0C-29-00-00-08				
	Low Medium His	gh 28-3A-0	0-0C-29-00-00-09				
	Low Medium His	gh =0 28-3A-0	0-0C-29-00-00-0A				
	-	2					

Figure 4-20. Fibre Channel Port—QoS Information

- To assign a priority value to a virtual port, move the slide to the chosen position, and then click **Save**. To refresh the table, click **Refresh**.
- To delete an entry from the table, select the **Delete** check box, and then click **Save**.

To add an entry to the table, click Add to insert a row in the new entry table (above the QoS table), as shown in Figure 4-21. Specify the port WWN and the priority, and then click Save.

172.27.9.114 Whware ESXi, S.1.0, 1483097								
Getting Started Summary Virtual Machines Resource Allocation Performance Configuration Tasks & Events Alarms Permissions Maps Storage Views Hardware Status QConvergeConsole								
CALOGIC [®] The Ultimate in Performance	Adapter Management							
e 💐 172.27.9.114	General							
QLE8242:RFE1317H72726	Product Identifier: QLE8362 QLogic 2-port 16Gb Fibre Channel Adapter							
Port 1	Link Status: Online		Port Type:	Node Port				
Port 2	Device Name:	vmhba6	Port Name:	21-00-00-0E-1E-14-0E-90				
Imple8362:RFE1315H65345	Link Speed: PCT Function Number:	16 Gbps	Maximum Speed: PCT Bus Number:	16 Gbps				
FC_21-00-00-0E-1E-14-0E-90	retruicion number: 0 retruicion number: 4							
FC_21-00-00-0E-1E-14-0E-91	Commands							
EBQLE2560:USJ1234567	344 Set Beacon On							
FC_21-00-00-24-FF-00-F2-68								
FC Cached Adapter Network	Boot Parameters Transceiver Statistics Diagnostics VPD Temperature 005							
😑 💐 Server List	Qo5 Add Save Refresh							
	Priority	vPr	ort WWN		Delete			
	In the table of the second secon							
	Cov Medium High 00 100 100 100 100 100							
					Delete			
	Priority	VP4	OPE WWPN					
	Low Medium Hig	28-2E-00	-0C-29-00-00-02					
	Low Medium Hig	1h 28-3A-00	-0C-29-00-00-07					
	Low Medium Hig	lh 1 28-3A-00	-0C-29-00-00-08					
	Low Medium Hig	28-3A-00	-0C-29-00-00-09					

Figure 4-21. Fibre Channel Port—Adding an Entry to the QoS Table

Managing Converged Network Adapters

The vCenter Server Plug-in allows you to configure and view identifying information for the adapter itself, a physical port on the adapter, or a physical function on one of the adapter ports, as described in the following sections:

- Managing a Converged Network Adapter
- Managing a Port on a Converged Network Adapter
- Managing NIC Functions on a Converged Network Adapter
- Managing FCoE Functions on a Converged Network Adapter
- Managing iSCSI Functions on a Converged Network Adapter

Managing a Converged Network Adapter

To manage a Converged Network Adapter, select the adapter in the system tree. The Adapter Management window appears in the content pane, as shown in Figure 4-22.

172.29.40.98 VMware E5Xi, 5.0.0, 469512								
3 Started Summary Virtual Machines Resource Allocation Performance Configuration Tasks & Events Alarms Permissions Maps Storage Views Hardware Status QConvergeConsole 4								
	imate in Performance	Adapter Management		🔹 Refresh				
😑 💐 172.29.40.98	General							
QLE8242:AFE1020C03081	Model:	QLE8242	Туре:	Converged Network Adapter (CNA)				
🕀 🔚 Port 1	PCI Bus Id:	6	Vendor Id:	1077				
🕀 🔚 Port 2	Serial Number:	AFE1020C03081	Chip Revision:	54				
⊕ Bus QLE8152:RFC0941P03903	Subsystem Device Id:	207	Subsystem Vendor Id:	1077				
	Active Firmware Version:	4.9.34	Flash Firmware Version:	4.09.34				
OLE2562:LFC1008U83918 OLE2562:LFC1008U83918 OLE2562:LFC1008U83918 OLE2562:LFC1008U83918 OLE2562:LFC1008U83918 OLE2562:LFC1008U83918 OLE2562:LFC1008U83918 OLE2562:LFC1008U83918 OLE2562:LFC1008U83918 OLE2562:LFC1008U83918 OLE2562:LFC1008U83918 OLE2562:LFC1008U83918 OLE2562:LFC1008U83918 OLE2562:LFC1008U83918 OLE2562:LFC1008U83918 OLE2562 OLE2562:LFC1008U83918 OLE2562 OLE25 OLE2562 OLE25 OLE2562 OLE25 OLE25	BIOS Version:	N/A	Multiboot Version:	1.8.35				
	🐖 Update Adapter Flash Image							

Figure 4-22. Adapter Management Window for Converged Network Adapter

The Adapter Management window (Figure 4-22) displays information for the selected adapter. The window contains the **General** section, which lists the following read-only information for the selected adapter:

- Model: Adapter model number
- **Type:** Adapter type (Converged Network Adapter)
- PCI Bus ID: PCI bus identifier
- Vendor ID: Adapter vendor identifier
- Serial Number: Adapter serial number
- Chip Revision
- Subsystem Device ID
- Subsystem Vendor ID
- Active Firmware Version: Active firmware version
- Flash Firmware Version: Flash firmware version
- BIOS Version: BIOS version
- Multiboot Version: Multiboot version

Managing a Port on a Converged Network Adapter



To manage a Converged Network Adapter port, select the port in the system tree. The Adapter Management window then appears as shown in Figure 4-23.

Figure 4-23. Adapter Management Window for Converged Network Adapter Port

The Adapter Management window for Converged Network Adapter ports contains the following sections.

General Section

The **General** section displays the following read-only information for the selected adapter port:

- Port Number: Adapter port number
- Management Function
- Serial Number: Adapter serial number
- Device Number
- Number of Function
- Number of eSwitch

Function Bandwidth Weight Assignment

The function bandwidth weight assignment chart shows the bandwidth percentages for the various functions.
Managing NIC Functions on a Converged Network Adapter

To manage a NIC function on a Converged Network Adapter port, select the NIC function in the system tree. The Adapter Management window then appears as shown in Figure 4-24.

172.29.40.98 ¥Mware E5Xi, 5.0.0, 46	9512			•
3 Started Summary Virtual Machines	Resource Allocation Performance Configuration Tasks & Eve	ents Alarms Permissions Ma	aps Storage Views Hardw	are Status QConvergeConsole 4
	nate in Performance Adapter Management			🔹 Refresh
😑 💐 172.29.40.98	General			
QLE8242:AFE1020C03081	Function Type: NIC	Link Status:	Link Up	
😑 🔚 Port 1	PCI Function Number: 0	MAC Address:	00:0E:1E:04	:7F:40
NIC Function_0	Interface Name: vmnic6	Link Speed:	10 Gbps	
NIC Function_2	NPAR Parameters Statistics Diagnostics VPD			
NIC Function_4	Function: Rendwidth O Tune eSwitch: O Statist			
■ Foot Function_6	Assist Supplier Desiduities			
		Aujusteu	i Oyerali Dahuwich Assiyili	
Target_20-00-00- 11-0D-5F-00-00 Target_20-00-00- 11-0D-5F-00-01 Target_20-01-00- 11-0D-5F-01-00 EUN_1 EUN_1	100 100 90 90 80 70 60 50 50 90 20 90	Selected Unselect	FCOE	Unallocated
	10			Manufacture Dim (A)
	0 F0 F2 F4	Func 0	BW Weight (%)	Maximum BW (%)
	🖌 Bandwidth Weight 📃 Maximum Bandwidth	h Func_o	0	100
	0%	runc_2	0	100
	0 10 20 30 40 50 60 70	80 90 100	U	100

Figure 4-24. Adapter Management Window—PCI Function

The **General** section at the top of the content pane contains the following non-configurable information:

- **Function Type:** Type of function (NIC)
- Link Status: Link status (Up or Down)
- **PCI Function Number:** 0, 2, 4, or 6 for Port 1; 1, 3, 5, or 7 for Port 2
- MAC Address: PCI function MAC address
- Interface Name: Name of the NIC port
- Link Speed: Adapter transmission speed

Below the general information is a row of buttons, as shown in Figure 4-25.

NPAR Parameters Statistics Diagnostics DCBX DCBX TLV VPD

Figure 4-25. Converged Network Adapter NIC Function—Information Selection

These buttons let you select the information to manage for the NIC function:

- NPAR—NIC partitioning configuration
- **Parameters**—Firmware parameters
- Statistics—Statistics information
- Diagnostics—Diagnostic tests
- DCBX—DCBX and ETS values
- DCBX TLV—DCBX TLV values
- VPD—VPD Information

The button that appears pressed in indicates the selected information (for example, **NPAR** in Figure 4-25). The selected information is displayed in the content pane. The different types of information for a NIC function are described in the following sections:

- NPAR Configuration—NIC Function
- Firmware Parameters—NIC Function
- Statistics Information—NIC Function
- Diagnostics Tests—NIC Function
- DCBX Information—NIC Function
- DCBX TLV Information—NIC Function
- VPD Information—NIC Function

NPAR Configuration—NIC Function

If the **NPAR** button is selected, the content pane appears as shown in Figure 4-26.

172.29.40.98 ¥Mware E5Xi, 5.0.0, 46	172.29.40.98 VMware E5Xi, 5.0.0, 469512						
3 Started Summary Virtual Machines	1 Started Summary Virtual Machines Resource Allocation Performance Configuration Tasks & Events Alarms Permissions Maps Storage Views Hardware Status QConvergeConsole 🚺						
	nate in Performance Adapt	er Managei	ment				💰 Refresh
😑 💐 172.29.40.98	General						
QLE8242:AFE1020C03081	Function Type: NIC			Link 9	Status:	Link Up	
😑 🔚 Port 1	PCI Function Number: 0			MAC	Address:	00:0E:1E:0	04:7F:40
NIC Function_0	Interface Name: vmr	nic6		Link S	Speed:	10 Gbps	
NIC Function_2	NPAR Parameters Statistics Diag	nostics VPD					
NIC Function_4	Function: Rendwidth O Ty	eSwitch:	OStatistics	C Configuration			
■ F® Function_6	Accies Function Readwith:	pe	 Diadistics 	Configuration		0	
Target_20-02-00- 11-0D-79-00-00	Assign Function Bandwicn:	E0 E2	E 4		Aajustea	overali bandwich Assign	iment
Target 20-00-00-	100	FU FZ	F 4				
11-0D-5F-00-00	90	_					
Target_20-00-00- 11-0D-5F-00-01	80	_					
Target_20-01-00- 11-0D-5F-01-00	70	-				FCoF	Unallocated
S LUN_O	60	-					Chanobaloa
₿LUN_1	50	-		Selected			
🕀 🛗 Port 2	40			Oliselect			
QLE8152:RFC0941P03903	30						
🙂 📴 QLE2562:LFC1008U84111	30						
① ① ① ①	20	-			Current A	ctive Bandwith Assignm	nent
		-				BW Weight (%)	Maximum BW (%)
					Func 0	0	100
	✔ Bandwidth Weight	Maximum B	landwidth		Func 2	0	100
	0%				- Func_4	0	100
		50 60	70 E	30 90 100	_		
		· · · ·		· · · ·			
	Sa	ve Configuration	n				

Figure 4-26. Converged Network Adapter NIC Function—NPAR Configuration

The content pane varies depending on which **Function** is selected:

- Bandwidth allows you to view and set the bandwidth allocation for the NIC function. For detailed information, refer to "Bandwidth Allocation" on page 55.
- **Type** shows the current function type and allows you to change the function type. For detailed information, refer to "Function Type" on page 56.

Bandwidth Allocation

Selecting the **Bandwidth** option displays the current bandwidth allocation settings in the content pane, and allows you to change the settings as needed, as shown in Figure 4-27.



Figure 4-27. Bandwidth Configuration

The content window is divided into the following sections:

- Assign Function Bandwidth contains a slider control used to set the parameters Bandwidth Weight and Maximum Bandwidth. To set a parameter, select the appropriate box and then drag the slider to change the setting. To save the new settings, click Save Configuration.
- Adjusted Overall Bandwidth Assignment is a pie chart diagram that shows the amount of the total bandwidth assigned to the NIC function.
- Current Active Bandwidth Assignment lists the current settings for the Bandwidth Assignment and Maximum Bandwidth parameters. A yellow background indicates that the new value (in parentheses) has not been saved yet.

To save your changes, click Save Configuration.

NOTE

Bandwidth changes are dynamically assigned when already in the NPAR mode. You will be prompted to reboot if the NPAR dynamic bandwidth assignment fails to set.

Function Type

Selecting the **Type** option displays the current function type (NIC) and allows you to change the function type. To change the function type, select the new type and click **Save Configuration**. The new type takes effect after the next system reboot.

172.29.40.98 ¥Mware E5Xi, 5.0.0, 46	172.29.40.98 YMware E5Xi, 5.0.0, 469512					
3 Started Summary Virtual Machines	Resource Allocation Pe	erformance Configuration	Tasks & Events Alarms Permissions M	Maps Storage Views Hardware Status	QConvergeConsole	
	mate in Performance	Adapter Manage	ement		🔺 Refresh	
😑 💐 172.29.40.98	General					
QLE8242:AFE1020C03081	Function Type:	NIC	Link Status:	Link Up		
😑 🔚 Port 1	PCI Function Number:	0	MAC Address:	00:0E:1E:04:7F:40		
NIC Function_0	Interface Name:	vmnic6	Link Speed:	10 Gbps		
NIC Function_2	NPAR Parameters Sta	atistics Diagnostics VPD				
NIC Function_4	Function: C Bandwi	dth © Type eSwitch:	O Statistics O Configuration			
🕀 🔚 Port 2	Current Function Typ	e:				
QLE8152:RFC0941P03903			Ethernet NIC			
🕀 📴 QLE2562:LFC1008U84111	(This function is fixed ar	id cannot be changed.)				
QLE2562:LFC1008U83918		2 /				

Figure 4-28 and Figure 4-29 show examples.

Figure 4-28. Converged Network Adapter NIC Function 0 or 1—Function Type

172.29.40.98 YMware E5Xi, 5.0.0, 469512					
) Started Summary Virtual Machines	Resource Allocation Perform	nance Configuration	Tasks & Events Alarms Permissions Maps 5	torage Views Hardware Status QConvergeConsole	
	mate in Performance	dapter Manage	ment	🖉 Refresh	
😑 💐 172.29.40.98	General				
QLE8242:AFE1020C03081	Function Type:	NIC	Link Status:	Link Up	
😑 🔚 Port 1	PCI Function Number:	2	MAC Address:	00:0E:1E:04:7F:41	
NIC Function_0	Interface Name:	vmnic8	Link Speed:	10 Gbps	
NIC Function_2	NPAR Parameters Statistic	s Diagnostics VPD			
NIC Function_4	Function: Constant	G z eSwitch:	Og se		
		W Type Cowiccii.	Configuration		
🕀 🔚 Port 2	Current Function Type:				
QLE8152:RFC0941P03903			Ethernet NIC		
OLE2562:LFC1008U84111 OLE2562:LFC1008U8411 OLE2562:LFC1008U84111 OLE2562:LFC1008U84111 OLE2562:LFC1008U84111 OLE2562:LFC1008U8411 OLE2562:LFC1008U841 OLE25 OLE25 OLE25 OLE25 OLE	N				
① ③	New Function Type("):		<u> </u>		
			Disabled		
	(*): New type will take effect	after system reboot.			
			Save Configuration		

Figure 4-29. Converged Network Adapter NIC Function 2 or 3—Function Type

Firmware Parameters—NIC Function

If the **Parameters** button is selected, the content pane appears as shown in Figure 4-30.

172.29.40.98 ¥Mware E5Xi, 5.0.0, 469512						
3 Started Summary Virtual Machines	Resource Allocation Performan	ice Configuration Tas	ks & Events Alarms	Permissions Maps	Storage Views Hardware Status	QConvergeConsole 🛛 🖉 🕨
	mate in Performance Ad	apter Manageme	nt			😤 Refresh
😑 💐 172.29.40.98	General					
QLE8242:AFE1020C03081	Function Type:	NIC		Link Status:	Link Up	
😑 🔚 Port 1	PCI Function Number:	0		MAC Address:	00:0E:1E:04:7F:40	
NIC Function_0	Interface Name:	vmnic6		Link Speed:	10 Gbps	
NIC Function_2	NPAR Parameters Statistics	Diagnostics VPD				
NIC Function_4	Enable Rx Checksumming.					
F¢∞€ Function_6	Max Jumbo Buffers:	[128 💌			
🕀 🔚 Port 2	R× Buffers:	[1024 💌			
🕀 🔠 QLE8152:RFC0941P03903	Tx Buffers:	[1024 💌			
	Rx Coalesce Usecs:	i	3	* *		
■ ■ OLE2562:LEC1008U83918	Rx Max Coalesced Frames:		256	× v		
	Tx Coalesce Usecs:		1	Ŷ		
	Tx Max Coalesced Frames:	ĺ	54	× v		
			🕋 Save Co	nfiguration		

Figure 4-30. Converged Network Adapter NIC Function—Firmware Parameters

The content pane contains the following configurable parameters:

- Enable Rx Checksumming
- Max Jumbo Buffers
- Rx Buffers
- Tx Buffers
- Rx Coalesce Usecs
- Rx Max Coalesced Frames
- Tx Coalesce Usecs
- Tx Max Coalesced Frames

To save your changes, click **Save Configuration**.

Statistics Information—NIC Function

If the **Statistics** button is selected, the content pane appears as shown in Figure 4-31.

172.29.40.98 VMware E5Xi, 5.0.0, 469512						
1 Started Summary Virtual Machines Resource Allocation Performance Configuration Tasks & Events Alarms Permissions Maps Storage Views Hardware Status QConvergeConsole						
Adapter Management						
😑 💐 172.29.40.98	General					
QLE8242:AFE1020C03081	Function Type:	NIC	Link Status:	Link Up		
😑 🔚 Port 1	PCI Function Number:	0	MAC Address:	00:0E:1E:04:7F:40		
NIC Function_0	Interface Name:	vmnic6	Link Speed:	10 Gbps		
NIC Function_2	NPAR Parameters Statis	stics Diagnostics VPD				
NIC Function_4	Ethernet Statistics		Refresh	Set baseline & refresh	Clear baseline & refresh	
	Bad SKB Length	0	Receive Packets	400712		
🕀 🔚 Port 2	Received Bad SKB	0	LRO Packets	0		
Image: 0100 0100 0100 0100 0100 0100 0100 01	Transmit Called	0	LRO Bytes	0		
	Transmit Finished	0	TSO Packets	0		
	Receive Dropped	0	TSO Bytes	0		
Description: De	Transmit Dropped	0	Receive Bytes	33965413		
	Checksummed	399703	Transmit Bytes	0		

Figure 4-31. Converged Network Adapter NIC Function—Statistics Information

The content pane contains the following read-only Ethernet statistics:

- Bad SKB Length
- Received Bad SKB
- Transmit Called
- Transmit Finished
- Receive Dropped
- Transmit Dropped
- Checksummed
- Receive Packets
- LRO Packets
- LRO Bytes
- TSO Packets
- TSO Bytes
- Receive Bytes
- Transmit Bytes

Resetting and Refreshing NIC Port Statistics

- To immediately update the statistics counters, click **Refresh**.
- To set the baseline for statistics counters to the current counts, click Set baseline and refresh.
- To reset the statistics counters to zero, click **Clear baseline and refresh**.

Diagnostics Tests—NIC Function

If the **Diagnostics** button is selected, the content pane appears as shown in Figure 4-32.

172.29.40.98 VMware E5Xi, 5.0.0, 469512					
3 Started Summary Virtual Machines	Resource Allocation Performa	ance Configuration Tasks & Events	Alarms Permissions Maps S	torage Views Hardware Status QConvergeConsole 🛛 🖞	
	mate in Performance	lapter Management		🖉 Refresh	
😑 💐 172.29.40.98	General				
QLE8242:AFE1020C03081	Function Type:	NIC	Link Status:	Link Up	
😑 📑 Port 1	PCI Function Number:	0	MAC Address:	00:0E:1E:04:7F:40	
NIC Function_0	Interface Name:	vmnic6	Link Speed:	10 Gbps	
NIC Function_2	NPAR Parameters Statistics	Diagnostics VPD			
NIC Function_4	Selection	Firmware Debug Dump			
Feet Function_6	Firmware Debug Dump	Click on the hutten below to vetrieve	the firmular debug dump /if it evicte)		
🕀 🔚 Port 2		This operation takes a while to comple	ste.		
QLE8152:RFC0941P03903		If you want to generate a firmware d	ump and retrieve it, check the 'Eorce	Firmware Dump' box.	
QLE2562:LFC1008U83918	Warning: Force Firmware Dump will halt and reset the adapter, use only when instructed by technical support.				
		E Force Firmware Dump			
			🍇 Retrieve Firmwa	re Debug	
		Result			

Figure 4-32. Converged Network Adapter NIC Function—Diagnostic Tests

The content pane allows you to perform a firmware debug dump:

- Click Retrieve Firmware Debug to begin retrieving the firmware debug dump (debug.bin), if one exists.
- Select Force Firmware Dump if there is no firmware dump and you want to generate one.

If the firmware debug dump is successfully retrieved, the results are shown under **Result**.

DCBX Information—NIC Function

If the **DCBX** button is selected, the content pane appears as shown in Figure 4-33.

172.27.9.114 VMware ESXi, 5.1.0, 1483097			
Getting Started Summary Virtual Machines Reso	ource Allocation Performance Configuration Tasks & Events Alarms Permissions I	Maps Storage Views Hardware Status QConvergeConsol	
QLOGIC The Ultimate in Perfor	mance Adapter Management		🖉 Refresh
😑 💐 172.27.9.114	General		
QLE8242:RFE1317H72726	Function Type: NIC	Link Status: Link Down	
😑 🔛 Port 1	PCI Function Number: 0	MAC Address: 00:0E:1E:31:84:00	
NLC Function_0	Interface Name: vmnic4	Link Speed: Unknown	
Function_2	NPAR Parameters Statistics Diagnostics DCBX DCBX TLV VPD		
iigiiiFunction_4	Default/Local Setting DCBX Values		
ForFunction_6	Name	Value	
🕀 📠 Port 2	DCBX Enable	true	
@QLE8362:RFE1315H65345 @	Willing	true	
	Port Pause Type	Per Priority Pause	
	SAN Priority CoS	3	
	Above DCBX values are the default card/local settings, to see the running/current settings view Default/Local Setting ETS Values	v the TLV panel.	
	Name	Value	
	Priority TX Mode	Bandwidth	
	SAN Bandwidth Percent	50	
	SAN Unused Bandwidth to LAN	false	
	LAN Unused Bandwidth to SAN	false	
	Above ETS values are the default card/local settings, to see the running/current settings view	the TLV, Unused Bandwidth parameters excluded.	

Figure 4-33. Converged Network Adapter NIC Function—DCBX and ETS Values

The content pane shows the following non-configurable values for the DCBX default card (local):

- DCBX Enabled
- Willing
- Port Pause Type
- SAN Priority CoS

The content pane shows the following non-configurable values for the ETS default card (local):

- Priority TX Mode
- SAN Bandwidth Percent
- SAN Unused Bandwidth to LAN
- LAN Unused Bandwidth to SAN

DCBX TLV Information—NIC Function

If the **DCBX TLV** button is selected, the content pane appears as shown in Figure 4-34 with DCBX TLV data.

172.27.9.114 ¥Mware E5Xi, 5.1.0, 1483097				
Getting Started Summary Virtual Machines Reso	urce Allocation Performance Configuration Tasks & Events Alarms	Permissions Maps Storage Views Ha	dware Status QConvergeConsole	
QLOGIC The Ultimate in Perform	mance Adapter Management			🔹 Refresh
. 172.27.9.114	General			
QLE8242:RFE1317H72726	Function Type: NEC	Link Status:	Link Down	
Port 1	PCI Function Number: 0	MAC Address:	00:0E:1E:31:84:00	
Function_0	Interface Name: vmnic4	Link Speed:	Unknown	
Function_2	NPAR Parameters Statistics Diagnostics DCBX DCBX TLV VPD			
Here Function_4	DCBX TLV Information			Refresh
realFunction_6	Name V	alue		
Port 2	DCBX TLV (Type-Length-Value) Data			
QLE8362:RFE1315H65345	🖉 🥬 Parameter Type: Local			
⊕ QLE2560:USJ1234567 ■	▷ [□] _{PFC}			
	4 📁 Traffic Class			
	Traffic class 0			
	 [▶] [↓] Traffic class 1 			
	Traffic class 2			
	Traffic class 3			
	Traffic class 4			
	Caraffic class 5			
	Traffic class 6			
	Traffic class 7			
	Transmission Bandwidth			
	Transmission Priority			
	Parameter Type: Operational			
	Parameter Type: Remote			
				*

Figure 4-34. Converged Network Adapter NIC Function—DCBX TLV Data

To determine the transmission bandwidth percentage:

- 1. Under **DCBX TLV Information**, expand the **Traffic Class** folder and open the **Traffic class** <x> folder, where <x> is the traffic class.
- 2. Locate and take note of the **802.1p Priority value**.
- 3. Expand the **Transmission Priority** folder and locate the **Traffic class with priority <y>** entry, where <y> is the priority value found in the Step 2. Take note of the entry's value as the transmission priority.
- 4. Expand the **Transmission Bandwidth** folder and locate the **Bandwidth** in % for traffic class <z> entry (at index <z>), where <z> is the transmission priority value found in Step 3.

The value for that entry is the bandwidth percentage for **Traffic class <x>**.

VPD Information—NIC Function

If the **VPD** button is selected, the content pane appears as shown in Figure 4-35.

172.27.3.153 ¥Mware E5Xi, 5.0.0, 768111				
Getting Started Summary Virtual Machines	Resource Allocation Performance Configura	tion Tasks & Events Alarms Permissions Maps	Storage Views Hardware S	tatus QConvergeConsole
	Performance Adapter Managem	ent		
😑 🦣 172.27.3.153	General			
QLE8242:AFE4393A43928	Function Type: NIC		Link Status:	Link Down
🕀 🔚 Port 1	PCI Function Number: 0		MAC Address:	00:0E:1E:08:4E:50
🕀 🛗 Port 2	Interface Name: vmnic6		Link Speed:	10 Gbps
QLE8362:AAP4827A48273	NPAR Parameters Statistics Diagnostics VP	סי		
😑 🛗 Port 1	Port Vital Product Data (VPD)			
NIC Function_0	Description	QLogic PCI-Express Dual Port 10Gb CNA		
^r € ^F Function_2	Part Number	QLE8362 AAP4827A48273		
igen Function_4	Engineering Date Code	AA4938273-48 PP		
N ¹ [©] Function_6	Flash Image Version	020157		
🕀 🛗 Port 2				
NC375i:KD03MP4131				
Port 1	0			
Port 2				
Port 3				
💌 Port 4				
QLE2662:AAP3423A34238				
FC_21-00-00-0E-1E-08-4D-D0				
FC_21-00-00-0E-1E-08-4D-D1				

Figure 4-35. Converged Network Adapter NIC Function—VPD Information

The content pane contains the following information:

- **Description**—Description of the adapter
- Part Number—Adapter part number
- Serial Number—Adapter serial number
- Engineering Date Code—Date code that engineering uses to identify release information on an FCoE adapter port
- Flash Image Version—Multiflash image version on an FCoE adapter port

Managing FCoE Functions on a Converged Network Adapter

To manage an FCoE function on a Converged Network Adapter port, select the FCoE function in the system tree. The Adapter Management window then appears as shown in Figure 4-36.

172.29.40.98 VMware ESXi, 5.0.0, 46	172.29.40.98 ¥Mware E5Xi, 5.0.0, 469512					
3 Started Summary Virtual Machines	Resource Allocation Performance Configuration Tasks & E	vents Alarms Permissions Maps Sto	orage Views Hardware Status QConv	vergeConsole		
	mate in Performance Adapter Management			🔺 😰 Refresh		
😑 🢐 172.29.40.98	General					
QLE8242:AFE1020C03081	Function Type: FCOE	Link Status:	Online			
😑 🔚 Port 1	PCI Function Number: 6	MAC Address:	00:0E:1E:04:7F:43			
NIC Function_0	Device Name: vmhba5	Port Name:	21-00-00-0E-1E-04-7F-43			
NIC Function_2	NPAR Boot Parameters Transceiver Statistics Diagnostics	FCoE VPD				
NIC Function_4	Function: Type					
Foot Function_6	Current Sunstian Tunor					
🕀 🛗 Port 2						
		Fibre Channel				
① ② ③	New Function Type(*)					
QLE2562:LFC1008U83918	New Function Type(*):					
	Disabled					
	(*): New type will take effect after system reboot.					
		Save Configuration				

Figure 4-36. Adapter Management Window—FCoE Function

The identifying information at the top of the content pane includes the following:

- Function Type: (FCoE)
- Link Status: (Up or Down)
- **PCI Function Number:** For Port 1: 2, 4, or 6. For Port 2: 3, 5, or 7
- MAC Address: MAC address of the PCI function
- **Device Name:** Device name
- Link Speed: The speed of the link—10Gb

Below the identifying information is a row of buttons, as shown in Figure 4-37:



Figure 4-37. Converged Network Adapter FCoE Function—Information Selection

These buttons let you select the information to manage for the FCoE function:

- NPAR—NIC partitioning configuration
- **Boot**—Boot device configuration
- **Parameters**—Firmware parameters
- **Transceiver**—Transceiver information
- Statistics—Statistics information
- **Diagnostics**—Diagnostic tests

- **FCoE**—FCoE parameter configuration
- VPD—VPD information

The button that appears pressed in indicates the selected information (for example, **NPAR** in Figure 4-37). The selected information is shown in the content pane. The following sections describe the different types of information for an FCoE function:

- NPAR Configuration—FCoE Function
- Boot Configuration—FCoE Function
- Firmware Parameters—FCoE Function
- Transceiver Information—FCoE Function
- Statistics Information—FCoE Function
- Diagnostics Tests—FCoE Function
- FCoE Configuration—FCoE Function
- VPD Information—FCoE Function

NPAR Configuration—FCoE Function

If the **NPAR** button is selected, the content pane appears as shown in Figure 4-38.

172.29.40.98 VMware E5Xi, 5.0.0, 469512					
3 Started Summary Virtual Machines	Resource Allocation Performance Configuration Tasks & E	Events Alarms Permissions Maps Stora	ge Views 🛛 Hardware Status 🛛 QConvergeConsole 🔄 🖉 📐		
	mate in Performance Adapter Management		🖉 Refresh		
😑 💐 172.29.40.98	General				
QLE8242:AFE1020C03081	Function Type: FCoE	Link Status:	Online		
🖃 🔚 Port 1	PCI Function Number: 6	MAC Address:	00:0E:1E:04:7F:43		
NIC Function_0	Device Name: vmhba5	Port Name:	21-00-00-0E-1E-04-7F-43		
NIC Function_2	NPAR Boot Parameters Transceiver Statistics Diagnostics	FCoE VPD			
NIC Function_4	Function: (True				
Foot Function_6	- different is type				
🕀 📑 Port 2	Current Function Type:				
QLE8152:RFC0941P03903		Fibre Channel			
QLE2562:LFC1008U84111	No				
① ② ③ ③ ② ③ ② ③		Ethernet NIC			
		Disabled			
	(*): New type will take effect after system reboot.				
		Save Configuration			

Figure 4-38. Converged Network Adapter FCoE Function—NPAR Configuration

The content pane contains the following:

- Current Function Type: The selected function's current type—Fibre Channel (FCoE).
- New Function Type: To change the function type from Fibre Channel to Ethernet NIC or Disabled, select the appropriate box and click Save Configuration. The new type does not take effect until the next system reboot.

Boot Configuration—FCoE Function

If the **Boot** button is selected, the content pane appears as shown in Figure 4-39.

172.29.40.98 YMware E5Xi, 5.0.0, 469512							
3 Started Summary Virtual Machines	Resource Allocation Performance Cor	nfiguration Tasks & Events Alarms	Permissions Maps Storag	e Views Hardware Status QC	ConvergeConsole 🛛 🖉 🕨		
	mate in Performance Adapter	Management			🔶 Refresh		
😑 💐 172.29.40.98	General						
QLE8242:AFE1020C03081	Function Type: FCoE		Link Status:	Online			
😑 📑 Port 1	PCI Function Number: 6		MAC Address:	00:0E:1E:04:7F:43			
NIC Function_0	Device Name: vmhba5	i	Port Name:	21-00-00-0E-1E-04-7F-43	3		
NIC Function_2	NPAR Boot Parameters Transceiver	Statistics Diagnostics FCoE VPD					
NIC Function_4	Enable boot from the port.						
⊕ Eunction_6	\square Boot from the selected device(s): (*)						
🕀 🔚 Port 2	Boot Name	Target WWN		u	JN Id		
QLE8152:RFC0941P03903	Primary Boot	00-00-00-00-00-00-00 🔽		0	*		
🕀 📴 QLE2562:LFC1008U84111	Alternate Boot 1	00-00-00-00-00-00-00 💌		0	-		
① ③	Alternate Boot 2	00-00-00-00-00-00-00 💌		0	T		
	Alternate Boot 3	00-00-00-00-00-00-00 💌		0	¥		
	(*) If boot is enabled and boot device selection is disabled or not specified, the port will attempt to boot from the first device found.						
		Save C	onfiguration				

Figure 4-39. Converged Network Adapter FCoE Function—Boot Configuration

The content pane contains the following configurable parameters:

- Enable boot from the port: Select the check box to enable booting from the selected port, or clear the check box to disable booting from the port.
- Boot from the selected device(s): Select the check box to allow booting from a boot device that you specify, or clear the check box to disable this feature.

The following options are available only if **Boot from the selected device(s)** is selected:

- Primary Boot: Specify the primary boot device by selecting its worldwide name in Target WWN, and then select the device's LUN ID in LUN ID.
- Alternate Boot 1/2/3: Specify three alternate boot devices by selecting their worldwide names in Target WWN, and their LUN IDs in LUN ID.

To save your changes, click Save Configuration.

Firmware Parameters—FCoE Function

If the **Parameters** button is selected, the content pane appears as shown in Figure 4-40.

172.29.40.98 YMware E5Xi, 5.0.0, 469512								
3 Started Summary Virtual Machines	Resource Allocation Perfo	rmance Configuration	Tasks & Events Alarms	Permissions Maps	Storage Views Hardware Status QCon	vergeConsole 🛛 🕁 🕨		
	mate in Performance	Adapter Manage	ment			🔹 Refresh		
😑 💐 172.29.40.98	General							
QLE8242:AFE1020C03081	Function Type:	FCoE		Link Status:	Online			
😑 🔚 Port 1	PCI Function Number:	6		MAC Address:	00:0E:1E:04:7F:43			
NIC Function_0	Device Name:	vmhba5		Port Name:	21-00-00-0E-1E-04-7F-43			
NIC Function_2	NPAR Boot Parameters	Transceiver Statistics E	Piagnostics FCoE VPD					
NIC Function_4	Data Rate:		10 Gbps 💌					
Foot Function_6	Connection Options:		1 - Point to Point Only	Ŧ				
🕀 📑 Port 2	Frame Size:		2048 💌	_				
① ① ① ① ①	Login Retry Count:		8	*				
QLE2562:LFC1008U84111								
🕀 📴 QLE2562:LFC1008U83918								
			🕋 Save C	onfiguration				

Figure 4-40. Converged Network Adapter FCoE Function—Firmware Parameters

The content pane contains the following configurable parameters:

- Data Rate: This setting determines the adapter port data rate. The FCoE ports can run at 10Gbps. When this setting is Auto, QConvergeConsole determines what rate your system can accommodate and sets the rate accordingly. The default is Auto.
- Connection Options: This setting defines the type of connection (loop or point-to-point) or connection preference. The FCoE port default setting is Point to Point Only.
- **Frame Size:** This setting specifies the maximum frame length supported by the adapter. The default size is 2,048 for 10Gbps FCoE ports, which provides maximum performance for F_Port (point-to-point) connections.
- Login Retry Count: Specifies the number of times the software tries to log in to a device. The default is eight retries for 82xx adapters and five for all other adapters.

To save your changes, click Save Configuration.

Transceiver Information—FCoE Function

If the **Transceiver** button is selected, the content pane appears as shown in Figure 4-41.

172.29.40.98 VMware E5Xi, 5.0.0, 469512								
3 Started Summary Virtual Machines	Resource Allocation	Performance Configuration	Tasks & Events Ala	rms Permissions Maps	Storage Views Hard	ware Status QConve	rgeConsole 🛛 🖞 🕨	
	imate in Performanc	e Adapter Manag	gement				🖉 Refresh	
😑 💐 172.29.40.98	General							
QLE8242:AFE1020C03081	Function Type:	FCoE		Link Status:	Online			
😑 🔚 Port 1	PCI Function Number	6		MAC Address:	00:0E:1E:0	4:7F:43		
NIC Function_0	Device Name:	vmhba5		Port Name:	21-00-00-	0E-1E-04-7F-43		
NIC Function_2	NPAR Boot Para	meters Transceiver Statistics	Diagnostics FCoE VP	D				
NIC Function_4	Transceiver Info	mation					Refresh	
	Vendor: Identifier: Part Number: Connector: Revision:	FINISAR CORP. SFP FTLX8571D3BCL-QL LC	FINISAR CORP. SFP FTLX8571D3BCL-QL LC		10G Base-SR GBIC/SFP defined 10 Gbit/Sec AH208GC Yes	by serial ID only		
① ② ② ③		Temperature (C)	Yoltage (¥)	Tx Bias (mA)	Tx Power (mW)	Rx Power (mW)	
	¥alue	43.03	3.32	8.31	0.5103	0.4649		
	Status	Normal	Normal	Normal	Normal	Normal		
	High Alarm	78.00	3.70	11.80	0.8318	1.0000		
	High Warning	73.00	3.60	10.80	0.6607	0.7943		
	Low Warning	-8.00	3.00	5.00	0.3162	0.0158		
	Low Alarm	-13.00	2.90	4.00	0.2512	0.0100		

Figure 4-41. Converged Network Adapter FCoE Function—Transceiver Information

The content pane contains the following read-only information:

- Vendor: Transceiver manufacturer
- **Type:** Transceiver type
- Identifier: Transceiver form factor
- Ext. Identifier: Additional information about the transceiver
- Part Number: Transceiver part number
- **Speed:** Transceiver transmission speed
- **Connector:** Transceiver external optical or electrical cable type
- Serial Number: Transceiver serial number
- **Revision:** Vendor revision level
- QLogic SFP installed: Yes, if a QLogic SFP is installed; No, if an unsupported SFP is installed or if no SFP is installed.

Statistics Information—FCoE Function

When the **Statistics** button is selected, the content pane appears as shown in Figure 4-42.

172.29.40.98 ¥Mware E5Xi, 5.0.0, 469512								
3 Started Summary Virtual Machines	Resource Allocation Performance	Configuration Tas	iks & Events 🛛 A	larms Permission	is Maps Stora	ge Views 🔨 Hardware Sta	atus QConvergeConsole 🛛 🖞 🕅	
	mate in Performance Adapte	er Manageme	ent				🔹 Refresh	
😑 💐 172.29.40.98	General							
QLE8242:AFE1020C03081	Function Type: FCoE			Link Statu	s:	Online		
😑 🔚 Port 1	PCI Function Number: 6			MAC Addr	ess:	00:0E:1E:04:7F:43	1	
NIC Function_0	Device Name: vmhl	ba5		Port Name	e:	21-00-00-0E-1E-0	04-7F-43	
NIC Function_2	NPAR Boot Parameters Transceive	er Statistics Diagr	nostics FCoE V	PD				
NIC Function_4	FC Statistics						Reset Refresh	
	Number of IOs:	0		Throughpu	ut in Megabytes:	27	4	
🕀 🔚 Port 2	Number of Interrupts:	0		Number of	LIP Resets:	0		
QLE8152:RFC0941P03903	Link Failure:	0		Invalid CR	Cs:	77		
⊕ BB OLE2562:LEC1008U84111	Loss of Sync:	0		Loss of Sig	anal:	0		
	Controller Errors:	1		Device Err	Ors: Declared Exercise	0		
CE2362:EFC1006063916	Target port Name	Link Failure	Syncloss	Signal Loss	Invalid CRC	Sea Proto Error	Invalid Trans Word	
	20-02-00-11-0D-79-00-00	1	0	0	0	0	0	
	20-00-00-11-0D-5F-00-00	0	0	0	0	0	0	
	20-00-00-11-0D-5F-00-01	0	0	0	0	0	0	
	20-01-00-11-0D-5F-01-00	1	0	0	0	0	0	

Figure 4-42. Converged Network Adapter FCoE Function—Statistics Information

NOTE

Selecting the **Reset** option will permanently rest the counters. Any tools that use these counters for historical trending must be readjusted.

The content pane contains the following read-only statistics information:

- Number of IOs
- Throughput in Megabytes
- Number of Interrupts
- Number of LIP Resets
- Link Failure
- Invalid CRCs
- Loss of Sync
- Loss of Signal
- Controller Errors
- Device Errors
- Invalid Transmission Words
- Sequence Protocol Errors

If a target is attached to the function, the content pane also contains a table that lists how many of each of the following errors have occurred for the target:

- Link Failure
- Sync Loss
- Signal Loss
- Invalid CRC
- Seq Proto Error
- Invalid Trans Word

Diagnostics Tests—FCoE Function

If the **Diagnostics** button is selected, the content pane appears as shown in Figure 4-43.

172.27.9.112 VMware E5Xi, 5.5.0, 1331820					
Getting Started Summary Virtual Machines Resource Allocal	tion Performance Configuration T	asks & Events Alarms Permissions Maps Stor	rage Views QConvergeConsole Hardware :	Status	
QLOGIC [*] The Ultimate in Performance	Adapter Management				🔹 Refresh
e 💐 172.27.9.112	General				
QLE8362:RFE1250H08700	Function Type:	FCoE	Link Status:	Loop down	
😑 🛗 Port 1	PCI Function Number:	2	MAC Address:	00:0E:1E:14:0E:A1	
Function_0	Device Name:	vmhba3	Port Name:	21-00-00-0E-1E-14-0E-A0	
Function_2	Boot Parameters Transceiver Stat	istics Diagnostics FCoE VPD Temperature			
iemFunction_4	Selection	Loopback Test			
Function_6	Loopback Test	Test Configuration:			
Port 2	Read-Write Buffer Test	Data Pattern:	Random 🔽		
NIC Function_1	FC Ping		00 00 00 00 00 00	-00 -00	
rwFunction_3	CT Ping	Number of test(s) (1-65535):	1		
***Function_5	CT FC Trace Route	Test Increment (1-65535):	1		
Function_7	Firmware Debug Dump	Data Size (Bytes):	8 🗸		
BERQLE8242:RFE1314H59588 BERQLE8242:RFE1314 BERQLE8242:RFE1314 BERQLE824 BERQLE824 BERQLE824 BERQLE82 BERQLE8 B		On Error:	Ignore 🗸		
B REPOLE2562:LFD1115N06966	•	Test continuously			
FC Cached Adapter Network			🜔 Start Test		
		Test Result			
	L				

Figure 4-43. Converged Network Adapter FCoE Function—Diagnostic Tests

In the content pane, select the type of diagnostic test to perform: **Loopback Test**, **Read-Write Buffer Test**, **FC Ping**, **CT Ping**, **CT FC Trace Route**, or **Firmware Debug Dump**. Then specify the following information:

Loopback Test and Read-Write Buffer Test

- Data Pattern: Select the type of data pattern to use in the test. Or, type the pattern to use into the boxes provided.
- **Number of test(s):** Specify the quantity of tests to run (1–65,536).
- **Test Increment:** Specify the test increment (1–65,536).
- **Data Size (Bytes):** Specify the data size in bytes.

- **On Error:** Indicate the action to take if an error occurs.
- Test continuously: Select this check box to run the test continuously. Clear the check box to run the test once only.

Click **Start Test** to begin the selected test. When the test is finished, the **Test Result** section of the content pane shows the results.

FCoE Ping Tests

When a target with LUNs is connected to the port, you can conduct a ping test to any target in the table. To conduct a ping test, select a target in the table, specify the quantity of tests, and then click **Start Test**. The status for each test appears in the **Result** column, as shown in Figure 4-44. The CT Ping and CT FC Trace Route ping tests are conducted in a similar fashion. However, to successfully run a CT Ping or a CT FC Trace Route ping test, the fabric must contain a Brocade switch.

172.27.9.112 VMware ESXi, 5.5.0, 1331820						
Getting Started Summary Virtual Machines Resource Allocat	ion Performance Configuration T	asks & Events 🔪 A	alarms Permissions Maps Storag	ge Views 🔪 Hardware Status 🎽 QConv	ergeConsole	
A QLOGIC [*] The Ultimate in Performance	Adapter Management					
e 2172.27.9.112	General					
QLE8362:RFE1250H08700	Product Identifier:	PCI-Express D	ual Channel 8Gb Fibre Channel HB	A		
Port 1	Link Status:	Online		Port Type:	Node Port	
Port 2	Device Name:	vmhba5		Port Name:	21-00-00-24-FF-32-FA-26	
QLE8242:RFE1314H59588	DIR Speed: PCI Function Number:	8 GDps 0		PCI Bus Number:	8 GDps 33	
🖶 📑 Port 1	Terrenceon real peri	•		r et bus numberr		
🖶 🔚 Port 2	Commands					
EBQLE2562:LFD1115N06966	🚧 Set Beacon On					
FC_21-00-00-24-FF-32-FA-26						
Target_B2-44-00-11-0D-05-00-00	Boot Parameters Transceiver Sta	tistics Diagnostic	s VPD			
€LUN_0	Selection	CT Ping Test				
FC_21-00-00-24-FF-32-FA-27	Loophack Test	Test Configu	ration:			
😑 👬 FC Cached Adapter Network	Read-Write Buffer Test	O Select T	arget(s) to perform CT Ping Test			
😑 🌉 Server List	FC Ping	Number of tes	t(s) (1-65535):	1		
B \$\$52dda1fc-2df9-8524-9189-9c8e9959ac94	▶ CT Ping		Target Port WWN		Result	
⊕ ₹53d93917-0a22-d889-0d7e-9c8e9959ad66	CT FC Trace Route	V	B2-44-00-11-0D-05-00-00		Success (0 miliseconds)	
			л.	🜔 Start Test		
						T

Figure 4-44. FCoE Port—Ping Test Results

Firmware Debug Dump

Click **Retrieve Firmware Debug** to retrieve the firmware debug dump (if it exists) and display it in the **Result** area of the content pane.

NOTE

After you click **Retrieve Firmware Debug**, the operation may take a while to complete.

FCoE Configuration—**FCoE Function**

If the FCoE button is selected, the content pane shows the **Information**, **Configuration**, **Data Center Bridging**, **DCE Statistics**, and **DCBX TLV** options.

Information

Select **Information** to view the following FCoE Attributes, as shown in Figure 4-45.

- CNA FW Version
- VN Port MAC Address
- VLAN ID
- Max Frame Size
- Addressing Mode

172.24.56.249 VMware ESXi, 5.5.0, 1198610				
Getting Started Summary Virtual Machines Resource Allocation F	erformance Configuration Tasks & Events A	larms Permissions Maps Storage Views Hardware Status	QConvergeConsole	
Ad	apter Management			
IT2.24.56.249	General			
QLE8362:AFE1226F05817	Function Type:	FCoE	Link Status:	Onl
Port 1	PCI Function Number:	3	MAC Address:	00:
P Port 2	Device Name:		Port Name:	21-
NICFUNCTION_1	NPAR Boot Parameters Transceive	r Statistics Diagnostics FCoE VPD Temperature		
FeetFunction_3	Selection	FCoE Attributes:		
Target_50-06-01-69-47-20-08-08	Information	CNA FW Version:	255.255.255	
***Function 5	Configuration	VN Port MAC Address:	0e:fc:00:01:17:01	
European 7	Configuration	VLAN ID:	1002	
e-r diredon_v	Data Center Bridging	Max Frame Size:	2500 (Baby Jumbo)	
QLE2672: AFE 1226F05918	DCE Statistics	Addressing Mode:	FPMA	
FC_21-00-00-0E-1E-08-B7-50	DCBX TLV			
FC 21-00-00-0E-1E-08-B7-51				

Figure 4-45. Converged Network Adapter FCoE Function—FCoE Attribute Information

Configuration

Select Configuration to view the following options, as shown in Figure 4-46.

- Primary FCF¹ VLAN ID (0–4095)
- Primary FCF VLAN Selection enable

¹ Fibre Channel Forwarder

To save the configuration values, click **Save Configurations**.

172.24.56.249 VMware ESXi, 5.5.0, 1198610			
Getting Started Summary Virtual Machines Resource Alloca	ation Performance Configuration Tasks & Events	Alarms Permissions Maps Storage Views Hardware Statu	QConvergeConsole
OCC The Ultimate in Performance	Adapter Management		
E 172.24.56.249	General		
QLE8362:AFE1226F05817	Function Type:	FCoE	Link Status:
Port 1	PCI Function Number:	3	MAC Address: (
Port 2	Device Name:		Port Name:
NICFunction_1	NPAR Boot Parameters Transceiv	er Statistics Diagnostics FCoE VPD Temperature	
FeetFunction_3	Selection	FCoE Configuration:	
Target_50-06-01-69-47-20-08-08	Information	Primary FCF VLAN ID:	0
###Function_5	Configuration	Primary FCF VLAN ID Selection enable	
Function_7	Data Center Bridging		Save Configuration
QLE2672:AFE1226F05918	DCE St fcoe		Save configuration
FC_21-00-00-0E-1E-08-B7-50	DCBX TLV		
C BEC 21-00-00-0E-1E-09-87-51			

Figure 4-46. Converged Network Adapter FCoE Function—FCoE Configuration

Data Center Bridging

Select **Data Center Bridging** to view the default/local setting DCBX values and ETS values, as shown in Figure 4-47.

- DCBX Enable
- Willing
- Port Pause Type
- FCoE Priority CoS
- iSCSI Priority CoS
- Priority TX Mode
- Priority Groups 0–7
- SAN Unused Bandwidth to LAN

2.24.56.249 VMware ESXi, 5.5.0, 1198610						
tting Started Summary Virtual Machines Resource Allocation	Performance Configuration Tasks & Events	Alarms Permissions Maps Storage Views Hardwo	re Status QConvergeConsole			
COLOGIC The Ultimate in Performance	dapter Management					🛃 Rei
172.24.56.249	General					
QUE8362:AFE1226F05817 Mort 1 Port 2	Function Type: PCI Function Number: Device Name:	FCOE 3	Link Status: MAC Address: Port Name:	Online 00:0E:1 21-00-	LE:08:B8:19 00-0E-1E-08-B8-11	
NICFUNCTION_1	NPAR Boot Parameters Transceive	er Statistics Diagnostics FCoE VPD Temperature				
roveFunction_3	Selection	Default/Local Setting DCBX Values				
Target_50-06-01-69-47-20-08-08	Information	Name		Value		
###Function_S	Configuration	DCBX Enable		true		
Function_7	Data Center Bridging	Wiling		true		
QLE2672:AFE1226F05918	DCE Statistics	Port Pause Type		Standard		
FC_21-00-00-0E-1E-08-87-50	DCBX TLV	FCoE Priority CoS	CoS 3			
FC_21-00-00-0E-1E-08-87-51		ISCSI Priority CoS		0		
		Above DCBX values are the default card/local s	ettings, to see the running/current settings view the TLV pan	nel.		
		Default/Local Setting ETS Values				
		Name			Value	
	•	Priority TX Mode			Bandwidth	
		Priority Group 0			50	
		Priority Group 1			50	
		Priority Group 2			0	
		Priority Group 3			0	
		Priority Group 4			0	
		Priority Group 5			0	
		Priority Group 6			0	
		Priority Group 7			0	
		SAN Unused Bandwidth to LAN			false	-

Figure 4-47. Converged Network Adapter FCoE Function—Data Center Bridging

DCE Statistics

Select **DCE Statistics** to view values for the following port Data Center Ethernet (DCE) parameters, as shown in Figure 4-48:

- Transmit Packets
- Transmit Octets
- Transmit Multicast Packets
- Transmit Broadcast Packets
- Transmit Unicast Packets
- Transmit Control Packets
- Transmit Pause Packets
- Transmit Packets 64 Octets
- Transmit Packets 65to127 Octets
- Transmit Packets 128to255 Octets
- Transmit Packets 256to511 Octets
- Transmit Packets 512to1023 Octets
- Transmit Packets 1024to1518 Octets
- Transmit Packets 1519toMax Octets
- Transmit Undersize Packets
- Transmit Oversize Packets
- Receive Octets
- Receive Octets Ok
- Receive Packets
- Receive Packets Ok
- Receive Broadcast Packets
- Receive Multicast Packets
- Receive Unicast Packets
- Receive Undersize Packets
- Receive Oversize Packets
- Receive Jabber Packets
- Receive Undersize FCS Error Packets
- Receive Control Packets
- Receive Pause Packets
- Receive Packets 64 Octets
- Receive Packets 65to127 Octets
- Receive Packets 128to255 Octets
- Receive Packets 256to511 Octets
- Receive Packets 512to1023 Octets
- Receive Packets 1024to1518 Octets
- Receive Packets 1519toMax Octets
- Transmit CBFC Pause Frames 0 through 7
- Transmit FCoE Packets
- Transmit Mgmt Packets
- Receive CBFC Pause Frames 0 through 7
- Receive FCoE Packets
- Receive Mgmt Packets

- Receive Packets Priority 0 through 7
- Transmit Packets Priority 0 through 7
- Receive Packets Discarded Priority 0 through 7

172.24.56.249 VMware E5Xi, 5.5.0, 1198610					
Getting Started Summary Virtual Machines Resource Allocation	on Performance Configuration Tasks & Event	Alarms Permissions Maps Storage Views Hardware	Status QConvergeConsole		
QLOGIC [®] The Ultimate in Performance	Adapter Management				💰 Refresh.
IT2.24.56.249	General				
QLE8362:AFE1226F05817	Function Type:	FCoE	Link Status:	Online	
Port 1	PCI Function Number:	3	MAC Address:	00:0E:1E:08:B8:19	
Port 2	Device Name:		Port Name:	21-00-00-0E-1E-08-B8-11	
NICFUNCTION_1	NPAR Boot Parameters Trans	eiver Statistics Diagnostics FCoE VPD Temperature			
Function_3	Selection	Port DCE Statistics			Refresh
Target_50-06-01-69-47-20-08-08	Information	Name		Value	_
###Function_5	Configuration	Transmit Packets		294277	
Function_7	Data Center Bridging	Transmit Octets		24240035	
ImpQLE2672:AFE1226F05918	DCE Statistics	Transmit Multicast Packets		38111	
FC_21-00-00-0E-1E-08-87-50	DCBX TLV	Transmit Broadcast Packets		3	
		Transmit Unicast Packets		256163	
		Transmit Control Packets		2	
		Transmit Pause Packets		2	
		Transmit Packets 64 Octets		155764	
	e	Transmit Packets 65to 127 Octets		138500	
		Transmit Packets 128to255 Octets		12	
		Transmit Packets 256to511 Octets		1	
		Transmit Packets 512to 1023 Octets		0	
		Transmit Packets 1024to 1518 Octets		0	
		Transmit Packets 1519toMax Octets		0	
		Transmit Undersize Packets		0	
		Transmit Oversize Packets		0	
		Receive Octets		1366782377628	
		Receive Octets Ok		1366782245798	
					•

Figure 4-48. Converged Network Adapter FCoE Function—DCE Statistics

DCBX TLV

Select **DCBX TLV** to view the type-length-value (TLV) information (Figure 4-49) for the LLDP frames meant for exchanging the parameters and their values.



Figure 4-49. Converged Network Adapter—DCBX TLV

VPD Information—FCoE Function

If the **VPD** button is selected, the content pane appears as shown in Figure 4-50.

172.27.3.153 ¥Mware E5Xi, 5.0.0, 768111				
Getting Started Summary Virtual Machines A	Resource Allocation Performance C	onfiguration Tasks & Events Alarms Permissions	Maps Storage Views H	Hardware Status QConvergeConsole
	rformance Adapter Man	agement		
😑 💐 172.27.3.153	General			
QLE8242:AFE4393A43928	Function Type:	iSCSI	Link Status:	Link Down
🕀 🛗 Port 1	PCI Function Number:	4	MAC Address:	00:0E:1E:08:4E:52
🕀 🔚 Port 2	Device Name:	/proc/scsi/qla4xxx/9	IP Address:	0.0.0.0
QLE8362:AAP4827A48273	iSCSI Name:	iqn.2000-04.com.qlogic:isp8214.000E1E084E52.	4	
😑 🔚 Port 1	NPAR Boot Parameters Statistic	s Diagnostics VPD		
NLC Function_0	Port Vital Product Data (VPD)			
For Function_2	Description	QLogic PCI-Express Dual Port 10Gb CNA		
*# Function_4	Part Number	QLE8362		
^N ↓ ^C Function_6	Engineering Date Code	AA4938273-48 PP		
🕀 📑 Port 2	Flash Image Version	020157		
DIE NC375i:KD03MP4131				
Port 1	0			
Port 2				

Figure 4-50. Converged Network Adapter FCoE Function—VPD Information

The content pane displays the following information:

- **Description**—Description of the adapter
- **Part Number**—Part number of the adapter
- **Serial Number**—Serial number of the adapter
- Engineering Date Code—Date code that engineering uses to identify release information on an FCoE adapter port
- Flash Image Version—Multiflash image version on an FCoE adapter port

Managing iSCSI Functions on a Converged Network Adapter

To manage an iSCSI function on a Converged Network Adapter port, select the iSCSI function in the system tree. The Adapter Management window then appears, as shown in Figure 4-51.

172.29.40.98 VMware E5Xi, 5.0.0, 469512		
Getting Started Summary Virtual Machines Resource Allocat	on Performance Configuration Tasks & Events Alarms Permissions Maps Storage Views	Hardware Status QConvergeConsole 🛛 🕨
OCC OCC The Ultimate in Performance	Adapter Management	🔺 Refresh
E 💐 172.29.40.98	General	
QLE8242:AFE1020C03081	Function Type: iSCSI Link Status:	Link Down
😑 🔚 Port 1	PCI Function Number: 5 MAC Address:	00:0E:1E:04:7F:46
NIC Function_0	Device Name: /proc/scsi/qla4xxx/15 IP Address:	192.168.200.98
NIC Function_2	iSCSI Name: iqn.2000-04.com.qlogic:isp8214.000E1E047F46.5	
NIC Function_4	NPAR Boot Parameters Statistics Diagnostics VPD	
Foot Function_6	Function	
😑 🛅 Port 2	Talicion. 1988	
NIC Function_1	Current Function Type:	
NIC Function_3	iscsi	
# Function_5	New Function Type(*):	
f o t Function_7		
QLE8152:RFC0941P03903		
QLE2562:LFC1008U84111	Disabled	
	(*): New type will take effect after system reboot.	
₩FC_21-01-00-1B-32-BF-0F-CD	e Save Configuration	
QLE2562:LFC1008U83918		

Figure 4-51. Adapter Management Window—iSCSI Function

The identifying information in the **General** section at the top of the content pane contains the following:

- Function Type: iSCSI
- Link Status (Up or Down)
- **PCI Function Number:** For Port 1: 2, 4, or 6. For Port 2: 3, 5, or 7
- MAC Address: The MAC address of the iSCSI port
- Device Name: The name of the iSCSI port
- IP Address: The IP address of the iSCSI port
- iSCSI Name: By default, this is the QLogic manufacturing name of the iSCSI port. This name concatenates adapter port details that uniquely identifies the selected iSCSI port.

Below the identifying information is a row of buttons, as shown in Figure 4-52:



Figure 4-52. Converged Network Adapter iSCSI Function—Information Selection

These buttons let you select the information to manage for the NIC function:

- NPAR—NIC partitioning configuration
- Boot—Boot device configuration
- **Parameters**—Firmware parameters
- Statistics—Statistics information
- **Diagnostics**—Diagnostic tests

The button that appears pressed in indicates the selected information (for example, **NPAR** in Figure 4-52). The selected information is displayed in the content pane. The different types of information for a NIC function are described in the following sections:

- NPAR Configuration—iSCSI Function
- Boot Configuration—iSCSI Function
- Parameters—iSCSI Function
- Statistics Information—iSCSI Function
- Diagnostics Configuration—iSCSI Function
- VPD Information—iSCSI Function

NPAR Configuration—iSCSI Function

If the **NPAR** button is selected, the content pane appears as shown in Figure 4-53.

Getting Started Summary Virtual Machines Resource Allocation Performance Configuration Tasks & Events Alarms Permissions Maps Storage Views Hardware Status QConvergeConsole d						
QLOGIC [*] The Ultimate in Performance	Adapter I	Management				Aefresh
😑 💐 172.29.40.98		General				
QLE8242:AFE1020C03081		Function Type:	iSCSI	Link Status:	Link Down	
😑 🛅 Port 1		PCI Function Number:	5	MAC Address:	00:0E:1E:04:7F:46	
NIC Function_0		Device Name:	/proc/scsi/qla4xxx/15	IP Address:	192.168.200.98	
NIC Function_2		iSCSI Name:	iqn.2000-04.com.qlogic:isp821	4.000E1E047F46.5		
NIC Function_4		NPAR Boot Parameters Statistics Diagnostics VPD				
Fost Function_6		Function				
😑 🛅 Port 2		Talcton. V Type				
NIC Function_1		Current Function Ty	pe:			
NIC Function_3			🔽 i	SCSI		
**** Function_5						
Feet Function_7		new runction rype(<i>,</i>	the survey by to		
				thernet Nic		
E QLE2562:LFC1008U84111			E C	isabled		
		(*): New type will take	effect after system reboot.			
FC_21-01-00-1B-32-BF-0F-CD	e	6 Save Configuration				
QLE2562:LFC1008U83918						
- [787]						

Figure 4-53. Converged Network Adapter iSCSI Function—NPAR Configuration

The content pane contains the following NPAR-related information:

- **Current Function Type:** The selected function's current type—**iSCSI**.
- New Function Type: To change the function type from iSCSI to Ethernet NIC or Disabled, select the appropriate box and click Save Configuration. The new type does not take effect until the next system reboot.

Boot Configuration—iSCSI Function

When the **Boot** button is selected, the content pane appears as shown in Figure 4-54.

172.29.40.98 VMware E5Xi, 5.0.0, 469512							
Getting Started Summary Virtual Machines Resource Allocation Performance Configuration Tasks & Events Alarms Permissions Maps Storage Views Hardware Status QConvergeConsole 4							
QLOGIC [*] The Ultimate in Performance	dapter Management			🛃 Refr	esh		
😑 💐 172.29.40.98	General						
QLE8242:AFE1020C03081	Function Type:	iSCSI	Link Status:	Link Down			
😑 📑 Port 1	PCI Function Number:	5	MAC Address:	00:0E:1E:04:7F:46			
NIC Function_0	Device Name:	/proc/scsi/qla4xxx/15	IP Address:	192.168.200.98			
NIC Function_2	iSCSI Name:	iqn.2000-04.com.qlogic:isp821	4.000E1E047F46.5		_		
NIC Function_4	NPAR Boot Paramet	ters Statistics Diagnostics VPD					
😑 📑 Port 2	Boot Mode Setting	Disabled 🗾					
NIC Function_1	DHCP Vendor ID:						
NIC Function_3	DHCP Client ID:						
"" Function_5	Boot Name	Target	Name	LUN Id			
"Vet Function_7	Primary Boot	N/A 💌		N/A 💌			
QLE8152:RFC0941P03903	Secondary Boot	N/A 💌		N/A 💌			
QLE2562:LFC1008U84111	\$	Refresh		Save Configuration			
⊕ E FC_21-00-00-1B-32-9F-0F-CD							
FC_21-01-00-1B-32-BF-0F-CD	0						
□ QLE2562:LFC1008U83918							
⊕ Image: BFC_21-00-00-1B-32-9F-4E-CC							
■ ■ EC 21-01-00-1B-32-BE-4E-CC					•		

Figure 4-54. Converged Network Adapter iSCSI Function—Boot Configuration

The content pane contains the following boot configuration-related information:

- **Boot Mode Setting:** Set the boot mode as follows:
 - **Disabled:** Disables booting from an iSCSI target with this iSCSI port
 - Manual: Enables booting from either the primary or secondary iSCSI boot targets configured for this port
 - DHCP: Enables automatic configuration of iSCSI boot targets using DHCP
- DHCP Vendor ID: DHCP vendor ID appears here if you assigned it.
- DHCP Client ID: DHCP client ID

- Target Name: Select the target name for the primary or secondary boot device.
- **LUN ID:** Select the LUN ID for the primary or secondary boot device.

Parameters—iSCSI Function

If the **Parameters** button is selected, the content pane appears as shown in Figure 4-55.

172.29.40.98 YMware E5Xi, 5.0.0, 469512								
Getting Started Summary Virbual Machines Resource Allocation Performance Configuration Tasks & Events Alarms Permissions Maps Storage Views Hardware Status QConvergeCol 1								
QLOGIC The Ultimate in Pe	rformance Adapter Management		🔹 Refresh					
😑 🢐 172.29.40.98	General							
QLE8242:AFE1020C03081	Function Type: iSCSI	Link Status: Li	nk Down					
🕀 🔚 Port 1	PCI Function Number: 5	MAC Address: 00	D:0E:1E:04:7F:46					
😑 🔚 Port 2	Device Name: /proc/scsi/qla4xxx/15	IP Address: 19	92.168.200.98					
^N ↓ ^C Function_1	iSCSI Name: iqn.2000-04.com.qlogic:isp8214.000E1E0)47F46.5						
N ^{LC} Function_3	NPAR Boot Parameters Statistics Diagnostics VPD							
💖 Function_5	Settings: Grand Children Circaster							
F©F Function_7	General Civetwork Cir Conriguration							
QLE8152:RFC0941P03903	iSCSI Settings Firmware Settings							
QLE2562:LFC1008U84111 QLE2562 QLE2562 QLE25 QLE25 Q	Force Negotiate Main iSCSI Keys	First Burst Length	256					
	🗌 Header Digest	Max Burst Length	512					
	🗖 Data Digest	Execution Throttle	0					
	🔽 Immediate Data	Connection Keepalive Timeout	14					
	Initial R2T	Max Outstanding R2T	1					
	Snack	Enable ZIO ZIO C	Count: 0					
	☑ Logout On Discovery Session	🗹 Serialize Task Mgmt Cmds						
	Strict iSCSI Login	Reserved Additional Firmware Opt	ions 👩					
	Error Recovery Level 0	🗹 Auto Connect						
	🛃 Refresh	🕋 Save	Configuration					
<u> </u>			•					

Figure 4-55. Converged Network Adapter iSCSI Function—General Parameters

The content pane contains options for **General**, **Network**, or **IP Configuration** to show the general, network, or IP configuration parameters, respectively. Refer to the appropriate following section for a list of the parameters for each type of information.

General Parameters

The general parameters (see Figure 4-55) include sections for **iSCSI Settings** and **Firmware Settings**, as follows:

- iSCSI Settings
 - □ **Force Negotiate Main iSCSI Keys** forces the initiator to negotiate all the main iSCSI keys during the login phase.

- □ **Header Digest** enables header digest on the initiator to protect the integrity of the iSCSI header. The target must accept the header digest during parameter negotiation.
- □ **Data Digest** enables data digest on the initiator to protect the integrity of the iSCSI data. The target must accept the data digest during parameter negotiation.
- ImmediateData and InitialR2T. Table 4-2 describes how ImmediateData and InitialR2T combine to determine how the initiator can send immediate data.

ImmediateData ¹	InitialR2T	Result
Yes	Yes	Only immediate data are accepted in the first burst.
Yes	No	Initiator may send unsolicited immediate data and/or one unsolicited burst of data-out protocol data units (PDUs) ² .
No	Yes	Initiator must not send unsolicited data, and the target must reject unsolicited data with the corresponding response code.
No	No	Initiator must not send unsolicited immedi- ate data, but may send one unsolicited burst of data-out PDUs.

Table 4-2. ImmediateData and IntialR2T

¹ Immediate data stands for data that is part of the command PDU.

² Data-out PDU is a PDU that only contains data.

- **Snack** enables the initiator to request retransmission of numbered responses, data, or R2T PDUs from the target.
- Logout on Discovery Session enables issuing a logout after completing the discovery session (default).
- Strict iSCSI Login enables strict iSCSI login, in which the adapter adheres to the iSCSI login rules, and therefore cannot operate with devices that do not conform to these rules. When disabled, the iSCSI login rules are relaxed, and the adapter can operate with devices that do not conform to these rules.
- **Error Recovery Level** currently supports only error recovery level 0.

Firmware Settings

- □ **FirstBurstLength** is the maximum amount of unsolicited data (in bytes) that an iSCSI initiator can send to the target during the execution of a single SCSI command. The initiator and target negotiate the actual value. The allowed values are 512–2²³. The default is 65,536. This value must not exceed the **MaxBurstLength**.
- MaxBurstLength is the maximum iSCSI data payload (in bytes) in a data-in or a solicited data-out iSCSI sequence. The initiator and target negotiate the actual value. The allowed values are 512–2²³. The default is 262,144.
- Execution Throttle is the maximum quantity of commands executing on any one port. When a port's execution throttle is reached, no new commands are executed until the current command finishes executing.Connection Keepalive Timeout is the minimum time to wait (in seconds) before attempting an explicit or implicit logout. The initiator and target negotiate the actual value.
- □ Max Outstanding R2T is the maximum quantity of outstanding R2Ts per task, excluding any implied initial R2T that might be part of that task. The initiator and target negotiate the actual value. The allowed values are 1–65,535. The default is 1.
- **Enable ZIO** enables interrupt coalescing in the firmware to reduce the quantity of interrupts generated to indicate command completions.
- **ZIO Count** indicates the quantity, if ZIO is enabled.
- **Reserved Additional Firmware Options** indicates a quantity.
- □ **Auto Connect** check box; select to enable or clear to disable automatic connection.
- Device Timeout check box; select to enable or clear to disable device timeout.

To save your changes, click Save Configuration.

Statistics Information—iSCSI Function

If the **Statistics** button is selected, the content pane appears as shown in Figure 4-56.

172.29.40.98 ¥Mware E5Xi, 5.0.0, 469512					4
Getting Started Summary Virtual Machines	Resource Allocation Performance	e Configuration Tasks & Events Alarms	Permissions Maps Storage View	ws Hardware Status	QConvergeConsole
	erformance Adapter I	Management			🧔 Refresh
😑 💐 172.29.40.98	General				<u> </u>
QLE8242:AFE1020C03081	Function Type:	iSCSI	Link Status: Li	ink Down	
🕀 📑 Port 1	PCI Function Number:	5	MAC Address: 0	0:0E:1E:04:7F:46	
😑 🔚 Port 2	Device Name:	/proc/scsi/qla4xxx/15	IP Address: 1	92.168.200.98	
NIC Function_1	iSCSI Name:	iqn.2000-04.com.qlogic:isp8214.000E1E0	47F46.5		
N ₁ ^C Function_3	NPAR Boot Parameters St	atistics Diagnostics VPD			
*** Function_5	iSCSI Statistics		Refresh Set basel	ine & refresh	Clear baseline & refr
^F € ^{et} Function_7	MAC Transmit Frames Count	0	IP Receive Fragment Overlap Coun	t 0	
E QLE8152:RFC0941P03903	MAC Transmit BytesCount	0	IP Receive Fragment Out Of Order	0	
QLE2562:LFC1008U84111	MAC Transmit Multicast	0	Count ID Example Descendly Times it	-	
EB OI E2562:LEC1008U83918	MAC Transmit Broadcast	0	IP Fragment Reassembly Timeout	0	
	MAC Transmit Pause Frames	0	IPv6 Transmit Byte Count	0	
	MAC Transmit Deferrals	0	IPv6 Transmit Fragment Count	0	
	MAC Transmit Excess Deferrals	0	IPv6 Receive Packet Count	0	
	[®] MAC Transmit Late Collisions	0	IPv6 Receive Byte Count	0	
	MAC Transmit Aborts	0	IPv6 Receive Fragment Count	0	
	MAC Transmit Single Collisions	0	IPv6 Datagram Reassembly	0	
	MAC Transmit Multiple Collisions	0	IPv6 Invalid Address Error	0	
	MAC Transmit Collisions	0	IPv6 Error Packet Count	0	
	MAC Transmit Frames Dropped	0	IPv6 Fragment Receive Overlap Co	unt O	
	MAC Transmit Jumbo Frames	0	IPv6 Frag Receive Out Of Order Co	ount O -	

Figure 4-56. Converged Network Adapter iSCSI Function—Statistics Information

The content pane contains the following statistical information:

- MAC Transmit Frames Count
- MAC Transmit BytesCount
- MAC Transmit Multicast
- MAC Transmit Pause Frames
- MAC Transmit ControlFrames
- MAC Transmit Deferrals
- MAC Transmit Excess Deferrals
- MAC Transmit Late Collisions
- MAC Transmit Aborts
- MAC Transmit Single Collisions
- MAC Transmit Multiple Collisions
- MAC Transmit Collisions
- MAC Transmit Frames Dropped
- MAC Transmit Jumbo Frames
- MAC Receive Frames Count
- MAC Receive Bytes Count
- MAC Receive UnKnown Control Frames
- MAC Receive Pause Frames
- MAC Receive Control Frames
- MAC Receive Dribble

- MAC Receive Frame Length Error
- MAC Receive Jabber
- MAC Receive Carrier Sense Error
- MAC Receive Frames Discarded
- MAC Receive Frames Dropped
- MAC CRC Error Count
- MAC Encoding Error Count
- MAC Receive Length Error Count Large
- MAC Receive Length Error Count Small
- MAC Receive Multicast
- MAC Receive Broadcast
- IP Transmit Packets Count
- IP Transmit Bytes Count
- IP Transmit Fragments Count
- IP Receive Packets Count
- IP Receive Bytes Count
- IP Receive Fragments Count
- IP Datagram Reassembly Count
- IP Invalid Address Error Count
- IP Receive Packet Error Count
- IP Receive Fragment Overlap Count
- IP Receive Fragment Out Of Order Count
- IP Fragment Reassembly Timeout
- IPv6 Transmit Packet Count
- IPv6 Transmit Byte Count
- IPv6 Transmit Fragment Count
- IPv6 Receive Packet Count
- IPv6 Receive Byte Count
- IPv6 Receive Fragment Count
- IPv6 Datagram Reassembly
- IPv6 Invalid Address Error
- IPv6 Error Packet Count
- IPv6 Fragment Receive Overlap Count
- IPv6 Frag Receive Out Of Order Count
- IPv6 Datagram Reassembly TO
- TCP Transmit Segments Count
- TCP Transmit Bytes Count
- TCP Receive Segments Count
- TCP Receive Bytes Count
- TCP Duplicate ACK Retrans
- TCP Retrans Timer Expired Count
- TCP Receive Duplicate ACK Count
- TCP Receive Pure ACK Count
- TCP Transmit Delayed ACK Count
- TCP Transmit Pure ACK Count

- TCP Segment Error Count
- TCP Segment Out Of Order Count
- TCP Window Probe Count
- TCP Window Update Count
- TCP Window Probe Persist Count
- **ECC Error Correction Count**
- iSCSI Transmit PDU Count
- iSCSI Transmit Bytes Count
- iSCSI Receive PDU Count
- iSCSI Receive Bytes Count
- iSCSI Complete IOs Count
- iSCSI Unexpected IO Receive Count
- iSCSI Format Error Count
- iSCSI Header Digest Count
- iSCSI Data Digest Error Count
- iSCSI Sequence Error Count

Diagnostics Configuration—iSCSI Function

If the **Diagnostics** button is selected, the content pane appears as shown in Figure 4-57.

172.29.40.98 VMware E5Xi, 5.0.0, 469512							
Getting Started Summary Virtual Machines Resource Allocation Performance Configuration Tasks & Events Alarms Permissions Maps Storage Views Hardware Status QConvergeConsole							
Adapter Management							
😑 💐 172.29.40.98	General						
QLE8242:AFE1020C03081	Function Type:	iSCSI	Link Status:	Link Down			
🕀 🔚 Port 1	PCI Function Number:	5	MAC Address:	00:0E:1E:04:7F:46			
😑 🔚 Port 2	Device Name:	/proc/scsi/qla4xxx/15	IP Address:	192.168.200.98			
N ^C Function_1	iSCSI Name:	ISCSI Name: iqn.2000-04.com.qlogiciisp8214.000E1E047F46.5					
NJC Function_3	NPAR Boot Parameters St	NPAR Boot Parameters Statistics Diagnostics VPD					
**** Function_5	Selection	Firmware Debug Dump					
154 Function_7 + Firmware Debug Dump - Click on the button below to retrieve the firmware debug dump (Fit exists)							
QLE8152:RFC0941P03903	Ping Test	This operation takes a while to complete.					
QLE2562:LFC1008U84111	Retrieve Firmware Debug						
QLE2562:LFC1008U83918		Result		-			

Figure 4-57. Converged Network Adapter iSCSI Function—Diagnostics

The content pane contains the following diagnostics information:

 Selection: Select the type of diagnostics test to run: Firmware Debug Dump or Ping Test.

Firmware Debug Dump

Click **Retrieve Firmware Debug** to retrieve the firmware debug dump (if it exists) and display it in the **Result** area of the content pane.

NOTE

After you click **Retrieve Firmware Debug**, the operation may take a while to complete.

Ping Test

- IPv4 address to ping: Type the IPv4 address of the target.
- Number of packet(s): Type the quantity of packets to test.
- Packet Size: Minimum packet size is 32. Maximum packet size varies by path MTU size. If the path MTU size is 1,500, the maximum size that succeeds is 1,472 for IPv4. If the path MTU is set for jumbo frames and the MTU is 9,000, the maximum size that succeeds is 8,972 for IPv4.

VPD Information—iSCSI Function

If the VPD button is selected, the content pane appears as shown in Figure 4-58.



Figure 4-58. Converged Network Adapter iSCSI Function—VPD Information

The content pane contains the following read-only information:

- Description—Description of the adapter
- Part Number—Part number of the adapter

- **Serial Number**—Serial number of the adapter
- Engineering Date Code—Date code that engineering uses to identify release information on an FCoE adapter port
- Flash Image Version—Multiflash image version on an FCoE adapter port

Viewing Target Device Information

To display information on a target device connected to a port on a Fibre Channel adapter or a Converged Network Adapter, select the target device in the system tree. The Adapter Management window then appears as shown in Figure 4-59.

172.29.40.98 VMware E5Xi, 5.0.0, 469512						
3 Started Summary Virtual Machines	Resource Allocation P	Performance Configuration Tasks & Events Alarms Permissions Maps Storage Views Hardware Status QConver	geConsole 🛛 🖉 🛛			
	mate in Performance	Adapter Management	🔺 Refresh			
😑 💐 172.29.40.98	General					
QLE8242:AFE1020C03081	Target Id	0				
QLE8152:RFC0941P03903	Port Id	011300				
	Target Node Name Target Port Name	50-06-01-60-C1-E0-63-25 50-06-01-60-41-E0-63-25				
QLE2562:LFC1008U83918	Serial Number	DGC RAID 0 0324APM00072401408				
⊖ EC_21-00-00-1B-32-9F- 4E-CC	Product Id Vendor Id	DGC RAID 0 DGC				
	Product Revision	DGC RAID 0 0324				
⊕ ₩FC_21-01-00-1B-32-BF- 4E-CC						

Figure 4-59. Adapter Management Window for Target Device

The Adapter Management window for target devices contains the General section, which displays read-only information for the selected target device, as follows:

- Target ID
- Port ID
- Target Node Name
- Target Port Name
- Serial Number
- Product ID
- Vendor ID
- Product Revision

Viewing LUN Information

To display information on a LUN for a device connected to a Fibre Channel adapter port or a Converged Network Adapter port, select the LUN in the system tree. The Adapter Management window then appears as shown in Figure 4-60.

172.29.40.98 ¥Mware E5Xi, 5.0.0, 46	9512			
3 Started Summary Virtual Machines	Resource Allocation Pe	erformance Configuration Tasks & Events Alarms Pe	ermissions Maps Storage Views H	ardware Status QConvergeConsole 4 D
	mate in Performance	Adapter Management		💰 Refresh
😑 💐 172.29.40.98	General			
QLE8242:AFE1020C03081	LUN Id	0		
Des Des Des 152:RFC0941P03903	LUN Size	1	GB	
■ ISB OLE2562:LEC1008U84111	LUN WWN Unique Number	60	D-06-01-60-E0-50-1D-00-38-D6-B3-	-72-EF-7C-E0-11
	Product Id	Ri	AID 0	
QLE2562:LFC1006063916	Product Revision	01	GL 324	
■ FC_21-00-00-1B-32-9F- 4E-CC	Device Type	SI	BC-2 Direct access block device	(e.g., magnetic disk)
■ Target_50-06-01-60- 41-E0-63-25				
SLUN_0				

Figure 4-60. Adapter Management Window for Target Device LUN

The Adapter Management window for LUNs contains the General section, which displays read-only information for the selected LUN, as follows:

- LUN ID
- LUN Size
- LUN WWN Unique Number
- Product ID
- Vendor ID
- Product Revision
- Device Type

Updating Adapter Flash

To update the Flash using vCenter Server Plug-in:

- 1. In the left pane of the QConvergeConsole page, select the adapter, and then click the **Update Adapter Flash Image** link.
- 2. In the Select Flash File for Update dialog box, click **Browse**.
- 3. In the Choose File To Upload dialog box, select the .bin Flash file from the extracted Flash kit package that is compatible with your adapter, and then click **Open**.
- 4. In the Select Flash File for Update dialog box, click **Send**.
- 5. Verify the current Flash version and file version, and then click **OK** to continue the update.
6. When prompted to reset the adapter to activate the firmware, click **OK** to activate the new firmware immediately, or click **Cancel** to wait until the next system reboot.

CAUTION

The Flash update may take several minutes to complete. Do not cancel the task or reboot the server during this time. Doing so may corrupt the firmware on the adapter.

- 7. When the Flash update is complete, click **OK** in the Flash update successful completion message box.
- 8. Click **Refresh** to verify the new firmware version.
- 9. If the adapter is a Converged Network Adapter, reboot the host ESX system.

5

Managing Marvell 578xx and 41000 Series Adapters

This chapter provides detailed instructions on how to use the vCenter Server Plug-in to manage Marvell 578xx/41000 Series Adapters and connected storage devices, including:

- "Viewing Host Maps" on page 89
- "Managing 578xx/41000 Series Adapters" on page 91
- "Viewing Port Information for 578xx/41000 Series Adapters" on page 98
- Configuring Port Boot Options" on page 100
- "Running Adapter Port Diagnostics" on page 109
- "Viewing Function Information for 578xx/41000 Series Adapters" on page 110
- "Viewing iSCSI Information for 578xx/41000 Series Adapters" on page 113

Viewing Host Maps

If you select an ESX or ESXi host, the content pane provides a few options. Select the option for the type of information you want to view, which are described in the following sections:

- Storage Map
- Network Map

Storage Map

Next to **Map**, click **Storage** to view the host's storage map, with the host on one end and the VMs on the other end. Figure 5-1 shows an example of a storage map with 578xx/41000 Series Adapters.



Figure 5-1. Storage Map with 578xx/41000 Series Adapters

Network Map

Next to **Map**, click **Network** to view the selected host's network map, as shown in Figure 5-2.



Figure 5-2. Network Map with 578xx/41000 Series Adapters

Managing 578xx/41000 Series Adapters

To manage 578xx/41000 Series Adapters, select the adapter in the system tree. The Adapter Management window appears in the content pane as shown in Figure 5-3 for 578xx/41000 Series Adapters.

Χ φιοgic	Adapter M	lanagement		ŧ
172.27.0.26	Adapter Informat	tion	Adapter Configuration	
American Street Stre				
Hereit 1	Property	Value	Configure Multi-Function and SRIOV	
Port 2	Description	BCM57840 NetXtreme II 10 Gigabit Ethernet	Multi Supetion Mode	CDTOV
QLE8242:RFE1317H72726	Bus Width	PCI-E (4X)	Plater ancuon Plate	38107
🕀 🔚 Port 1	Manufacturer	QLogic Corporation	Single Function	SRIOV Global Enable
Port 2	Device Id	0×16a1	Port 0 Protocol Port 1 Protocol	Port 0 SRIOV VEs per PElo
CLE2560:USJ1234567	Vendor Id	0x14e4	Fnable FCoF	lore shade in sparin 0 o
FC_21-00-00-24-FF-00-F2-68	Subsystem Id	0xe3f4		Port 1 SRIOV VFs per PF 0 V
Adapter1: BCM57840 B0	Subsystem Vendor Id	0x1077	Imable ISCSI I Enable ISCSI	
A Port 0	ASIC Version	BCM578405 B0	O NIC Partition	
	Serial Number	0123456789	Configure Partition Protocol and Bandwidth	
Port 1	iSCSI Bootcode Version	v7.10.4	corrigane na coortino documentar	
Adapter2: BCM578405 B0	L2 Firmware Version	L2T 7.10.31	P (
Port 0	e FCoE Boot Version	v7.10.1	Save	Reset
	MFW Version	MFW2 7.12.3	Adapter Commands	
BCM57840 NetXtreme II 10 Gigabit Ethernet rev 11 (vmnic8)	CCM Version	v7.12.4	Adapter Commands	
i5CSI - 00:0E:1E:50:30:C1			Update Adapter Flash Image	
FCoE - 10-00-00-0E-1E-50-30-C1				
Port 1				
BCM57840 NetXtreme II 10 Gigabit Ethernet rev 11 (vmnic9)				
ISCSI - 00:0E:1E:50:30:C3				
FC Cached Adapter Network				
Server List				
5244e21f-b4c4-668c-ee39-9c8e9959ad66				

Figure 5-3. Adapter Management of Single-Function 578xx/41000 Series Adapters

The Adapter Management window displays information and provides configuration options for the selected adapter, as described in the following sections:

- Adapter Information
- Adapter Configuration
- Adapter Commands: Updating Flash Firmware
- Configuring the Flow Control, Protocol, and Bandwidth
- Starting and Stopping the Adapter Temperature Monitor

Adapter Information

The Adapter Information section provides the following information:

- Description
- Bus Width
- Manufacturer
- Device ID
- Vendor ID
- Subsystem ID
- Subsystem Vendor ID
- ASIC Version
- Serial Number
- Firmware Versions

Adapter Configuration

Use the Adapter Configuration section to configure the following:

- Changing between Single Function and Multi-Function
- Configuring single root-input/output virtualization (SR-IOV)
- Configuring Protocols (578xx/41000 Series Adapters only)
- Configuring Remote Direct Memory Access (RDMA) (41000 Series Adapters only)
- For Multi-Function, configuring flow control and bandwidth

NOTE

- If the adapter is in Single Function mode, the protocols for each port can be configured by checking the appropriate box. SR-IOV settings may also be configured for each port as shown in Figure 5-3.
- If the adapter is in Multi-Function mode, the SR-IOV settings may be configured for each function as shown in Figure 5-4 for 578xx/41000 Series Adapters.

172.27.0.26 VMware ESXI, 5.5.0, 1331820				
Ά οιοgic	Adapter Manage	ement	The peconous	₹ Refresh
□ 172.27.0.26 □ 172.27.0.26 □ 102QLE8362:RFE1315H65345 □ 102QLE8362:RFE1315H65345	Adapter Inform	nation	Adapter Configuration	
Port 1	Property	Value	Configure Multi-Function and SRIOV	
import 2	Description	BCM57840 NetXtreme II Ethernet Multi Function		
Bent 1	Bus Width	PCI-E (4X)	Multi-Function Mode	SRIOV
Port 2	Manufacturer	QLogic Corporation	O Single Function	SRIOV Global Enable
berOLE2560-US11234567	Device Id	0x16a4	Part 0 Protocol Part 1 Protocol	
	Vendor Id	0x14e4	For C Protocol	Port 0 SRIOV VFs per PF Port 1 SRIOV VFs per PF
	Subsystem Id	0xe3c1		Function 0 0 V Function 1 0 V
Adapter1: BCM57840 B0	Subsystem Vendor Id	0x1077	Enable ISCSI Enable ISCSI	Function 2 0 V Function 3 0 V
B - Port 0	ASIC Version	BCM57840 B0	NIC Partition	Function 4 0 V Function 5 0 V
BCM57840 NetXtreme II Ethernet Multi Function	L2 Firmware Version	L2T 7.10.31	Configure Partition Protocol and Bandwidth	Function 6 0 V Function 7 0 V
BCM57840 NetXtreme II Ethernet Multi Function	MFW Version	MFW2 7.12.32		
Prev 11 (vmnic19)	CCM Version	v7.12.4	Save	Reset
BCM57840 NetXtreme II Ethernet Multi Function rev 11 (vmnic21)				
BCM57840 NetXtreme II Ethernet Multi Function rev 11 (vmnic23)	0		Adapter Commands	
□ → Port 1			Update Adapter Flash Image	
BCM57840 NetXtreme II Ethernet Multi Function rev 11 (vmnic5)				
BCM57840 NetXtreme II Ethernet Multi Function rev 11 (vmnic20)				
BCM57840 NetXtreme II Ethernet Multi Function rev 11 (vmnic22)				
BCM57840 NetXtreme II Ethernet Multi Function rev 11 (vmnic24)				
Adapter2: BCM578405 B0				
😑 👬 FC Cached Adapter Network				
Server List				
5244e21f-b4c4-668c-ee39-9c8e9959ad66				
B 52dda1fc-2df9-8524-9189-9c8e9959ac94				

Figure 5-4. Adapter Management of Multi-Function 578xx Series Adapters

Adapter Commands: Updating Flash Firmware

Use the **Adapter Commands** section to update the flash firmware on the adapter. Click **Update Adapter Flash Image** to open a dialog box and select the firmware file. After selecting the file that is appropriate for the adapter, the adapter is updated.

Configuring the Flow Control, Protocol, and Bandwidth

NOTE

- Each port may have up to two storage protocols assigned to it, with each function having either iSCSI or FCoE (578xx/41000 Series Adapters).
- Each port can have up to two iSCSI functions, or one iSCSI function with one FCoE function. The minimum bandwidth for all functions on the same port must all be 0 or total 100 percent.
- Use the Adapter Commands section to update the flash firmware on the adapter (if available for the adapter).
- The 41000 Series Adapters can have up to 16 functions configured. The following shows how some of the functions work (on a dual port adapter):
 - □ Functions 0 and 1 cannot have storage protocols configured.
 - □ Functions 2 and 3 can be configured for FCoE protocol.
 - □ Functions 4 and 5 can be configured for iSCSI protocol.
- If RDMA is available on a 41000 Series Adapter, you can enable RDMA over converged Ethernet (RoCE) or Internet wide area RDMA protocol (iWARP).

To configure the partition protocol and bandwidth settings:

- 1. In the Adapter Configuration pane, click **Configure Partition Protocol and Bandwidth**.
- 2. In the NIC Partition Configuration dialog box:
 - Select settings for flow control for each port.
 - Select the protocol and bandwidth for each function.

Figure 5-5 shows an example for an 578xx Series Adapter.



Figure 5-5. Multi-Function Edit Dialog Box for 578xx Series Adapters

Starting and Stopping the Adapter Temperature Monitor

If available for the adapter, click the **Temperature** button in the adapter pane. The Temperature page shows a graph of the temperature over time in degrees Celsius. The graph is updated at the monitoring rate indicated in the pane.

- To start the temperature monitoring, click **Start**.
- To stop the temperature monitoring, click **Stop**.



The monitoring rate can be changed when the sampling of the temperature has been stopped. Figure 5-6 shows the Temperature page.

Figure 5-6. Temperature Page

QinQ Configuration

For specific 578xx Series 1/10Gbps Ethernet Adapters that have the QinQ option enabled, you can use the QinQ page at the adapter level to configure QinQ for VLAN IDs on a per physical function (PF) basis.

QinQ is an implementation of the *IEEE 802.1ad* (or Q-in-Q) specification. QinQ further segregates traffic by allowing the creation of VLANs within a VLAN by adding an additional 802.1Q tag (VLAN ID field) to the Ethernet frames.

To configure QinQ:

- 1. In the adapter tree, select the 578xx Series Adapter node.
- 2. In the content pane, click the **QinQ** tab to view the QinQ Configuration page (Figure 5-7).

172.27.1.172 ¥Mware E5Xi, 6.0.0, 3620759			
Getting Started Summary Virtual Machines Res QLOGIC Image: Comparison of the started st	Adapter Ma	Conhiguration Traks & Events Alarms Permissions Maps QConvergeConsole	A Refresh
□ 172.27.1.172	General Temperature VPD Q	inq	
	QinQ Configurations	FastLinQ	
 Adapter2: 5790055 80 → Port 0 Adapter3: 5781055 80 → Port 1 	Port 0	Select VLAN mode: Filtering Setting VLAN ID value in the VLAN ID Pool may stop traffic. Function 0 VLAN ID (1 - 4094) VLAN ID Pool (e.g. +10, 24, 35, 78) 2-50, 88, 90, 100-150 VLAN Priority (0 - 7) 3 📚	

If the **QinQ** tab is not visible, QinQ is not enabled for your adapter model.

Figure 5-7. QinQ Configuration Page

- 3. On the QinQ page, configure the **Select VLAN mode** options as follows:
 - □ **Normal** mode configures the port to operate using the standard VLAN configuration.
 - □ **Filtering** mode configures the port to use QinQ VLAN packet filtering based on the VLAN IDs specified in the VLAN ID and VLAN ID Pool options.
 - □ **QinQ** mode configures the port to use QinQ VLAN packet filtering based on the specified VLAN ID.
- 4. If you selected **Filtering** or **QinQ** mode in Step 3, select from the following values for each port function:
 - □ VLAN ID must be within the range of 0–4094, where 0 indicates no VLAN ID. In QinQ mode, the VLAN ID cannot be 0.
 - ❑ VLAN ID Pool (available in Filtering mode only) must specify a set of ID numbers in the range of 1-4094. You can specify the ID numbers as either a comma-separated list, a range indicated by a dash (-), or a combination of a comma-separated list and a dash-specified range.
 - **VLAN Priority** must be within the range of 0–7.

NOTE

If you set the same value for **VLAN ID** and **VLAN ID Pool**, traffic may stop. This is a known issue.

In **Filtering** mode, enter valid values for the **VLAN ID** or the **VLAN ID Pool** or both. Both fields may have valid values, which cannot both be 0 and empty at the same time for the same PF.

The maximum quantity of VLAN IDs (specified in the **VLAN ID** option and the **VLAN ID Pool** option for each port function) for the entire adapter is 256.

- 5. To save the QinQ configuration, click **Save**.
- 6. If a message indicates that the QinQ configuration update is successful, reboot the system.

Viewing Port Information for 578xx/41000 Series Adapters

To view information for ports on 578xx/41000 Series Adapters, select the appropriate port in the system tree. The Adapter Management window shows the following port information:

- Port Number
- Link State
- Link Speed
- Duplex Setting
- Bus Number
- Device Number
- Media Type
- NIC Driver Version
- FCoE Driver Version
- iSCSI Driver Version

Figure 5-8 shows the port information for 57xxx/41000 Series Adapters.

172.27.0.26 VMware ESXi, 5.5.0, 1331820			
Getting Started Summary Virtual Machines Resource Allocat	tion Performance Config	uration Tasks & Events Alarms Permissions Maps QConvergeConsole	
💢 φιοgic	Adapter Manage	ement	Refresh
I72.27.0.26	Information		
QLE8362:RFE1315H65345	-	~	
🕀 🛗Port 1	Port Information		
	•	QLOGIC	
QLE8242:RFE1317H72726	Property	Value	
+ Port 1	Port Number:	0	
🕀 📑 Port 2	Link State:	DOWN	
EBQLE2560:USJ1234567	Link Speed (in Mbps):	Unknown	
FC_21-00-00-24-FF-00-F2-68	Duplex Settings:	Half	
Adapter1: BCM57840 B0	Bus Number:	42	
Port 0	Device Number:	0	
S Port 1	Media Type:	Optical	
	NIC Driver Version:	1.712.34	
Adapter2: BCM578405 B0	FCoE Driver Version:	Unknown	
Port 0	iSCSI Driver Version:	Unknown	
BCM57840 NetXtreme II 10 Gigabit Ethernet rev	,		
⊕ iSCSI - 00:0E:1E:50:30:C1			
⊕ FCoE - 10-00-00-0E-1E-50-30-C1			
□ → _☉ Port 1			
 BCM57840 NetXtreme II 10 Gigabit Ethernet rev 11 (vmnic9) 			
⊕ iSCSI - 00:0E:1E:50:30:C3			

Figure 5-8. Port Information for 578xx/41000 Series Adapters

If data center bridging exchange (DCBX) information is available, it is shown as part of the port information.

DCBX information includes:

- **DCB State** (enabled or disabled)
- DCB Protocol
- Priority
- Priority Flow Control (PFC)
- Enhanced Transmission Selection (ETS)

DCBX Advanced information includes:

- Local MIB:
 - **ETS** (enabled or disabled)
 - **PFC** (enabled or disabled)
 - **Configuration mismatch**
 - Networking, FCoE, and iSCSI HBA PRI (priorities)
 - PFC (priority flow control) Enabled/Disabled on Priorities
 - □ Networking, FCoE, and iSCSI HBA PGID (priority group ID)
 - PGID(x) BW(%) (bandwidth percent)

- Remote MIB:
 - **Remote application priority willing** (enabled or disabled)
 - Remote PFC willing
 - Remote ETS willing
 - Remote ETS recommendation valid
 - Remote FCoE PRI
 - Remote iSCSI PRI
 - **Remote PFC Enabled/Disabled on Priorities**
 - **Remote Networking**, **FCoE**, and **iSCSI PGID** (priority group ID)
 - Remote PGID(x) BW(%) (bandwidth percent)

Figure 5-9 shows the port information with DCBX information.

172.27.9.185 VMware ESXi, 5.5.0, 1623387 Getting Started Summary Virtual Machines Resour	ce Allocation Performan	nce Configuration	Tasks & Events Alarms Permissions	Maps QConvergeConsole						
💢 φιοgic	Adapter	Adapter Management								
I172.27.9.185	Information Boot Con	nfiguration Diagnost	ics							
RESQLE8362:AAP1234A98765										
😑 🏬 Adapter1: 5781055 B0	Port Informat	ion								
□ → _C Port 0	General Informatio	n	DCBX		DCBX Advanced					
BCM57810 10 Gigabit Ethernet Multi	Port Number	0	DCB	Enabled	Local MIB		Remote MIB			
Function rev 10 (Vmnice)	Link State	UP	DCB Protocol	CEE	ETS	Enabled	Remote application priority willing	No		
Function rev 10 (vmnic12)	Link Speed (in Mbps)	10000	Priority Tagging	Operational	PFC	Enabled	Remote PFC willing	No		
BCM57810 10 Gigabit Ethernet Multi	Duplex Settings	Full	Networking PRI	0	Configuration mis-match	No	Remote ETS willing	No		
BCM57810 10 Ginabit Ethernet Multi	Bus Number	10	FCoE PRI	3	Networking PRI	0	Remote ETS recommendation valid	No		
Function rev 10 (vmnic16)	Device Number	0	Priority Flow Control (PFC)	Operational	FCoE PRI	3	Remote FCoE PRI	3		
Port 1	Media Type	Optical	PFC Enabled on Priorities	3	ISCSI HBA PRI	NA	Remote iSCSI PRI	NA		
Adapter2: 5781055 B0	NIC Driver Version	2.713.10.v55.4	PFC Disabled on Priorities	0124567	PFC Enabled on Priorities	3	Remote PFC Enabled on Priorities	3		
Port 0	FCoE Driver Version	1.713.20.v55.2	Enhanced Transmission Selection (ETS)	Operational	PFC Disabled on Priorities	0124567	Remote PFC Disabled on Priorities	0124567		
	e ISCSI Driver Version	2.713.10.v55.3	Priority to Priority Group Mapping		Networking PGID	0	Remote Networking PGID	0		
			Priorities in Priority Group 0	0124567	FCoE PGID	1	Remote FCoE PGID	1		
			Priorities in Priority Group 1	3	ISCSI HBA PGID	NA	Remote ISCSI PGID	NA.		
			Priority Group Bandwidth		PGID(0) BW(%)	50	Remote PGID(0) BW(%)	50		
			Priority Group Bandwidth	01234567	PGID(1) BW(%)	50	Remote PGID(1) BW(%)	50		
			Bandwidth %	505000000	PGID(2) BW(%)	0	Remote PGID(2) BW(%)	0		
					PGID(3) BW(%)	0	Remote PGID(3) BW(%)	0		
					PGID(4) BW(%)	0	Remote PGID(4) BW(%)	0		
					PGID(5) BW(%)	0	Remote PGID(5) BW(%)	0		
					PGID(6) BW(%)	0	Remote PGID(6) BW(%)	0		
					PGID(7) BW(%)	0	Remote PGID(7) BW(%)	0		

Figure 5-9. Port Information with DCBX Information

Configuring Port Boot Options

If the adapter has the ability to boot from external storage, the following boot configuration options for each boot method are available:

- MBA (see Configuring MBA Boot)
- iSCSI Boot (see Configuring iSCSI Boot)
- FCoE Boot (see Configuring FCoE Boot)

Configuring MBA Boot

To configure the MBA boot:

- 1. In the QConvergeConsole system tree, select an adapter, and then select the appropriate port.
- 2. In the content pane on the right, click **Boot Configuration**.
- 3. Click the **MBA** button.
- 4. On the MBA Configurations page, complete the following:
 - a. Select the **Option ROM** check box to enable the ROM option, or clear the check box to disable it.
 - b. Select one of the options for **Boot Protocol**.

Options for 578xx Series Adapters:

- None
- PXE
- FCoE Boot (if available)
- iSCSI Boot (if available)

Options for 41000 Series Adapters:

- None
- PXE
- iBFT

Note that selecting **PXE** will disable the **iSCSI** (offload) **Boot**. Selecting **iBFT** will disable the **iSCSI** (offload) **Boot**, and set the **iSCSI Boot Mode** to non-offload.

- c. Select one of these options for **Boot Strap Type**:
 - Auto
 - BBS
 - Int 18h
 - Int 19h
- d. Select the **Hide Setup Prompt** check box to enable the **Hide Setup Prompt**, or clear the check box to disable the prompt for preboot comprehensive configuration management (CCM) on 578xx Adapters.
- e. Select one of the following **Setup Key Stroke** options for preboot CCM on 578xxAdapters:
 - Ctrl-S
 - Ctrl-B
- f. Select a value (from 0 to 14) in the **Banner Message Timeout** box for preboot CCM on 578*xx* Adapters.

- g. Select the appropriate Link Speed option:
 - AutoNeg (auto negotiation)
 - SmartAN (smart auto negotiation (if available))
 - 1Gbps
 - 10Gbps
 - **25Gbps** (if available)
 - **40Gbps** (if available)
 - **50Gbps** (if available)
 - **100Gbps** (if available)
- h. Select the **Pre-boot Wake on LAN** check box to enable the Pre-boot Wake on LAN option, or clear the check box to disable it.
- i. Select the **VLAN Mode** check box to enable VLAN Mode, or clear the check box to disable it.
- j. Set a value (from 1 to 4094) in the VLAN ID (1..4094) box.
- k. Set a value (from 0 to 7) for the **Boot Retry Count** option.
- 5. Click Save.

Figure 5-10 shows the boot configuration pane for MBA parameters.

Getting Started Summary Virtual Machines Resou	rce Allocation Performance C Adapter Man	configuration Tasks & Events Alarms Permissions Maps QConvergeConsole	Refresh
 □ 172.27.9.112 ⊕ reqULE2764:AFD1438Y00269 ⊕ reqULE2670:AFE1229F06865 	Information Boot Configurat	ion Diagnostics	
carQLE2562:LFD1115N06966 carQLE8362:RFE1250H08700 Adapter1: BCM578405 B0		FastLinQ	
	Option ROM Boot Protocol	Disabled None	
 □ ▲ Adapter2: QLE85325 B0 ③ → Port 0 	Boot Strap Type Hide Setup Prompt	Auto V Disabled	
⊕ → _☉ Port 1	Setup Key Stroke Banner Message Timeout	Ctrl-S 🗸	
	Link Speed Pre-boot Wake on LAN	I Gbps Disabled	
	VLAN Mode VLAN ID (14094)	Disabled	
	Boot Retry Count		
		Save]

Figure 5-10. Boot Configuration Panel for MBA Parameters

Configuring iSCSI Boot

This section describes how to set up the iSCSI boot configuration.

Configuring General Parameters

To configure the iSCSI general parameters:

- 1. In the QConvergeConsole system tree, select an adapter, and then select the appropriate port.
- 2. In the content pane on the right, click **Boot Configuration**.
- 3. Click the **iSCSI Boot** button.
- 4. Under **Configure General Parameters**, complete the following:
 - a. Select the **iSCSI Boot Enabled (offload)** check box to enable the iSCSI Boot offload mode, or clear the check box to disable it.

Note that this check box option is only available when **Boot Mode** is set to **Offload**. Also, enabling iSCSI offload mode will set the **MBA Boot Protocol** to **None**. This feature is only applicable to 41000 Series Adapters. The 578*xx* adapters do not support hardware iSCSI boot on VMware.

b. For the Boot Mode, select Non-offload or Offload.

Note that selecting **Non-offload** sets the MBA Boot Protocol to **iBFT**. Selecting **Offload** and enabling the iSCSI Boot (offload) sets the **MBA Boot Protocol** to **None**. This feature is only applicable for 41000 Series Adapters. The 578*xx* adapters do not support hardware iSCSI boot on VMware.

- c. Select the **TCP/IP Parameters via DHCP** check box to enable the TCP/IP parameters via DHCP, or clear the check box to disable it.
- d. Select the **iSCSI Parameters via DHCP** check box to enable the iSCSI parameters via DHCP, or clear the check box to disable it.
- e. Select the **CHAP Authentication** check box to enable the CHAP authentication, or clear the check box to disable it.
- f. Select **Enabled** or **Disabled** in the **Boot to iSCSI target*** option. (not applicable to 41000 Series Adapter).
- g. Type the DHCP vendor ID in the **DHCP Vendor ID** box.
- h. Set a value (from 0 to 255) in the Link Up Delay Time box.
- i. Select the **Use TCP Timestamp**¹ check box to enable the TCP time stamp, or clear the check box to disable it.

¹ This option does not apply to 41000 Series Adapters.

- j. Select the **Target as First HDD**¹ check box to enable the target as first HDD, or clear the check box to disable it.
- k. Set a value (from 0 to 60) in the LUN Busy Retry Count¹ box.
- I. Select **IPv4** or **IPv6** for the **IP Version** option.
- m. Select the **HBA Boot Mode**¹ check box to enable the HBA boot mode or clear the check box to disable it.
- 5. Click Save.

Figure 5-11 on page 106 shows the **Configure General Parameters** section in the iSCSI Boot Configuration window.

Configuring Initiator Parameters

To configure the iSCSI initiator parameters:

- 1. In the QConvergeConsole system tree, select an adapter, and then select the appropriate port.
- 2. In the content pane on the right, click **Boot Configuration**.
- 3. Click the **iSCSI Boot** button.
- 4. Under **Configure Initiator Parameters**, complete the following:
 - a. Type the IP address in the **IP Address** box.
 - b. Type the subnet mask in the **Subnet Mask** box.
 - c. Type the default gateway in the **Default gateway** box.
 - d. Type the primary DNS in the **Primary DNS** box.
 - e. Type the secondary DNS in the **Secondary DNS** box.
 - f. Type the iSCSI name in the **iSCSI Name** box.
 - g. Type the CHAP ID in the CHAP ID box.
 - h. Type the CHAP secret key in the CHAP Secret box.
- 5. Click **Save**.

Figure 5-11 on page 106 shows the Configure Initiator Parameters section in the iSCSI Boot Configuration window.

Configuring Primary/Secondary Target Parameters

To configure the iSCSI primary and secondary target parameters:

- 1. In the QConvergeConsole system tree, select an adapter, and then select the appropriate port.
- 2. In the content pane on the right, click **Boot Configuration**.
- 3. Click the **iSCSI Boot** button.

- 4. Under Configure **Primary Target Parameters**, complete the following:
 - a. Select the **Connect** check box to enable connect, or clear the check box to disable it.
 - b. Type the IP address in the **IP Address** box.
 - c. Type a value in the **TCP Port** box.
 - d. Type a value in the **Boot LUN** box.
 - e. Type the iSCSI name in the **iSCSI Name** box.
 - f. Type the CHAP ID in the **CHAP ID** box.
 - g. Type the CHAP secret key in the **CHAP Secret** box.
 - h. Complete Step 5 as needed.
- 5. Under **Configure Secondary Target Parameters**, complete the following:
 - a. Select the **Connect** check box to enable connect, or clear the check box to disable it.
 - b. Type the IP address in the **IP Address** box.
 - c. Type a value in the **TCP Port** box.
 - d. Type a value (from 0 to 255) in the **Boot LUN** box.
 - e. Type the iSCSI name in the **iSCSI Name** box.
 - f. Type the CHAP ID in the **CHAP ID** box.
 - g. Type the CHAP secret key in the **CHAP Secret** box.
- 6. Click Save.

Figure 5-11 on page 106 shows the **Configure Primary Target Parameters** and **Configure Secondary Target Parameters** section in the Configure iSCSI Boot Parameters window.

Configuring MPIO Parameters

NOTE

This feature is not applicable to 41000 Series Adapters.

To configure the MPIO parameters:

- 1. Select the appropriate port in the QConvergeConsole system tree.
- 2. Click **Boot Configuration**.
- 3. Click the **iSCSI Boot** option.

- 4. Complete the following in the **Configure MPIO Parameters** pane:
 - a. Select the **Enable MPIO** check box to enable MPIO, or clear the check box to disable it.
 - b. Select a MAC address from an adapter (or select **None**) for the **Secondary Device**.
 - c. Select the **Use Independent Target Portal** check box to enable the use of independent target portal, or clear the check box it to disable it.
 - d. Select the **Use Independent Target name** check box to enable the use of independent target name, or clear the check box to disable it.
- 5. Click Save.

Figure 5-11 shows the **Configure MPIO Parameters** section in the iSCSI Boot Configuration window for 578xx Series Adapters.

Getting Started Summary Virtual Machines Resource Alloca	tion Performance Con	figuration Tasks & Events Ale	erms Permissic	ons Maps QConvergeConsole					
💢 φιοgic	Adapter Mana	gement						😰 Re	efresh
□ 172.27.9.112	Information Boot Config	uration Diagnostics							-
 	MBA ISCSI Boot FCoE B	oot							
QLE2562:LFD1115N06966 ImgQLE8362:RFE1250H08700	Configure iSCSI E	oot Parameters							
Adapter1: BCM578405 B0	Configure General Pa	ameters	Configure I	Initiator Parameters	Configure	Primary Target Parameters	Configure MPIO Param	eters	
€ → _☉ Port 0	TCP/IP Parameters via DHCP	Enabled	IP Address		Connect	Disabled	Enable MPIO	Disabled	
⊕ → Port 1	ISCSI Parameters via DHCP	Enabled	Subnet Mask		IP Address		Secondary Device	None	
Adapter2: QLE85325 B0	CHAP Authentication	Disabled	Default		TCP Port	3260 🗘	Portal	Disabled	
⊕ Port 1	Boot to iSCSI target	Enabled	Primary DNS		Boot LUN	0 ‡	Use Independent Target name	Disabled	
~ * Ø	DHCP Vendor ID		Secondary		ISCSI Name		-		_
	Link Up Delay Time	0 🗘	LINS ISCOL Name		CHAP ID				
0	Use TCP Timestamp	Disabled			CHAP Secret				
	Target as First HDD	Disabled	CHAP ID		Configure	Secondary Target Parameters			
	LUN Busy Retry Count	0 🗘	CHAP Secret	<u> </u>	Connect	Disabled			
	IP Version	IPv4 V			IP Address				
	HBA Boot Mode	Disabled]		TCP Port	3260 🗘			
					Boot LUN	0 🗘			
					ISCSI Name				
					CHAP ID				
					CHAP Secret				
	1								
				Save					•

Figure 5-11. iSCSI Boot Configuration Pane for 578xx Series Adapters

Configuring FCoE Boot

This section describes how to configure general and target FCoE boot.

Configuring General Parameters

To configure the FCoE general parameters:

- 1. In the QConvergeConsole system tree, select an adapter, and then select the appropriate port.
- 2. In the content pane on the right, click **Boot Configuration**.
- 3. Click the **FCoE Boot** button.

- 4. Under **Configure General Parameters**, complete the following:
 - a. Select the **Boot to FCoE target**¹ check box to enable boot to FCoE target, or clear the check box to disable it.
 - b. Select the **Target as First HDD**¹ check box to enable target as first HDD, or clear the check box to disable it.
 - c. Set a value (from 0 to 255) in the Link Up Delay Time box.
 - d. Set a value (from 0 to 60) in the LUN Busy Retry Count¹ box.
 - e. Set a value (from 0 to 8) in the Fabric Discovery Timeout box.
 - f. Select the **FCoE HBA Boot Mode**¹ check box to enable the FCoE HBA Boot Mode, or clear it to disable it.
- 5. Click **Save**.

Figure 5-12 shows the **Configure General Parameters** section in the Configure FCoE Boot Parameters window.

Configuring Target Parameters

To configure the FCoE target parameters:

- 1. In the QConvergeConsole system tree, select an adapter, and then select the appropriate port.
- 2. In the content pane on the right, click **Boot Configuration**.
- 3. Click the **FCoE Boot** button.
- 4. Under **Configure Target Parameters**, complete the following:
 - a. Select the appropriate **Port WWN** check box(es) to enable the port WWN to be connected, or clear the check box to disable it.
 - b. Type the port worldwide name in the **Port WWN** boxes.
 - c. Set a value (from 0 to 255) in the **Boot LUN** box.
- 5. Click Save.

¹ This option does not apply to 41000 Series Adapters.

Figure 5-12 shows the **Configure General Parameters** section in the Configure FCoE Boot Parameters window.

Getting Started Summary Virtual Machines Resource Alloc	ation Performance Cor	nfiguration \ Tasks & Events \	Alarms Permi	ssions	Maps (QConverç	eConsole						
Ά φιοgic	Adapter Mana	dapter Management								& Refresh			
□ □ 172.27.9.112	Information Boot Config	puration Diagnostics											_
ImpQLE2764:AFD1438Y00269 ImpQLE2670:AFE1229F06865	MBA ISCSI Boot FCoE Boot												
 	Configure FCoE Boot Parameters												
Adapter1: BCM57840S B0	Configure General Pa	rameters	Configure	larget l	aramete	ers							
	Boot to FCoE target	✓ Enabled	Connected	Port V	/WN							Boot LUN	
⊕ Port 1	Target as First HDD	Disabled	Disabled	00	00	00	00	00	00	00	:00	0	*
Adapter2: QLE85325 B0	Link Up Delay Time	0 🗘	Disabled	00	00	00	00	00	00	00	:00	0	•
⊕ → _☉ Port 0	LUN Busy retry Count	0 🗘	Disabled	00	00	00	00	00	00	00	:00	0	•
⊕ → Port 1	Fabric Discovery Timeout	4 🗘	Disabled	00	00	00	00	00	00	00	:00	0	•
	FCoE HBA Boot Mode	✓ Enabled	Disabled	00	00	00	00	00	00	00	:00	0	•
	,		Disabled	00	00	00	00	00	00	00	:00	0	*
			Disabled	00	00	00	00	00	00	00	:00	0	÷
			Disabled	00	00	00	00	00	00	00	:00	0	•
						Sav	e						

Figure 5-12. FCoE Boot Configuration Panel

Configuring Link Settings

If your 578xx/41000 Series Adapters support SmartAN[™] (smart auto negotiation), then the vCenter Server Plug-in has the Link Settings option, as shown in Figure 5-13.

172.27.2.13 ¥Mware E5Xi, 6.0.0, 3620759		
Getting Started Summary Virtual Machines Res	source Allocation Performance Configuration Tasks & Events Alarms Permissions Maps QConvergeConsole	
💢 φιοgic	Adapter Management	n
□ 172.27.2.13	Information Boot Configuration Diagnostics Link Settings	
😑 🌉 Adapter1: QL452125 B0		-
+ Dort 0	Link Settings	
	Smart AutoNeg	
	Smart AutoNeg	
	O Advanced Link Settings	
	NVM Speed	
	FEC An Mode	
c	Save	

Figure 5-13. Link Settings

On the Link Settings page, the adapter port can be configured for **Smart AutoNeg** or **Advanced Link Settings**. Selecting **Advanced Link Settings** allows you to configure the speed and FEC modes. The available speeds vary based on the speed capability of the adapter.

The **Smart AutoNeg** option may also appear in the **MBA Boot Configuration** list of available speeds. Changing the speed on the Link Settings page also changes the speed in the **MBA Boot Configuration** list.

Running Adapter Port Diagnostics

This section describes how to run a port diagnostic test.

To run a port diagnostic test:

- 1. In the QConvergeConsole system tree, select an adapter, and then select the appropriate port.
- 2. In the content pane on the right, click **Diagnostics**.
- 3. Specify the test type to run by selecting the appropriate **Test** check box or boxes, as shown in Figure 5-14:
 - Control Registers
 - Internal Memory
 - EEPROM
 - □ Interrupt
 - Loopback MAC¹
 - Loopback PHY
 - LED

Getting Started Summary Virtual Machines Resour	ce Allocation	Performance Configuration 1 Adapter Management	Fasks & Events Alarm	Permissions Maps QConvergeConsole	_	-
□ 172.27.9.112	Informatio	n Boot Configuration Diagnostics			2 Rel	fresh
	Å Iå ₽	ort Diagnostics				
mgQLE8362:RFE1250H08700		Test	Pass / Failed		Result	
Adapter1: BCM578405 B0		Control Registers				
Port 0		Internal Memory				
Port 1		EEPROM				
😑 💭 Adapter2: QLE85325 B0		Interrupt				
⊕ → _☉ Port 0		Loopback MAC				
⊕ → _☉ Port 1		Loopback PHY				
		LED				
		LED Inter	val	5] ✿	Number of loops 1]

Figure 5-14. Diagnostics Pane

¹ This option does not apply to 41000 Series Adapters.

- 4. Select a value in the **LED Interval** box.
- 5. Select the number of iterations of each test in the **Number of Loops** box.
- 6. Click Start Test.

NOTE

After the test is complete, the Diagnostics page as shown in Figure 5-15 shows the result.

🗘 φιοgic'		Adapter Manageme	nt			🛃 Refresh
172.27.9.112	Informatio	on Boot Configuration Diagno	ostics			
ImpQLE2764:AFD1438Y00269 ImpQLE2670:AFE1229F06865 ImpQLE2670:AFE1229F06865	ŧ ļ † ₽	ort Diagnostics				
QLE8362:RFE1250H08700		Test	Pass / Failed		Result	
Adapter1: BCM578405 B0		Control Registers	3/0	3 Passed		
Port 0		Internal Memory	3/0	3 Passed		
Port 1	V	EEPROM	3/0	3 Passed		
🖹 🌅 Adapter2: QLE85325 B0	V	Interrupt	3/0	3 Passed		
+ 🗝 Port 0		Loopback MAC	3/0	3 Passed		
+ -> Port 1		Loopback PHY	3/0	3 Passed		
	•	LED	3/0	3 Passed		
		LED	Interval	5	Number of loops	3
				st St	art Test	

Figure 5-15. Diagnostics Pane Test Results

Viewing Function Information for 578xx/41000 Series Adapters

To view information for functions on 57xxx/41000 Series Adapters, select the function in the system tree. The Adapter Management window shows the function information and function Ethernet statistics.

Function Information

Figure 5-16 shows function information on 578xx/41000 Series Adapters.

- Vital Signs:
 - MAC Address
 - Permanent MAC Address
 - **iSCSI MAC Address** (when storage is enabled)
 - **FCoE MAC Address** (when storage is enabled)
 - **FCoE Node WWN** (when storage is enabled)
 - **FCoE Port WWN** (when storage is enabled)
 - D MTU

- Flow Control
- **Driver Information:**
 - Driver Name
 - Driver Version
 - Driver Date
 - □ Interface (UP or DOWN)
- Multi-function:
 - Physical Network MAC Address
 - Physical FCoE MAC Address
 - Physical iSCSI MAC Address
 - □ Minimum Bandwidth (%)
 - Maximum Bandwidth (%)
 - L2NIC Protocol
 - iSCSI Protocol
 - FCoE Protocol

172.27.0.26 VMware E5Xi, 5.5.0, 1331820			
Getting Started Summary Virtual Machines Resource Allocal	tion Performance Configuration	on Tasks & Events Alarms Permissions Maps QConvergeConsole	
Χ Α ΦΓΟΘΙC	Adapter Manageme	ent	nefresh
⊟ 172.27.0.26	Information Statistics		
QLE8362:RFE1315H65345			
	Function Information	East in Q	
🕀 📑 Port 2			
QLE8242:RFE1317H72726	Vital Signs		
🕀 🔚 Port 1	MAC Address	00:0E:1E:50:30:C0	
🕀 🔚 Port 2	Permanent MAC Address	000E1E5030C0	
EQUE2560:USJ1234567	iSCSI MAC Address	00:0E:1E:50:30:C1	
FC_21-00-00-24-FF-00-F2-68	FCoE MAC Address	00:0E:1E:50:30:C1	
Adapter1: BCM57840 B0	FCoE Node WWN	10-00-0E-1E-50-30-C1	
	FCoE Port WWN	20-00-0E-1E-50-30-C1	
© 2⊘ 	MTU	1500	
	Flow Control	RX ON, TX ON	
Adapter2: BCM578405 B0	Driver Information		
Port 0	Driver Name	bnx2x	
BCM57840 NetXtreme II 10 Gigabit Ethernet rev	Driver Version	1.712.34	
11 (vmnic8)	Driver Date	N/A	
iSCSI - 00:0E:1E:50:30:C1	Interface	DOWN	
⊕ FCoE - 10-00-00-0E-1E-50-30-C1			
Port 1			
BCM57840 NetXtreme II 10 Gigabit Ethernet rev 11 (vmnic9)			

Figure 5-16. Function Information on 578xx/41000 Series Adapters

Function Ethernet Statistics

Figure 5-17 shows the function Ethernet statistics on 578xx/41000 Series Adapters. Statistics include:

- Packets Received
- Packets Transmitted

- Broadcast Frames Received
- Broadcast Frames Transmitted
- Directed Frames Received
- Directed Frames Transmitted
- Multicast Frames Received
- Multicast Frames Transmitted
- Carrier Sense Errors
- Deferred Transmissions
- Excessive Collisions
- Late Collisions
- Multiple Collision Frames
- Single Collision Frames
- Octets Received
- Octets Transmitted
- Receive Threshold Hits
- Transmit Threshold Hits

To update the statistics, click **Refresh**.

172.27.9.185 VMware ESXI, 5.5.0, 1623387 Getting Started Summary Virtual Machines Resource Allocation Performance Configuration Tasks & Events Alarms Permissions Maps QConvergeConsole				
💢 φιοgic	Adapter Man	agement		
I72.27.9.185	Information Statistics			
😑 🌉 Adapter1: 5781055 B0	Ethernet Statistics	East in O		
□ → _☉ Port 0				
BCM57810 10 Gigabit Ethernet Multi	Packets Received	0		
Function rev 10 (vmnic6)	Packets Transmitted	0		
ECM5/810 10 Gigabit Ethernet Multi Function rev 10 (vmnic12)	Broadcast Frames Received	0		
BCM57810 10 Gigabit Ethernet Multi	Broadcast Frames Transmitted	0		
Function rev 10 (vmnic14)	Directed Frames Received	0		
Function rev 10 (vmnic16)	Directed Frames Transmitted	0		
Port 1	Multicast Frames Received	0		
	Multicast Frames Transmitted	0		
 ➡ Adapter2: 5781055 B0 ⊕ ➡ Port 0 	Total Receive Errors	0		
	Total Transmit Errors	0		
+ ->_ Port 1	Carrier Sense Errors	0		
	Deferred Transmissions	0		
	Excessive Collisions	0		
	Late Collisions	0		
	Multiple Collision Frames	0		
	Single Collision Frames	0		
	Octets Received	139942077		
	Octets Transmitted	15226		
	Receive Threshhold Hits	0		
	Transmit Threshhold Hits	0		
		C Refresh		

Figure 5-17. Function Ethernet Statistics on 578xx/41000 Series Adapters

Viewing iSCSI Information for 578xx/41000 Series Adapters

To view iSCSI information for 578xx/41000 Series Adapters, select the iSCSI in the system tree.

NOTE

iSCSI must be configured for a function in the adapter content pane.

The Adapter Management window shows the following iSCSI information:

- Vital Signs:
 - □ MAC Address
 - IPv4 Address
 - IPv6 Address
 - 🗆 MTU
 - Device ID
- Driver Information:
 - Driver Name
 - Driver Version
 - Driver Firmware Version

Figure 5-18 shows the iSCSI information for 578xx/41000 Series Adapters.

172.27.0.26 VMware E5Xi, 5.5.0, 1331820					
Getting Started Summary Virtual Machines Resource Allocation Performance Configuration Tasks & Events Alarms Permissions Maps QConvergeConsole					
💢 φιοgic	Adapter Management				
□ 172.27.0.26	Information				
QLE8362:RFE1315H65345					
🕀 📑 Port 1	iscsi Function Information		x		
🕀 📑 Port 2	U		QLOGIC		
QLE8242:RFE1317H72726	Vital Signs				
🕀 📑 Port 1	MAC Address	00:0E:1E:50:30:C1			
	IPv6 Address	00:00:00:00:00:00:00:00:00:00:00:00:00:			
QLE2560:USJ1234567	MTU	9000			
FC_21-00-00-24-FF-00-F2-68	Device ID	5793			
😑 🌉 Adapter1: BCM57840 B0	Driver Information				
🕀 🛶 Port 0	Driver Name	bnx2i			
Port 1	Driver Vesrion	2.712.50.v55.4			
	Firmware Vesrion	bc 7.12.3			
Adapter2: BCM57840S B0					
□ → _⊘ Port 0					
 BCM57840 NetXtreme II 10 Gigabit Ethernet rev 11 (vmnic8) 					
→ iSCSI - 00:0E:1E:50:30:C1					
€ FCoE - 10-00-00-0E-1E-50-30-C1					
Port 1					
 BCM57840 NetXtreme II 10 Gigabit Ethernet rev 11 (vmnic9) 					

Figure 5-18. iSCSI Information on 578xx/41000 Series Adapters

If there are active iSCSI sessions, selecting the portal in the system tree shows function information regarding the sessions. The iSCSI **Portal information** includes the **Portal IP** and each session's information, including:

- Target
- Session State
- Target Portal
- Initiator Portal
- Initial R2T
- Immediate Data
- Max Outstanding R2T
- Data Sequence Order
- Data PDU in Order
- Error Recovery Level
- Connection ID
- Session Unique ID

172.28.12.136 ¥Mware ESXi, 6.0.0, 2494585 | Evaluation (38 days remaining) Started 🔍 Summary 🔍 Virtual Machines 🔍 Resource Allocatio **AA OLOGIC Adapter Management** 😰 Refresh... **7**0 Information Adapter2: BCM578405 B0 ⊕ → Port 0 \mathbf{x} i iSCSI Portal Information 🕀 🔶 Port 1 OLOGIC Portal Information Adapter3: BCM578405 B0 🕀 🔶 Port 0 Portal IP 192,168,100,51 Session 0 Information 😑 🛶 Port 1 Target ign.1986-03.com.hp:storage.p2000g3.13491b47fb BCM57840 NetXtreme II Ethernet Multi Function Session State Connected rev 11 (vmnic5) 192.168.100.9 Target Portal BCM57840 NetXtreme II Ethernet Multi Function Initiator Portal 192.168.100.51 rev 11 (vmnic9) Initial R2T True BCM57840 NetXtreme II Ethernet Multi Function rev 11 (vmnic11) Immediate Data False Max Outstanding R2T 1 Data Sequence in Order True ■ iSCSI -00:0E:1E:50:26:8B Data PDU in Order True □ ISCSI Portal -0192.168.100.51 Error Recovery Level 0 262176 Connection ID ⊕ 🌮 iqn. 1986-03. com. hp:storaç 73679168365608 Session Unique ID 🧼 iqn.2001-Session 1 Information 05.com.eguallogie 8a0906-3a14b7e b5e000e7ac2535 Target iqn.2001-05.com.equallogic:0-8a0906-3a14b7e04-b5e000e7ac253579-isns Session State Connected isns 🧼 iqn. 2001-Target Portal 192.168.100.5 05.com.eguallogi 192,168,100,51 Initiator Portal 8a0906-12c8987 æ c4200152096551 Initial R2T False temp

Figure 5-19 shows the iSCSI Portal Information for 578xx/41000 Series Adapters.

Figure 5-19. iSCSI Portal Information on 578xx/41000 Series Adapters

Viewing Information for an iSCSI Target Connected to 578xx/41000 Series Adapters

To view information for an iSCSI target connected to 578xx/41000 Series Adapters, select the iSCSI target in the system tree.

The Adapter Management window shows the following iSCSI target information:

- Target Information:
 - Target IQN Name
 - SCSI Target Number
 - □ MAC Address
 - IPv4 Address
 - IPV6 Address
 - LUN Count

- Session Information:
 - □ Target
 - Session State
 - Target Portal
 - Initiator Portal
 - Initial R2T
 - Immediate Data
 - □ Max Outstanding R2T
 - **Data Sequence in Order**
 - Data PDU in Order
 - Error Recovery Level
 - Connection ID
 - Session Unique ID

Figure 5-20 shows the iSCSI target attached to 578xx/41000 Series Adapters.

172.28.12.136 VMware ESXi, 6.0.0, 2494585 Evaluation (38 days remaining)					
Getting Started Summary Virtual Machines Resource Allocation Performance Configuration Tasks & Events Alarms Permissions Maps QConvergeConsole					
Adapter Management					
Adapter2: BCM578405 B0	Information				
 → Port 0 → Port 1 	iSCSI Target Information	QLOGIC			
Adapter3: BCM578405 B0	Target Information				
	Target IQN Name	iqn. 1986-03. com. hp:storage. p2000g3. 13491b47fb			
O Port 1	SCSI Target Number	0			
	MAC Address	00:00:00:00:00			
BCM57840 NetXtreme II	IPv4 Address	192.168.100.9			
rev 11 (vmnic5)	IPv6 Address	00:00:00:00:00:00:00:00:00:00:00:00:00:			
BCM57840 NetXtreme II	LUN Count	1			
rev 11 (vmnic9)	Session 0 Information				
BCM57840 NetXtreme II	Target	iqn. 1986-03. com. hp:storage. p2000g3. 13491b47fb			
rev 11 (vmnic11)	Session State	Connected			
iscsi -	Target Portal	192.168.100.9			
00:0E:1E:50:26:8B	Initiator Portal	192.168.100.51			
□ iscsi Portal - 2192,168,100,51	Initial R2T	True			
iqn.1986-	Immediate Data	False			
🛨 🚩 03. com. hp:storag	Max Outstanding R2T	1			
iqn.2001- 05.com.equallogic	Data Sequence in Order	True			
⊕ 8a0906-3a14b7e Ba0906-3a14b7e Ba	Data PDU in Order	True			
bSeuture/ac2535 isns	Error Recovery Level	0			
iqn.2001-	Connection ID	262176			
05. com. equallogii = 8a0906-12c8987i	Session Unique ID	73679168365608			
c4200152096551 temp					

Figure 5-20. iSCSI Target Attached to 578xx/41000 Series Adapters

Viewing Information for an iSCSI LUN Connected to 578xx/41000 Series Adapters

To view information for an iSCSI LUN connected to 578xx/41000 Series Adapters, select the iSCSI LUN in the system tree. The Adapter Management window shows the following iSCSI LUN information:

- iSCSI Unit Number
- Capacity (MB)
- Vendor ID
- Product ID
- Device Type
- Product Rev Level

Figure 5-21 shows the iSCSI LUN Information on 578xx/41000 Series Adapters.

172.28.12.136 ¥Mware E5Xi, 6.0.0, 2494585 Evaluation (38 days remaining)					
Getting Started Summary Virtual Machines Resource Allocation Performance Configuration Tasks & Events Alarms Permissions Maps QConvergeConsole					
Adapter		r Management			
-					
Adapter2: BCM578405 B0	iscsi LUN Information	E FastLinQ			
Port 0					
Port 1	SCSI Unit Number				
Adapter3: BCM578405 B0	Capacity (MB)	31249			
> Port 0	Vendor ID				
	Product ID	P2000G3 FC/ISCSI			
Port 1	Device Type	Disk			
BCM57840 NetXtreme II Ethernet Multi Function rev 11 (vmnic5)	Product Rev Level	17251			
BCM57840 NetXtreme II Ethernet Multi Function rev 11 (vmnic9)					
BCM57840 NetXtreme II Ethernet Multi Function rev 11 (vmnic11)	•				
☐ iSCSI - 00:0E:1E:50:26:8B					
■ ISCSI Portal - 192.168.100.51					
□ ^{(iqn. 1986-} 03.com.hp:storage.p2000g3					
LUN0 - HP - P2000G3 FC/ISCSI					

Figure 5-21. iSCSI LUN Information on 578xx/41000 Series Adapters

Part II

QConvergeConsole VMware vSphere Web Client Plug-in

Part II describes how to install the QConvergeConsole VMware vSphere Web Client Plug-in and configure 578xx/41000 Series Adapters and adapters based on 578xx Controllers. This section includes the following chapters:

- Chapter 7 vSphere Web Client Plug-in Overview
- Chapter 8 Installing the vSphere Web Client Plug-in
- Chapter 9 Getting Started with vSphere Web Client Plug-in
- Chapter 10 Using the vSphere Web Client Plug-in
- Chapter 11 Managing Marvell 578xx and 41000 Series Adapters

NOTE

If you are using VMware ESX or ESXi, see the Chapter 2 Installing the vCenter Server Plug-in for details on installation and initial setup.

7 vSphere Web Client Plug-in Overview

The vSphere Web Client Plug-in configures QLogic Fibre Channel Adapters, NICs, and Converged Network Adapters using a browser within a VMware vSphere environment. This plug-in is part of the QConvergeConsole suite of management tools. These tools include the QConvergeConsole Web-based GUI and the QConvergeConsole CLI, which are used in operating system environments other than vSphere, such as Windows and Linux. The plug-in provides an interactive GUI that is similar to the QConvergeConsole Web-based tool.

The VMware vCenter Server 6.5 added a new HTML5 based vSphere Client. Marvell provides the new QConvergeConsole HTML5 based vSphere Client Plug-in (HTML5 based vSphere Client Plug-in) with the same functionality and workflow as the vSphere Web Client Plug-in for the 578xx/41000 Series Adapters. In this chapter, vSphere Web Client Plug-in refers to both plug-ins, unless otherwise noted.

Features

The vSphere Web Client Plug-in enables you to configure Marvell QLogic 2600 and 2700 Series Fibre Channel Adapters, 578xx and 41000 Series Intelligent Ethernet Adapters, and 578xx and 41000 Series Converged Network Adapters in the following ways:

- Management for Fibre Channel, FCoE, iSCSI, and NIC adapters
- Storage and network maps that provide an end-to-end view of the adapter connections to the software and hardware components in the VMware ESX and ESXi environments.
- Dynamic management of NIC partitioning (NPAR) for supported Converged Network and Intelligent Ethernet adapters, including the ability to modify the partition function type.
- Querying and modifying driver parameters for all supported protocols

- Viewing and managing initiators, targets, and LUNs for Fibre Channel, FCoE, and iSCSI ports
- Querying statistics, running diagnostics, and obtaining transceiver information

System Requirements

This section lists the requirements for proper operation of the vSphere Web Client Plug-in.

Hardware Requirements

The vSphere Web Client Plug-in requires the following hardware:

- VMware vCenter ESXi Server with adapters installed
- Server to run the VMware vCenter Server

Software Requirements

Marvell provides the following components that must be installed on the ESXi Server and the vCenter Server:

- vCenter Server 6.0 or later, or vCenter Server Appliance 6.0 or later with vSphere Web Client Plug-in installed or registered
- vSphere Web Client application installed and pointing to the vCenter Server with the vSphere Web Client Plug-in installed, or registered
- Latest firmware and drivers
- QLogic Adapter CIM Provider (see "Installing the QLogic Adapter CIM Provider" on page 14)
- vSphere Web Client 6.0 or later
- Optional) Tomcat server to host the plug-in, if not installing on the same server where the vCenter Server is installed. Tomcat 7 is recommended.
- Web browser with the Adobe Flash Player plug-in installed

Supported Adapters

The vSphere Web Client Plug-in supports the following adapters:

- 2600 and 2700 Series Fibre Channel Adapters
- 578xx and 41000 Series Intelligent Ethernet Adapters
- 578xx and 41000 Series Converged Network Adapters

The HTML5 based vSphere Client Plug-in supports the following adapters:

- BMCM57xx, BCM57xxx, and 41000 Series Intelligent Ethernet Adapters
- BMCM57xx, BCM57xxx, and 41000 Series Converged Network Adapters

8

Installing the vSphere Web Client Plug-in

This chapter explains how to install and uninstall the vSphere Web Client Plug-in:

- Installing the vSphere Web Client Plug-in
- "Uninstalling the vSphere Web Client Plug-in" on page 124

NOTE

The QLogic Adapter CIM Provider is required for the vSphere Web Client Plug-in to operate. For installation details, see "Installing the QLogic Adapter CIM Provider" on page 14 and "Uninstalling the QLogic Adapter CIM Provider" on page 16.

Installing the vSphere Web Client Plug-in

NOTE

For a list of packages needed to install the vSphere Web Client Plug-in, see "Installation Package Contents" on page 6.

To install the vSphere Web Client Plug-in:

- 1. Gather all information necessary for the installation
 - □ IP address of the vCenter Server
 - vCenter Server credentials (user name and password)
 - Where to host the QLogic Adapter vSphere Web Client Plug-in (on vCenter Server or other server)

If you are hosting the vSphere Web Client Plug-in on a non-vCenter Server, ensure the following:

- The server has Tomcat running as a service. (Tomcat 7 recommended)
- You have the IP address of the Tomcat instance ready.

- The Tomcat CATALINA_HOME environment variable is set to the appropriate directory.
- The Tomcat server is running the HTTPS protocol. The vSphere Web Client Plug-in must be available through an https URL. Consult the Tomcat documentation to enable the HTTPS protocol, if it is not already enabled.

NOTE

If the installer does not register the plug-in properly, or if you get the Please check the input strings and try again error message, and the input strings are correct, there may be an issue with the Tomcat configuration.

Try adding the **SSLv2Hello** protocol to the list of enabled protocols in the HTTPS configuration of Tomcat.

For example:

```
<Connector port="8443"

protocol="org.apache.coyote.http11.Http11Protocol"

maxThreads="150" SSLEnabled="true" scheme="https"

secure="true" keystoreFile="C:\Users\Administrator\.keystore"

keystorePass="changeit"

clientAuth="false" sslProtocol="TLS"

sslEnabledProtocols="SSLv2, SSLv3, TLSv1, TLSv1.1, SSLv2Hello"

/>
```

- 2. Run the installer on the server running the vCenter Server or providing the Tomcat service. Provide the information requested by the installer.
 - On Windows, double-click the installer and follow the instructions in the GUI.
 - On Linux:
 - a. Make sure the user is the root user (or has root privileges).
 - b. Create the installer executable if one does not already exist. Choose the installer for your system (32-bit or 64-bit), and issue the following command:

chmod +x <installer>

Where <installer> is the file name of the installer.

c. Run the installer by issuing the following command:

./<installer>

Where ${\scriptstyle < \texttt{installer} >}$ is the file name of the installer.

d. Follow the instructions provided by the installer.
3. Restart the vCenter Server Web services, or the Tomcat service.

If the vSphere Web Client Plug-in is being hosted on the vCenter Server, you must restart the VMware Virtual Center Management Web services. In Windows, go to the **Administrative Tools** menu, select **Services**, and restart VMware Virtual Center Management Web services. On the vCenter Server Appliance (Linux), issue the following command:

/etc/init.d/vmware-vpxd tomcat-restart

4. Restart any vSphere Web Client sessions.

If you are updating a previous version of the vSphere Web Client Plug-in, restart the vSphere Web Client services. In Windows, go to the **Administrative Tools** menu, select **Services**, and restart VMware vSphere Web Client. On the vCenter Server Appliance (Linux), issue the following command:

/etc/init.d/vsphere-client restart

Uninstalling the vSphere Web Client Plug-in

The procedure for uninstalling the vSphere Web Client Plug-in varies by OS:

- Uninstalling the vSphere Web Client Plug-in on Windows is initiated through the Windows Uninstall Programs Control Panel. Follow the uninstaller user interface to remove the plug-in.
- Uninstalling the vSphere Web Client Plug-in on Linux is initiated by the following command:

/opt/qlogic/QLogic\ Adapter\ Web\ Client\ Plugin/Uninstall_QLogic\ Adapter\
Web\ Client\ Plugin/Uninstall\ QLogic\ Adapter\ Web\ Client\ Plugin

Follow the prompts (user interface or console commands) to remove the plug-in by the root user.

9 Getting Started with vSphere Web Client Plug-in

This chapter describes how to start and exit the vSphere Web Client Plug-in:

- Starting the vSphere Web Client Plug-in
- Exiting the vSphere Web Client Plug-in" on page 133

Starting the vSphere Web Client Plug-in

Before starting the vSphere Web Client Plug-in, you need the following:

- vCenter Server with vSphere Web Client Plug-in installed
- vSphere Web Client application installed and pointing to the vCenter Server with the vSphere Web Client Plug-in installed
- Web browser with the Adobe Flash Player plug-in installed (not required for the HTML5 based vSphere Client Plug-in)

To start the vSphere Web Client Plug-in:

1. Navigate the Web browser to the vCenter Server. For example:

https://<vCenter Server IP Address>

A link to either the vSphere Web Client or the vSphere Client (HTML 5) appears.

NOTE

vCenter Server 6.0 does not support vSphere Client (HTML 5) and does not show a link to the vSphere Client (HTML 5).

2. Click the link to the client to be used.

Figure 9-3, Figure 9-4, and Figure 9-5 show examples.



Figure 9-1. Getting Started with vSphere Web Client Version 6.0



Figure 9-2. Getting Started with vSphere Web Client Version 6.5



Figure 9-3. Getting Started with vSphere Web Client Version 6.7

Subplace Web Clevel - Windows Internet Explorer	the second se		LIDIX
C		🕑 👽 Carthure Strar 😽 🛪 💽 🖂	(A)+
👷 Favorites 👩 clariere trob Clerit		Q • D · ⊂ = • tex	- Sefetz - Typix - 🔂 - "
vinware			
Uner name: Administrator	VMware vSphere We	eb Client	
Password			
Una Westwa session, auffresh	aler.		
Logia			
1 may			
Dave		Diservet (Huserbac Mule: Off	14+ 14,00% +

Figure 9-4. VMware vSphere Web Client Log-in Window

3. Enter the credentials for the vCenter Server to log in.

The VMware vSphere Web Client opens, as shown in Figure 9-5.



Figure 9-5. VMware vSphere Web Client Getting Started Page

4. Click **vCenter** in the left navigation pane.



The vCenter Home page opens, as shown in Figure 9-6.

Figure 9-6. vCenter Home

5. In the navigation pane on the left, select **Hosts** to display a list of the hosts that are connected to this vCenter Server.

If no hosts are connected to this vCenter Server, you must connect a host to the vCenter Server following the instructions provided by VMware.

6. Click one of the hosts in the hosts list.



The host Getting Start page opens, as shown in Figure 9-7.

Figure 9-7. Host Getting Started Page

- 7. Follow the steps in the appropriate procedure for the vSphere Web Client version:
 - □ For vSphere Web Client 6.0:
 - a. Click the Manage tab.
 - b. Click the **QConvergeConsole** tab.
 - □ For vSphere Web Client 6.5 and 6.7:
 - a. Click the **Configure** tab.
 - b. In the navigation tree under **More**, click the **QConvergeConsole** link.



The QConvergeConsole page allows you to view and configure the adapters found on this host, as shown in Figure 9-8, Figure 9-9, and Figure 9-10.

Figure 9-8. QConvergeConsole Page, vSphere Web Client 6.0



Figure 9-9. QConvergeConsole Page, vSphere Web Client 6.5/6.7



Figure 9-10. QConvergeConsole Page, HTML Based vSphere Web Client 6.5/6.7

Exiting the vSphere Web Client Plug-in

To exit the vSphere Web Client Plug-in, do either of the following:

- Close the browser.
- Right-click in the Web Client user interface, and then on the shortcut menu, click Log Out.

10 Using the vSphere Web Client Plug-in

This chapter provides detailed instructions on how to use the vSphere Web Client Plug-in to manage Marvell adapters and connected devices, including:

- Managing Hosts
- "Managing Adapters" on page 139
- "Managing NIC (Ethernet) Ports" on page 142
- "Managing Fibre Channel Ports" on page 145
- "Managing Converged Network Adapter Ports" on page 159
- "Managing NIC Functions" on page 160
- "Managing FCoE Functions" on page 173
- "Managing iSCSI Functions" on page 190

Managing Hosts

Host management using the vSphere Web Client Plug-in includes:

- Displaying the Fabric Adapter Host View
- Viewing Driver Information
- Configuring Driver Parameters

Displaying the Fabric Adapter Host View

To display a host view of the fabric adapters:

- 1. From the vCenter Home window in the left pane, click **Hosts**.
- 2. On the Hosts page, click one of the hosts to open the Getting Started page.
- 3. From the window for the selected host, click the **Manage** tab to open the **Settings** display.



4. Click **QConvergeConsole** to open the host view of the fabric (Figure 10-1).

Figure 10-1. Host View—Storage Map

The **Map** options show storage and network maps that provide an end-to-end view of the adapter connections to the software and hardware components in the VMware ESX/ESXi environments:

- Click the Storage option to view the network components, target devices, and LUNs.
- Click the **Network** option to view the network components.

The **Parameter** options (**Fibre Channel**, **iSCSI**, and **Ethernet**) provide access to driver information and driver editing tasks. Mouse over an icon in the map to view information about that node in the network.

Viewing Driver Information

To view driver information:

- 1. From the system tree, expand a host.
- 2. Click the appropriate **Parameter** options to view information about the **Fibre Channel**, **iSCSI**, or **Ethernet** drivers.

TUSIS	E.	×
172.27.3.136 Getting Started Summary Monitor Manage Related Objects		🔹 🛐 Recent Tasks 🛛
Image: Top Level Objects Cetting Started Summary Monitor Manage Related Objects Image: Top Level Objects Cetting Started Summary Monitor Manage Related Objects Image: Top Level Objects Cetting Started Summary Monitor Manage Related Objects Image: Top Level Objects Cetting Started Summary Monitor Manage Related Objects Image: Top Level Objects Cetting Started Summary Monitor Manage Image: Top Level Objects Cetting Started Summary Monitor Manage Image: Top Level Objects Cetting Started Summary Monitor Manage Image: Top Level Objects Cetting Started Summary Monitor Manage Image: Top Level Objects Cetting Started Summary Monitor Manage Image: Top Level Objects Cetting Started Summary Monitor Manage Image: Top Level Objects Cetting Started Summary Monitor Manage Image: Top Level Objects Cetting Started Summary Monitor Manage Image: Top Level Objects Cetting Started Summary Monitor Manage Image: Top Level Objects Cetting Started Summary Monitor Manage Image: Function_1 Image: Function_1 Image: Function_1 Image: Function_1 Image: Function_1 Image: Function_1 Image: Function_1 Image: Function_1 Image: Function_1	© Ethernet Edit	

For example, Figure 10-2 shows Fibre Channel driver information.

Figure 10-2. Fibre Channel Driver Information

Configuring Driver Parameters

To configure driver parameters:

- 1. From the system tree, expand a host.
- 2. Click the appropriate **Parameter** option for the driver you want to configure (**Fibre Channel**, **iSCSI**, or **Ethernet**).
- 3. Click **Edit** to open the parameter dialog box in which to make changes.

Figure 10-3 shows an example of the Fibre Channel Driver Parameters dialog box.

172.27.3.136: Fibre Channel Driver Parameters	
Delay (in 100-microsecond increment) before generating an interrupt to notify completion of request	Enable Extended Error Message Logging
Maximum queue depth to report for target device (LUN)	Turn off ZIO (Zero Interrupt Delay) Operation Mode
Waiting time (in second) to retry commands to a port that returns PORT DOWN status Enable MSI/MSI-X Interrupt Handling	10 Image: Construction of the second secon
Firmware minidump capture level mask	0x3F 💌
	OK Cancel

Figure 10-3. Fibre Channel Driver Parameters

4. Make the necessary entries and selections, and then click **OK**.

Table 10-1 lists the configurable Fibre Channel, iSCSI, and Ethernet parameters.

Table 10-1. Driver Parameters

Driver Type	Parameters						
Fibre Channel	Enable Extended Error Message Logging						
	Turn off ZIO (Zero Interrupt Delay) Operation Status						
	Delay before generating an interrupt to notify completion of request (100ms)						
	Maximum queue depth to report for target device (LUN)						
	Waiting time (in seconds) to retry commands to a port that returns PORT DOWN status						
	Enable MSI/MSI-X interrupt handling						
	Firmware minidump capture level mask						
iSCSI	Command Timeout (s)						
	Firmware minidump capture level mask						

Driver Type	Parameters							
Ethernet	Enable automatic firmware recovery							
	Enable TCP Segmentation Offload (TSO)							
	Enable hardware VLAN support							
	Enable hardware Large Receive Offload (LRO)							
	Enable firmware minidump support							
	Enable Receive Netqueue support							
	Enable checking of MAC address/MAC learning in the receive path							
	Enable MSI interrupt handling							
	Enable MSI-X interrupt handling							
	Transmit Ring							
	Receive Ring size for 1500 MTU							
	Receive Ring size for jumbo (9000) MTU							
	Firmware minidump capture level mask							
	Number of receive netqueues per function (excluding default receive queue)							

Table 10-1. Driver Parameters (Continued)

Managing Adapters

Click an adapter in the host view system tree to display information about the adapter, as shown in Figure 10-4.



Figure 10-4. Host View—Adapters

Depending on the adapter you select, one or more of the following options are available:

- Updating the Adapter Flash Image
- Updating the Firmware Preload Table
- Updating the Firmware SerDes Table
- Configuring the Personality Type
- Configuring SR-IOV Parameters

Updating the Adapter Flash Image

To update the adapter Flash image:

- 1. From the host system tree, expand a host node.
- 2. Select an adapter.
- 3. In the content pane, click **Update Adapter Flash Image**.

- 4. In the file selection dialog box, select the firmware file (.bin) with which to perform the update, and then click **OK**.
- 5. In the Update Adapter Flash Image dialog box, verify the current Flash version, and then click **OK** to continue with the update.

The dialog box shows the progress of the update.

Updating the Firmware Preload Table

Depending on the adapter you select, the **Update Firmware Preload Table** option may be available.

To update the firmware preload table:

- 1. From the host system tree, expand a host.
- 2. Select an adapter.
- 3. In the content pane, click **Update Firmware Preload Table**.
- 4. In the file selection dialog box, select the firmware file (.dat) with which to perform the update, and then click **OK**.
- 5. In the Update Firmware Preload Table dialog box, verify the current preload table version, and then click **OK** to continue with the update.

The dialog box reports the progress of the update.

Updating the Firmware SerDes Table

Depending on the adapter you select, the **Update Firmware SerDes Table** option may be available.

To update the firmware SerDes table:

- 1. From the host system tree, expand a host.
- 2. Select an adapter.
- 3. In the content pane, click **Update Firmware SerDes Table**.
- 4. In the file selection dialog box, select the firmware file (.dat) with which to perform the update, and then click **OK**.
- 5. In the Update Firmware SerDes Table dialog box, verify the current SerDes table version, and then click **OK** to continue with the update.

The dialog box reports the progress of the update.

Configuring the Personality Type

Depending on the adapter you select, the personality type **Edit** option may be available.

To configure the personality type:

- 1. From the host system tree, expand a host.
- 2. Select an adapter.
- 3. In the content pane, click the personality type **Edit** option.
- 4. In the Personality Type dialog box, click the option for the personality you want (**FC only** or **CNA**), and then click **OK**.

Configuring SR-IOV Parameters

Depending on the adapter you select, the single root input/output verification (SR-IOV) **Edit** option may be available.

NOTE

SR-IVO Parameters are applicable to Ethernet Adapters only.

To configure the SR-IOV parameters:

- 1. From the host system tree, expand a host.
- 2. Select an adapter.
- 3. In the content pane, click the SR-IOV Edit option.
- 4. In the SR-IOV dialog box, specify the following parameters:
 - □ Enable SR-IOV—Select the check box to enable SR-IOV, or clear the check box to disable SR-IOV.
 - **VFs on Port 1**—Enter the quantity of virtual functions (VFs) on port 1.
 - **VFs on Port 2**—Enter the quantity of VFs on port 2.
- 5. To save your changes, click **OK**.

Managing NIC (Ethernet) Ports

In the host system tree, expand a NIC adapter node to view the ports. Select a port to view information about the port in the content pane, as shown in Figure 10-5.

vmware vSphere Web C	lient 🔒 🖉			🖰 Administrator@RAJ01 + Help +	I Q Search -
Hosts 💌 🖡	172.27.3.136 Actions -			12×	Ŧ
🚡 172.27.3.136	Getting Started Summary Monitor Mana	ge Related Objects			🔻 🗊 Recent Tasks 🛛 📥
 Virtual Machines Datastores 	Settings Networking Storage Alarm Defin	itions Tags Permissions QConverged	Console		All Running Failed
Networks Interview Networks Interview Networks Interview Networks Interview Interview		Performance Adapter Manag	ement		
	♥ ■ 172.27.3.136 ▶ ■ QLE8362:AAP4827A48273	General Parameters Statistics			
	mm OLE8242-X841234A54632 mm NC375/KC00MP4131 m Port 1 m Port 2 m Port 3 Port 4 m OLE8242.RFE1218008591	MAC Address Interface Name Link Status Link Speed Wake-on-LAN(WoL) Preboot eXecution Environment(PXE)	DE D3:85 D87C:CF vmnc3 Link Up 1 Gkps Disabled Disabled		My Tasks More Tasks Work in Progress
					All (0) New (0) Acknowl

Figure 10-5. Managing NIC Ports

After selecting a port, you have the following options:

- Configuring NIC Port Ethernet Parameters
- Viewing NIC Port Statistics
- Retrieving NIC Port Debug Dump

Configuring NIC Port Ethernet Parameters

To configure Ethernet parameters:

- 1. In the host system tree, expand a NIC adapter node to view the ports.
- 2. Select a port to view information about the port in the content pane.
- 3. In the content pane, click the **Parameters** tab.
- 4. In the Ethernet Parameters dialog box, enter values for the following parameters, and then click **OK**.
 - □ Rx Coalesce (µs)
 - Rx Max Coalesced Frames
 - □ Tx Coalesce (µs)
 - □ Tx Max Coalesced Frames

Viewing NIC Port Statistics

To view port statistics:

- 1. In the host system tree, expand a NIC adapter node to view the ports.
- 2. Select a port to display information about the port.
- 3. In the content pane, click the **Statistics** tab to open the Statistics page (Figure 10-6).



Figure 10-6. NIC Port Statistics

- 4. As needed, click the following buttons to manipulate the statistics:
 - □ Set Baseline—Records the current statistics values as a reference point.
 - □ **Refresh**—Updates the statistics to their current values. If there is a baseline, the **Refresh** option shows the change since the baseline.
 - **Clear Baseline**—Clears an existing baseline.

Retrieving NIC Port Debug Dump

Depending on the port you select, the **Diagnostics** tab may be available.

To retrieve the firmware debug dump:

- 1. In the host system tree, expand a NIC adapter node to view the ports.
- 2. Select a port to display information about the port.

3. In the content pane, click the **Diagnostics** tab.

The Diagnostics page shows the **Firmware Debug Dump** information (Figure 10-7).



Figure 10-7. NIC Port Firmware Debug Dump

4. To retrieve the debug.bin file, click Retrieve Firmware Debug.

Managing Fibre Channel Ports

In the host system tree, expand a Fibre Channel adapter node to view the ports, and then select a port. In the content pane, click the **General** tab to display information about the port, as shown in Figure 10-8. The figure shows port 50-00-53-37-E5-FB-F0-04 is assigned by the fabric through the Brocade switch.



Figure 10-8. Fibre Channel Ports

After selecting a port, you have the options described in the following sections:

- Using the Fibre Channel Port Test Beacon
- Configuring Fibre Channel Port Boot Parameters
- Configuring Fibre Channel Port Parameters
- Viewing Fibre Channel Port Transceiver Information
- Viewing Fibre Channel Port Statistics
- Running Fibre Channel Port Diagnostics
- Viewing Fibre Channel Port VPD
- Viewing Fibre Channel Port Temperature Information
- Viewing Fibre Channel QoS Information

The fabric can assign the world wide port name (WWPN) through a Brocade switch if both the adapter and Brocade switch are enabled to allow fabric-assigned WWPNs. For information about enabling fabric-assigned WWPNs, see the adapter user's guide and Brocade switch documentation.

The D_Port indication from the Brocade switch appears as a label attached to the port, as shown in Figure 10-9.



Figure 10-9. Fibre Channel D_Port Indication

For forward error correction (FEC) to be enabled for a connection, the port on the Brocade switch and the connected adapter port must have FEC enabled. In Figure 10-10, FEC is enabled on port FC_21-00-00-0E-1E-08-C2-00. FEC is an optional feature that can be enabled (or disabled) on links operating at 16Gbps. Its use is mandatory, and thus it is enabled automatically on links operating at 32Gbps.

vmware [,] vSphere Web Clie	ent 者 🗧		Ů Administrator@VSPHERE.LOCAL + Help +	l 🔍 Search 🚽
Navigator I	172.28.3.145 Actions ★			=* 🖉
< Home 🕨 🕲	Getting Started Summary Monitor Manage Re	lated Objects		0 W
 	Settings Networking Storage Alarm Definitions T	ags Permissions QConver	geConsole	ork in Pro
 Datacenter 172.27.0.26 172.27.2.156 	Ά οιοgic	Adapter Mana	gement	jress
172.27.9.112		Beacon Test		Test Beacon
▶	✓ Im QLE8382:AFE1226F05846 ▷ Im FC_21-00-00-0E-1E-08-C2-00 (FEC) Im FC_21-00-00-0E-1E+08-C2-01	General Boot Par Parameters	ameters Transceiver Statistics Diagnostics VPD Temperature	Edit
	✓ Im QLE2692:AFD1483Y00264	Data Rate	Auto	
	FC_20-00-00-24-FF-78-31-60	Connection Options	1 - Point to Point Only	
	BCM5709.C0	Frame Size	2048	
	► → Port0	Enable LR Enable EEC	8 Disabled	
	▶ -→ Port 1		Enabled	
	Fabric Assigned WWN	Disabled		
	▶			

Figure 10-10. FEC Enabled on Port FC_21-00-00-0E-1E-08-C2-00

Using the Fibre Channel Port Test Beacon

Depending on the port you select, the **Test Beacon** option may be available.

To activate or deactivate the port beacon:

- 1. In the host system tree, expand a Fibre Channel adapter node to view the ports.
- 2. Select a port to display information about the port.
- 3. In the content pane, click **Test Beacon**.
- 4. In the Beacon Test dialog box, click **Beacon On** (or **Beacon Off**), and then click **OK**.

Configuring Fibre Channel Port Boot Parameters

To configure port boot parameters:

- 1. In the host system tree, expand a Fibre Channel adapter node to view the ports.
- 2. Select a port to display information about the port.

3. In the content pane, click the **Boot** tab to view the Boot page (Figure 10-11).

vmware [,] vSphere Web C	lient 🔒 🖉	U Administrator@WIN-BCK5RL7N7NP • Help •	l 🔍 Search 🔸
Hosts + 🕤 🖡	172.27.9.114 Actions *	<i>E.</i>	1
🚡 172.27.9.114	Getting Started Summary Monitor Mana	ge Related Objects	* 🛐 Recent Tasks 🛛
Top Level Objects Top Level Objects Virtual Machines Vapps Datastores Notworke	Settings Networking Storage Alarm Defin	Illors Tags Permissions OconvergeConsole Performance Adapter Management	All Running Failed
Distributed Switches	 □ 172.27.9.114 ▶ ₩ 0LE9242:RFE1317H72726 > ₩ 0LE9362:RFE1315H65345 ₩ FC_21-00-00-0E-1E-14+0E-91 	Beacon Test Test Beacon Oeneral Boot Parameters Transceiver Statistics Diagnostics VPD Temperature Qos Boot Edut.	
FC_50-00-53-	EFC_50-00-53-37-E5-FB-F0-04	Enable boot from the port Disabled Fabric Assigned Boot LUN Disabled	My Tasks More Tasks Work in Progress
		If boot is enabled and the boot device is not specified, the port will alternpt to boot from the first device found. Best Name Tagest WMW LUN is Primary Boot 000000-00-00-00-00-00 0 Atternate Boot 1 00-00-00-00-00-00-00 0 Atternate Boot 3 00-00-00-00-00-00-00 0	Vork in Progress Alarms Ala(0) New (0) Acknowled.

Figure 10-11. Fibre Channel Boot Parameters

- 4. On the Boot page, click **Edit**.
- 5. In the FC/FCoE Boot dialog box, enter values for the following parameters, and then click **OK**:
 - **Enable boot from the port**
 - Fabric Assigned Boot LUN
 - □ Boot from the selected device(s)
 - Primary Boot: Target WWN, LUN ID
 - □ Alternate Boot 1: Target WWN, LUN ID
 - Alternate Boot 2: Target WWN, LUN ID
 - Alternate Boot 3: Target WWN, LUN ID

Configuring Fibre Channel Port Parameters

To configure Fibre Channel port parameters:

- 1. In the host system tree, expand a Fibre Channel adapter node to view the ports.
- 2. Select a port to display information about the port.

3. In the content pane, click the **Parameters** tab to open the Parameters page (Figure 10-12).



Figure 10-12. Fibre Channel Port Parameters

- 4. On the Parameters page, click **Edit**.
- 5. In the Fibre Channel Port Parameters dialog box, enter values for the following parameters, and then click **OK**.
 - Data Rate
 - **Connection Options**
 - Frame Size
 - Login Retry Count

Viewing Fibre Channel Port Transceiver Information

To view transceiver information:

- 1. In the host system tree, expand a Fibre Channel adapter node to view the ports.
- 2. Select a port to display information about the port.
- 3. In the content pane, click the **Transceiver** tab to open the Transceiver Information page (Figure 10-13).

4. Click **Refresh** to update the display with current information.

vmware vSphere Web Cli	ent 🔒 🖉					Öl Adr	ninistrator@RAJ01 👻 Help	👻 l 🔍 Search	•
Hosts - I	☐ 172.27.9.112 Actions ▼						E	Ŧ	I
172.27.9.112	Getting Started Summary Monitor Manag	Related Objects						• 🛐 Recent Tasks	
Virtual Machines Datastores Networks Distributed Switches	Opening states Opening Methods Methods							All Running	Failed
	 ♥ 172.27.9.112 ▶ 102.01E8442.AFE1340F11823 ♥ 100.01E3562.LFD1115N06966 ₩ FC_21-00-00-24-FF-32-FA-26 	Beacon Test Beacon is currently off. General Boot F	arameters Tran	sceiver Statistics	s Diagnostics VPC)	Test Beacon		
	FC_21-00-00-24-FF-32-FA-27	Transceiver Informat	ion				Refresh	MyTacks +	More Tasks
	▶ 📷 QLE8362:RFE1250H08700	Vendor	FINISAR CORP.					my raoko *	More Tasks
	QLE8242:RFE1314H59588	Туре	400-M6-SN-S					🔹 📝 Work in Progre	ss 🗆
		Identifier	SFP						
		Ext. Identifier	GBIC/SFP define	d by serial ID only					
		Part Number	FTLF8528P2BC	/-QL					
		Speed							
		Connector	LC				**	• 🕅 Alarms	
		Serial Number	PK96UHR						
		Revision	A					All (0) New (0) Al	CKIOWIED
		QLogic SFP installed	l No						
			Temperature (°C)	Voltage (V)	T× Bias (mA)	Tx: Power (mW)	Rx Power (mW)		
		Value	34.78	3.30	7.14	0.4753	0.0005		
		Status	Normal	Normal	Normal	Normal	Fault		
		High Alarm	75.00	3.69	17.00	0.6310	1.2589		
		High Warning	70.00	3.59	14.00	0.5623	1.0000		
		Low Warning	-5.00	3.00	2.00	0.1585	0.0158		đ
		Low Alarm	-10.00	2.90	1.00	0.1259	0.0100		

Figure 10-13. Fibre Channel Port Transceiver Information

Viewing Fibre Channel Port Statistics

To display port statistics:

- 1. In the host system tree, expand a Fibre Channel adapter node to view the ports.
- 2. Select a port to display information about the port.
- 3. In the content pane, click the **Statistics** tab to open the Statistics page (Figure 10-14).

4. (Optional) Click **Refresh** to update the display with current information.

vmware vSphere Web Cl	ient 🔒 🖗			Ŭ I Administrator@RAJ01 → I Help →	I Q Search	
Hosts - I	172.27.9.112 Actions -			E.		Ŧ
172.27.9.112	Getting Started Summary Monitor Manag	e Related Objects			🔹 🛐 Recent Tasks	
Image: Constraint of the second se	Settings Networking Storage Alarm Definition	ons Tags Permissions OCon erformance Adapter Ma	anagement		All Running F	ailed
	 ↓ 172.27.9.112 ↓ QLE8442.AFE1340F11823 ↓ QLE2562:LFD1115N06966 ↓ QLE2562:LFD1115N06966 	Beacon Test Beacon is currently off. General Boot Parame	ters Transceiver Statistics Diagnostics VPD	TestBeacon		
	FC_21-00-00-24-FF-32-FA-27	Statistics		Refresh	My Tasks + Mor	re Tasks
	► kg 0LE8392.RFE1250H08700 ► kg 0LE8392.RFE1314H59588	Number of IOS Throughput in Megabytes Number of LIP Resets Link Failune Invalid CRCs Loss of Sync Loss of Sync Controller Errors Device Errors Invalid Transmission Word Sequence Protocol Errors	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		✓ Work In Progress ✓ Alarms All (0) New (0) Acknow	di I Vied

Figure 10-14. Fibre Channel Port Statistics

Running Fibre Channel Port Diagnostics

To perform port diagnostic tests or to retrieve the firmware debug dump, click the **Diagnostics** tab to open the Diagnostics page (Figure 10-15).

vmware vSphere Web Cli	ent 🔒 🖉		Ŭ i Administrator@RAJ01 + i Help	- I 🔍 Search -
Hosts 💌 🖡	172.27.9.114 Actions -		2	*
172.27.9.114	Getting Started Summary Monitor Manag	e Related Objects		🔹 🛃 Recent Tasks 🛛
Virtual Machines	Settings Networking Storage Alarm Definit	ons Tags Permissions QConvergeConsole erformance Adapter Management		All Running Failed
	 	Beacon Test General Boot Parameters Transceiver Statistics Loopback Test	Test Beacon lagnostics VPD Temperature QoS Loopback Test	
	 guessasses guessasses guessasses 	Read-Write Buffer Test	Read-Write Buffer Test	MyTasks • More Tasks
	FC Cached Adapter Network	Firmware Debug Dump Click on the button to retrieve the firmware debug dump (if it exi This operation takes a while to complete.	Retrieve Firmware Debug	• VYUIK III PIOgless
		Ping Tests	Start FC Ping Start CT Ping Start CT FC Trace Route	
		Target WWW	Result	di v C Alams

Figure 10-15. Fibre Channel Port Diagnostics

The port Diagnostics page provides the following test options:

- Loopback Test
- Read-Write Buffer Test
- Retrieve Firmware Debug
- Fibre Channel Ping Tests

Loopback Test

To perform a port loopback test:

- 1. Install a loopback plug in the selected port.
- 2. In the host system tree, expand a Fibre Channel adapter node to view the ports.
- 3. Select a port.
- 4. In the content pane, click the **Diagnostics** tab to open the Diagnostics page.
- 5. Click Loopback Test.
- 6. In the Loopback Test dialog box, enter values for the following test parameters, and then click **OK**:
 - Data Pattern
 - Number of tests
 - Test Increment
 - □ Data Size (Bytes)
 - On Error
 - Test continuously
- 7. Observe the test results.

Read-Write Buffer Test

To perform a read-write buffer test:

- 1. In the host system tree, expand a Fibre Channel adapter node to view the ports.
- 2. Select a port.
- 3. In the content pane, click the **Diagnostics** tab to open the Diagnostics page.
- 4. Click Read-Write Buffer Test.
- 5. In the Read-Write Buffer Test dialog box, enter values for the following test parameters, and then click **OK**:
 - Data Pattern
 - Number of tests
 - Test Increment

- Data Size (Bytes)
- On Error
- Test continuously
- 6. Observe the test results.

Retrieve Firmware Debug

To retrieve the firmware debug dump:

- 1. In the host system tree, expand a Fibre Channel adapter node to view the ports.
- 2. Select a port.
- 3. In the content pane, click the **Diagnostics** tab to open the Diagnostics page.
- 4. Click Retrieve Firmware Debug to retrieve the debug.bin file.

Fibre Channel Ping Tests

To perform a ping test:

- 1. In the host system tree, expand a Fibre Channel adapter node to view the ports, and then select a port.
- 2. In the content pane, click the **Diagnostics** tab to open the Diagnostics page.
- 3. In the **Ping Tests** table, select a target. To choose multiple targets, hold down the CTRL key while you click additional targets.
- 4. Click either **Start FC Ping**, **Start CT Ping**, or **Start CT FC Trace Route** to start the appropriate test. To successfully run a CT Ping or a CT FC Trace Route ping test, the fabric must contain a Brocade switch.
- 5. In the Ping Test dialog box, specify the quantity of tests, and then click **OK**.

6. Observe the test results. The result for each test appears in the table (Figure 10-16).

Hosts 👂 🔊 🖡	Actions -			E	-	
172.27.9.112	Getting Started Summary Monitor Manag	e Related Objects			• 👩 Recent Task	ks
Top Level Objects O Virtual Machines	Settings Networking Storage Alarm Definitions Tags Permissions OConvergeConsole					, Failed
Datastores Networks		erformance Adapter Management				
Distributed Switches	172.27.9.112 DLE8242:RFE1314H59588 DOLE9262:RFE1314H59588	Beacon Test General Boot Parameters Transceiver Statist	ICS Diagnostics VPD	Test Beacon		
	 QLE2562:LFD1115N06966 	Loopback Test		Loopback Test		
Image: Sec. 21-00-00-24-FF-32-FA-26 Image: Sec. Sec. 32-FA-26 Image: Sec. 32-FA-26		Read-Write Buffer Test		Read-Write Buffer Test	My Tasks +	More Tas
	ELUN_0	Ping Tests	Start FC Ping Start CT Ping	Start CT FC Trace Route	* 📝 Work In Pro	gress
	FC_21-00-00-24-FF-32-FA-27	Target WWN	Result			
		B2-44-00-11-0D-05-00-00	Success(0 milliseconds)			
					* 🔯 Alarms	
					All (0) New (0)	Acknowled

Figure 10-16. Fibre Channel Ping Test Results

Viewing Fibre Channel Port VPD

To view port vital product data (VPD):

- 1. In the host system tree, expand a Fibre Channel adapter node to view the ports.
- 2. Select a port.
- 3. In the content pane, click the **VPD** tab.

The Port Vital Product Data (VPD) page (Figure 10-17) identifies the product, part number, and serial number.



Figure 10-17. Fibre Channel Port Vital Product Data

Viewing Fibre Channel Port Temperature Information

To view port temperature information:

- 1. In the host system tree, expand a Fibre Channel adapter node to view the ports.
- 2. Select a port.
- 3. In the content pane, click the **Temperature** tab.
- 4. On the Temperature page (Figure 10-18):
 - Click **Start** to set the monitoring rate (seconds), and then click **OK**.
 - Click **Stop** to stop reporting temperature data.

vmware vSphere Web Cl	ient 🔒 🖉	Ŭ Administrator@RAJ01 + Help +	l (Q. Search 🔹
Hosts 💌 🖡	172.27.9.112 Actions *	E.	¥
172.27.9.112	Getting Started Summary Monitor Manag	e Related Objects	🔹 🕄 Recent Tasks 🛛
Virtual Machines Datastores Notworks 1	Settings Networking Storage Alarm Definit	In Tags Permissions OConvergeConsole	All Running Failed
Networks Image: Constraint of the second s	COLOGIC The Ultimate in P ■ 172.27.8.112 • • Im QLE842.AFE1340F11823 • Im QLE842.AFE1340F11823 • Im QLE262.LFD1115N06966 ■ FC_21:00.00.24.FF:32FA26 ■ FC_21:00.00.24.FF:32FA27 • Im QLE8632.RFE1250H08700 ■ FC_21:00.00.06.1E:14.0E:A0 ■ FC_21:00.00.06:1E:14.0E:A1 • Im QLE8342.RFE1314H69588	Adapter Management Beacon Test Test Beacon General Boot Parameters Transcelver Statistics Diagnostics VPD Temperature Stat Temperature Stat Current temperature Stat Monitoring rate (seconds) 15 100 - 20 - 20 - 0 -	My Tasks • More Tasks • Work in Progress

Figure 10-18. Fibre Channel Port Temperature Information

Viewing Fibre Channel QoS Information

To view quality of service (QoS) information:

- 1. In the host system tree, expand a Fibre Channel adapter node to view the ports.
- 2. Select a port.
- 3. In the content pane, click the **QoS** tab to open the QoS page.

The QoS data is retrieved and listed in the table (Figure 10-19).

vmware [,] vSphere Web Cli	ient 🔒 🖉		Ŭ Administrator@WIN-BCK6RL7N7NP → Help →	I Q Search
(Hosts) 🕥 I	3 172.27.9.114 Actions +		<i>E</i> *	*
a 172.27.9.114	Getting Started Summary Monitor M.	anage Related Objects		🔹 🗊 Recent Tasks 🗆 🗖
 Top Level Objects Virtual Machines Virtual Machines Vapps Datastores 	Settings Networking Storage Alarm Do	effinitions Tags Permissions OConvergeConsole an Performance Adapter Management] t	All Running Failed
Networks		Beacon Test General Boot Parameters Transcelver QoS	Test Beacon Statistics Diagnostics VPD Temperature OoS Edit Refresh	
	FC_21-00-00-0E-1E-14-0E-	Value	vPort WAN	My Tasks • More Tasks
	QLE8242:RFE1317H72726	Medium	28-2E-00-0C-29-00-00-02	4
		Low	28-3A-00-0C-29-00-00-07	🔹 📝 Work in Progress 🛛 🗆
		High	28-3A-00-0C-29-00-00-08	
		Medium	28-3A-00-0C-29-00-00-09	
		High	28-3A-00-0C-29-00-00-0A	
				-

Figure 10-19. Fibre Channel Port QoS Service Information

- 4. (Optional) To update the QoS values, click **Refresh**.
- 5. (Optional) To edit the QoS priority values, click **Edit** to open the QoS dialog box. Figure 10-20 shows an example.

QoS				
+				
Value		vF	ort WWN	Delete
Low 	Medium	High '	28-2E-00-0C-29-00-00-02	
Low	Medium '	High '	28-3A-00-0C-29-00-00-07	
Low 	Medium '	High	28-3A-00-0C-29-00-00-08	
Low 	Medium	High '	28-3A-00-0C-29-00-00-09	
Low	Medium '	High	28-3A-00-0C-29-00-00-0A	
				OK Cancel

Figure 10-20. QoS—Edit Priority

- 6. In the QoS dialog box, perform the appropriate action:
 - □ To edit entries, move the slider for the selected vPort to Low, Medium, or High.
 - **D** To remove an entry, select the **Delete** check box for the entry.
- 7. To save your changes and close the dialog box, click **OK**.
- 8. (Optional) To add an entry to the table:
 - a. In the QoS dialog box, click the plus (+) icon.
 - b. Specify the vPort world wide port name (WWPN) in the new table entry (see Figure 10-21).
 - c. To save the entry, click **OK**.

QoS						
+						
Value			vPort WWN	Delete		
Low	Medium '	High				
Low '	Medium	High	28-2E-00-0C-29-00-00-02			
Low	Medium '	High	28-3A-00-0C-29-00-00-07			
Low 	Medium '	High	28-3A-00-0C-29-00-00-08			
Low 	Medium	High	28-3A-00-0C-29-00-00-09			
Low 	Medium '	High	28-3A-00-0C-29-00-00-0A			
	OK					

Figure 10-21. QoS Service—Add an Entry

Managing Converged Network Adapter Ports

In the host system tree, expand a Converted Network Adapter to view the ports. Select a port to view information about the port in the content pane, as shown in Figure 10-22.

vmware [®] vSphere Web Cli	ent 🔒 🖉		Ŭ∣ Administrator@RAJ01 +		I 🔍 Search	-
Hosts	172.27.3.136 Actions -			=*		X
🚡 172.27.3.136	Getting Started Summary Monitor Manage Related Objects				🔹 🛐 Recent Tasks	
Virtual Machines Datastores	Settings Networking Storage Alarm Definitions Tags Permissions @ConvergeConsole		QConvergeConsole		All Running	Failed
Networks Distributed Switches		rformance Adapt	er Management			
	▼ 📓 172.27.3.136	General		*		
	▼ QLE8362:AAP4827A48273	Port Number	1			
	Port 1	Management Function	n vmnic11			
	FOIL 2 FOIL 2 FOIL 2 FOIL 2	Senal Number AAP 4827A48273 Device Number 0 https://doi.org/10.1011/001100000000000000000000000000	AAP4827A48273			
	NC375i:KD03MP4131				My Tasks +	More Tasks
	DUE8242:RFE1218G08591	Number of eSwitch	1		👻 📝 Work in Progres	ss 🗆
		Beacon Test	Test Be	acon		
		Function Bandwidth Weight Assignment				
			Fune_0			đ
					🝷 🔯 Alarms	
					All (0) New (0) Ac	knowled
					1	
						.d
		N				
				*		

Figure 10-22. Converged Network Adapter Ports

Depending on the port you selected, the **Test Beacon** button may be available.

To activate or deactivate the port beacon:

- 1. Click **Test Beacon**.
- 2. In the Beacon Test dialog box, click **Beacon On** (or **Beacon Off**).
- 3. To save your changes, click **OK**.
Managing NIC Functions

In the host system tree, expand a NIC port node to view the functions, and then select a function. In the content pane, click the **General** tab to view information about the function, as shown in Figure 10-23.

vmware vSphere Web Client 🔒 🖉		Ŭ∣ Administrator@RAJ01 + Help	- I 🔍 Search -
Hosts • I R 172.27.3.136 Actions •			T T
🔒 172.27.3.136 Getting Started Summary Monitor Mana	ge Related Objects		🔹 🗊 Recent Tasks 🛛 🗆
B Virtual Machines I Datastores I Settings Networking Storage Alarm Defin	itions Tags Permissions	QConvergeConsole	All Running Failed
Retworks Distributed Switches	Performance Adapte	er Management	
	General NPAR F	arameters Statistics Diagnostics DCBX DCBXTLV VPD	
▼ ■ QLE8362:AAP4827A48273	General		
► Port 1	Function Type	NIC	
Function_1	Link Status	Link Up	Margaria Margaria
✓ reat Function_3	PCI Function Number	r 1	My Tasks • Hore Tasks
▼	MAC Address	00:0E:1E:08:4E:58	🔹 📝 Work in Progress 🛛 🗆
S LUN_0	Link Sneed	10 Gbns	
### Function_5	Linkopoed	10 0000	
NIC Function_7			
▶ ma NC3751KD03MP4131			
▶ agg GLE8242:RFE1218G08591			🝷 🔯 Alarms 🛛
			All (0) New (0) Acknowled
	11.5		

Figure 10-23. NIC Function

After selecting a function, you have the following options:

- Configuring NIC Function NPAR
- Configuring NIC Function Parameters
- Viewing NIC Function Statistics
- Running NIC Function Diagnostics
- Viewing NIC Function DCBX Information
- Viewing NIC Function DCBX TLV Information
- Viewing NIC Function VPD

Configuring NIC Function NPAR

To configure NPAR:

- 1. In the host system tree, expand a NIC port node to view the functions.
- 2. Select a function.

3. In the content pane, click the **NPAR** tab to open the NPAR page (Figure 10-24).



Figure 10-24. NPAR Configuration

The NPAR page includes the options described in the following sections:

- Configuring NIC Function NPAR Bandwidth
- Configuring NIC Function NPAR Function Type
- Displaying NIC Function eSwitch Statistics
- Configuring NIC Function eSwitch Parameters

Configuring NIC Function NPAR Bandwidth

To configure the NPAR bandwidth:

- 1. In the host system tree, expand a NIC port node to view the functions.
- 2. Select a function.
- 3. In the content pane, NPAR page, click **Bandwidth**.



4. To open the Function Bandwidth Assignment dialog box (Figure 10-25), click **Edit**.

Figure 10-25. NPAR Bandwidth Parameters

- 5. Click **Bandwidth Weight** and move the slider to set the bandwidth weight value.
- 6. Click **Maximum Bandwidth** and move the slider to set the maximum bandwidth value.
- 7. If you want the bandwidth values to persist between reboots, select the **Preserve the bandwidth change so that it remains effective after reboot** check box.

8. To save your changes, click **OK**.

NOTE

Bandwidth changes are dynamically assigned when already in the NPAR mode. If NPAR dynamic bandwidth assignment fails to set, you are prompted to reboot.

Configuring NIC Function NPAR Function Type

To configure the NPAR function type:

- 1. In the host system tree, expand a NIC port node to view the functions.
- 2. Select a function.
- 3. In the content pane, NPAR page, click **Type**.
- 4. To open the NPAR Function Type dialog box (Figure 10-26), click Edit.

vmware [,] vSphere Web Cli	ent 🔒 🖉		Ŭ I Administrator@RAJ01 → I Help →	I Q Search
Hosts 💌 🖡	172.27.3.136 Actions *		<i>E</i> *	Ŧ
172.27.3.136	Getting Started Summary Monitor Manage	Related Objects		🔹 🛐 Recent Tasks 🛛
Virtual Machines Intra Datastores	Settings Networking Storage Alarm Definition	Tags Permissions QConvergeConsole		All Running Failed
Networks Distributed Switches	COLOGIC The Ultimate in Perf	Adapter Management		
	 ▼ ■ 0227.3130 ▼ ■ 0LE8362:AAP4827A48273 ▶ ■ Port 1 ▼ ■ Port 2 	Venetial NPAR rataliteters Statistics Diagnostics VPD Function Bandwidth Type eSwitch Statistics Configuration Function Type eSwitch Statistics Configuration	Edit	
	NIC Function_1	Ethermet NIC Configured Disabled Not Configured		My Tasks + More Tasks
				Alarms Alarms Alarms All (0) New (0) Acknowled

Figure 10-26. NIC Function NPAR Function Type

5. Choose **Ethernet NIC** or **Disabled**, and then click **OK**. Functions 0 and 1 on a port must be NIC and cannot be disabled.

Displaying NIC Function eSwitch Statistics

To display eSwitch statistics:

- 1. In the host system tree, expand a NIC port node to view the functions.
- 2. Select a function.
- 3. In the content pane on the NPAR page, click the eSwitch **Statistics** button.

4. To update the statistics current values on the eSwitch Statistics page (Figure 10-27), click **Refresh**.



Figure 10-27. eSwitch Statistics

Configuring NIC Function eSwitch Parameters

To configure eSwitch parameters:

- 1. In the host system tree, expand a NIC port node to view the functions.
- 2. Select a function.

3. To view the eSwitch Configuration page (Figure 10-28) in the content pane, click the **eSwitch Configuration** button.

vmware vSphere Web Cli	ent 🕇 🖉	Ŭ Administrator@RAJ01 → Help	- I Q Search -
Hosts - I	172.27.3.136 Actions *	E.	
🚡 172.27.3.136	Getting Started Summary Monitor Manage Related Objects		🔹 🛐 Recent Tasks 🛛
Image: Transmission of the second	Getting Stated Summary Monitor Manage Reliated Objects Settings Networking Storage Alarm Definitions Tags Permissions @ConvergeConsole Image: ConvergeConsole Adapter Manage Adapter Management Image: ConvergeConsole Management Image: ConvergeConsole Image: ConvergeConsole Management Image: ConvergeConsole Image: ConvergeConsole Image: ConvergeConsole Image: ConvergeConsole Image: Converge: Converge: Converge: Converge: ConvergeConverge: Converge: Co	Satistics DCBX DCBXTLV VPD Statistics O Configuration Edit. Reload eSwitch Configuration. 0 Enabled Enabled Enabled Enabled Enabled Disabled Disabled Disabled Disabled Disabled Disabled Enabled	Recent Tasks All Running Failed My Tasks More Tasks Work in Progress More Tasks More Task More Task More Tasks More Task More Tasks
	Modify IPv4 TCP Segment Official(*)	Enabled	
	Modify IPv8 TCP Segment Official(*)	Enabled	
	(*): Changes to these eSwitch parameters are applied NOTES 1. eSwitch configuration is only applicable for function 2. Selecting "Modify IPv4/IPv6 TCP Segment Offload" w	to all functions under this port. operated in VMDIrectPath or Flxed Passthrough (FPT) mode. ill automatically select "Modify Layer4 Checksum Offload"	

Figure 10-28. eSwitch Configuration

- 4. To open the eSwitch Configuration dialog box, click **Edit**.
- 5. Specify values for the following eSwitch parameters, and then click **OK**.
 - U VLAN ID
 - Ability to Change Operating MAC Address
 - Replication of Transmitted Multicast Packets to NPAR
 - Replication of Received Multicast Packets to NPAR
 - VLAN Filtering
 - Capability to Enable Promiscuous Mode
 - □ VLAN ID Stripping
 - □ VLAN Tagged Packets from Host
 - Discard Tagged Packets
 - MAC Learning
 - MAC Anti-spoof Checking
 - □ Modify Layer 4 Checksum Offload¹
 - Modify IPv4 TCP Segment Offload¹
 - □ Modify IPv6 TCP Segment Offload¹
- 6. To refresh the display, click **Reload eSwitch Configuration**.

¹ Changes to this eSwitch parameter are applied to all functions under the port.

Configuring NIC Function Parameters

To configure NIC function parameters:

- 1. In the host system tree, expand a NIC port node to view the functions.
- 2. Select a function.
- 3. To open the Parameters page (Figure 10-29), click the **Parameters** tab.



Figure 10-29. NIC Function Parameters

- 4. On the Parameters page, click **Edit**.
- 5. In the Ethernet Parameters dialog box, specify values for the following parameters, and then click **OK**.
 - Enable Rx Checksumming
 - Max Jumbo Buffers
 - □ Rx Buffers
 - Tx Buffers
 - Rx Coalesce (µs)
 - Rx Max Coalesced Frames
 - □ Tx Coalesce (µs)
 - □ Tx Max Coalesced Frames
 - D PXE
 - □ Wake on LAN (Magic Ethernet Frame)

Viewing NIC Function Statistics

To display function statistics:

- 1. In the host system tree, expand a NIC port node to view the functions.
- 2. Select a function.
- 3. To open the Statistics page (Figure 10-30), click the **Statistics** tab.



Figure 10-30. NIC Function Statistics

- 4. As appropriate, click the following options to manipulate the statistics:
 - □ Set Baseline—Records the current statistics values as a reference point.
 - □ **Refresh**—Updates the statistics to their current values. If there is a baseline, the **Refresh** option shows the change since the baseline.
 - **Clear Baseline**—Clears an existing baseline.

Running NIC Function Diagnostics

To run NIC function diagnostic tests or to retrieve the firmware debug dump, click the **Diagnostics** tab to open the Diagnostics page (Figure 10-31).



Figure 10-31. NIC Function Diagnostics

The Diagnostics page provides the following options:

- Running NIC Function Diagnostic Tests
- Retrieving NIC Function Firmware Debug Dump

Running NIC Function Diagnostic Tests

To run a diagnostic test for a NIC function:

- 1. In the host system tree, expand a NIC port node to view the functions.
- 2. Select a function.
- 3. To open the Diagnostic Tests page, click the **Diagnostics** tab.
- 4. Click **Start Tests**.

5. In the Diagnostic Tests dialog box (Figure 10-32), specify the quantity of test iterations and the types of test to perform, and then click **OK**.

Diagnostic Tests						
Warning: While running dia	agnostic tests, your networ	k traffic will be interrupted.				
Ensure that external loopb	ack cable is plugged for ex	ternal loopback test.				
Number of Test Iteration(s)						
	Test	Status				
	Hardware Test	N/A				
	Register Test	N/A				
	Interrupt Test	N/A				
	Link Test	N/A				
	LED Test	N/A				
	Flash Test	N/A				
	Internal Loopback Test	N/A				
	External Loopback Test	N/A				
		OK Cancel				

Figure 10-32. NIC Function Diagnostic Tests

6. Observe the test results.

Retrieving NIC Function Firmware Debug Dump

To retrieve the firmware debug dump:

- 1. In the host system tree, expand a NIC port node to view the functions.
- 2. Select a function.
- 3. To open the Diagnostic Tests page, click the **Diagnostics** tab.
- 4. Click Retrieve Firmware Debug to get the debug.bin file.

Viewing NIC Function DCBX Information

Data center bridging exchange (DCBX) information is available for NIC functions 0 and 1.

To view DCBX information:

- 1. In the host system tree, expand a NIC port node to view the functions.
- 2. Select a function.

3. To open the Default Local Setting DCBX Values page (Figure 10-33), click the **DCBX** tab.

vmware vSphere Web Cl	ient 🔒 🖉		Ŭ∣ Administrator@RAJ01 + Help	- I 🔍 Search -
Hosts • I	172.27.3.136 Actions *		21	
Image: Started Started Storage Alarm Definition Image: Storage Alarm Definition	Related Objects Tags Permissions Ocomer Ormance General NPAR Parameter DefaultLocal Setting DCBX Va DCBX Enable True Willing True Port Pause Type Standard FC6 Epriority C68 3 ISC8I Priority C68 3 Above DCBX values are the def	agement s Statistics Diagnostics DCBX DCBXTLV VPD hues ault cardiocal settings, to see the running/current settings view the TLV panel.	Image: Work in Progress	
	wu:Function_7 > kmg:0LE9242A941234A54032 > kmg:NC3751kC038PP4131 > kmg:0LE9242.RFE1218008591	Default Local Setting ETS Value Priority Group 0 Priority Group 0 Priority Group 1 Priority Group 2 Priority Group 3 Priority Group 5 Priority Group 5 Priority Group 5 Priority Group 5 Priority Group 7 SAN Unused Bandwith to LAN LAN Unused Bandwith to EAN	es between the set of	Alams

Figure 10-33. NIC Function DCBX Information

Viewing NIC Function DCBX TLV Information

DCBX type-length-value (TLV) information is available for NIC functions 0 and 1.

To view DCBX TLV information:

- 1. In the host system tree, expand a NIC port node to view the functions.
- 2. Select a function.

3. To open the DCBX TLV page (Figure 10-34), click the **DCBX TLV** tab.



Figure 10-34. NIC Function DCBX TLV Information

To determine the transmission bandwidth percentage:

- Under DCBX TLV, expand the Traffic Class folder and the Traffic class
 <x> folder, where <x> is the traffic class.
- 2. Locate the **802.1p Priority value** and take note of the priority value.
- 3. Expand the **Transmission Priority** folder and locate **Traffic class with priority <y>** entry, where <y> is the priority value found in Step 2. Take note of the entry's value as the transmission priority.
- 4. Expand the **Transmission Bandwidth** folder and locate the **Bandwidth** in % for traffic class <z> (at index <z>), where <z> is the transmission priority value found in Step 3.

The value for that entry is the bandwidth percentage for the **Traffic class <x>**. Figure 10-35 shows an example.



Figure 10-35. NIC Function DCBX TLV—Transmission Bandwidth Percentage

Viewing NIC Function VPD

To view NIC function vital product data (VPD) information:

- 1. In the host system tree, expand a NIC port node to view the functions.
- 2. Select a function.

3. To open the Port Vital Product Data (VPD) page (Figure 10-36), click the **VPD** tab.

vmware [,] vSphere Web Cli	ent 🕈 🖉			🖰 i Administrator@RAJ01 • i Help •	I 🔍 Search	•
Hosts 💌 🖡	172.27.3.136 Actions -			<i>E</i> *		¥
172.27.3.136	Getting Started Summary Monitor Manage Related Objects				🔹 🛐 Recent Tasks	
Virtual Machines Datastores	Settings Networking Storage Alarm Definitions Tags Permissions QComergeConsole				All Running Faile	łd
Networks Distributed Switches	COLOGIC The Ultimate in Per	formance Adapter	Management			
	QLE8362:AAP4827A48273 Dep Port 1	Port Vital Product Data (VPD)			
	▼ Im Port 2	Description	QLogic PCI-Express Dual Port 10Gb CNA			
	NIC Function_1	Part Number	QLE8362		MuTaeke - More T	Faele
	₩ free Function_3	Serial Number	AAP4827A48273		my radius - more r	di
	▼ P Target_50-06-0B-00-00-33	Engineering Date Code	AA4938273-48 PP		* 📝 Work in Progress	
		Flash Image Version	020157		Alarms All (0) New (0) Acknowled	الله

Figure 10-36. NIC Function VPD

Managing FCoE Functions

In the host system tree, expand an FCoE port node to view the functions, and then select a function. In the content pane, click the **General** tab to view information about the function, as shown in Figure 10-37.

vmware vSphere Web Client 🔒 🖉		Ŭ Administrator@RAJ01 • Help •	l 🔍 Search 👻
Hosts 💌 I 🔒 172.27.3.136 Actions *		<i>E</i> .	T T
172.27.3.136 Getting Started Summary Monitor Man	age Related Objects		🔹 🛐 Recent Tasks 🛛
B Virtual Machines If Settings Networking Storage Alarm Defin Settings Networking Storage Alarm Defin	nitions Tags Permissions	QConvergeConsole	All Running Failed
Retworks Distributed Switches	Performance Adapte	er Management	
▼ 172.27.3.136	General NPAR B	oot Parameters Transceiver Statistics Diagnostics FCoE Temperature VPD	
▼ 200 QLE8362:AAP4827A48273	General		
► Port 1	Function Type	FCoE	
Nic Function 1	Link Status	Online	
	PCI Function Number	3	My Tasks • More Tasks
Target_50-08-0B-00-00-3	MAC Address	00:0E:1E:08:4E:59	💌 📝 Work in Progress 🛛 🗆
SINT 0	Device Name	vmhba11	
**** Function_6	Port Name	21-00-00-0E-1E-08-4E-51	
we Function_7 ▶ 2000 QLE8242:AS41234A54632			
► 100 NC3751KD03MP4131 ► 100 OLE8242:RFE1218008591			* 🔯 Alarms 🗆
P AN HEARING THE PERSONNEL			All (0) New (0) Acknowled

Figure 10-37. FCoE Functions

Additional tabs provide access to the available options for the selected function as described in the following sections:

- Configuring FCoE Function NPAR Function Type
- Configuring FCoE Function Boot Parameters
- Configuring FCoE Function Parameters
- Viewing FCoE Function Transceiver Information
- Viewing FCoE Function Statistics
- Running FCoE Function Diagnostics
- Configuring the FCoE Function
- Viewing FCoE Function Temperature Information
- Viewing FCoE Function VPD
- Viewing FCoE Function Target Information
- Viewing FCoE Function LUN Information

Configuring FCoE Function NPAR Function Type

To configure the NPAR function type:

- 1. In the host system tree, expand an FCoE port node to view the functions.
- 2. Select a function.
- 3. To view the Function Type page (Figure 10-38), click the **NPAR** tab.

vmware vSphere Web Cli	ent 🕇 🖉 💛 Administrator@RAJ01 🗸		I Q Search
Hosts 💌 🖡	172.27.3.136 Actions -	E.	I
<u>ត</u> 172.27.3.136	Getting Started Summary Monitor Manage Related Objects		🔹 🛐 Recent Tasks 🛛 🗆
Virtual Machines Datastores	Settings Networking Storage Alarm Definitions Tags Permissions QConvergeConsole		All Running Failed
Networks Distributed Switches	Adapter Management		
	♥ [] 172.27.3.136 General NPAR Boot Parameters Transceiver Statistics Diagnostics FOoE Temperature VPD ♥ [] MORT 1 FOoE Configured		
	we Function_1 Ethernet NIC Not Configured www.frunction_3 Disabled Not Configured		My Tasks 👻 More Tasks
			👻 📝 Work In Progress 🛛
	▶ man Nc3751kH003MP4131 ▶ man OLE6242:RFE1218008591		Alarms Alarms All (0) New (0) Acknowled

Figure 10-38. FCoE NPAR Function Type

4. Click **Edit** to open the NPAR Function Type dialog box.

5. Select either FCoE, Ethernet NIC or Disabled, and then click OK.

Configuring FCoE Function Boot Parameters

To configure the boot parameters:

- 1. In the host system tree, expand an FCoE port node to view the functions.
- 2. Select a function.
- 3. To open the Boot page (Figure 10-39), click the **Boot** tab.



Figure 10-39. FCoE Function Boot Parameters

- 4. On the Boot page, click **Edit**.
- 5. On the FC/FCoE Boot dialog box, specify values for the following parameters, and then click **OK**.
 - **Enable boot from the port**
 - Boot from the selected device(s)
 - Primary Boot: Target WWN, LUN ID
 - Alternate Boot 1: Target WWN, LUN ID
 - Alternate Boot 2: Target WWN, LUN ID
 - Alternate Boot 3: Target WWN, LUN ID

Configuring FCoE Function Parameters

To configure FCoE function parameters:

- 1. In the host system tree, expand an FCoE port node to view the functions.
- 2. Select a function.

3. To open the Parameters page (Figure 10-40), click the **Parameters** tab.



Figure 10-40. FCoE Function Parameters

- 4. On the Parameters page, click **Edit**.
- 5. In the Fibre Channel Port Parameters dialog box, enter values for the following parameters, and then click **OK**.
 - Data Rate
 - **Connection Options**
 - Frame Size
 - Login Retry Count
 - Enable LR (LIP reset)

Viewing FCoE Function Transceiver Information

To view transceiver information

- 1. In the host system tree, expand an FCoE port node to view the functions.
- 2. Select a function.

3. To open the Transceiver Information page (Figure 10-41), click the **Transceiver** tab.

vmware vSphere Web Cli	ent 🔒 🖉					U I Admi	nistrator@RAJ01 + 丨 Help +	Q Search	
Hosts - I	172.27.3.136 Actions *						<i>E</i> .		Ŧ
👗 172.27.3.136	Getting Started Summary Monitor Manage	Related Objects						🔹 🗊 Recent Tasks	
Virtual Machines Datastores Avtworks Distributed Switches	Settings Networking Storage Alarm Definitions	Tags Permissions	QConvergeConso er Manageme	nt				All Running	Failed
	▼ 🖺 172.27.3.136	General NPAR E	loot Parameters	Transceiver S	itatistics Diagnostics	FCoE Temperatur	e VPD		
	▼ QLE8362:AAP4827A48273	Transceiver Informati	on				Refresh		
	Port 1	Vendor	FINISAR CORP.						
	✓ Port 2	Туре	100 Base-SR						
	English Function 3	Identifier	SFP					My Tasks 👻	More Tasks
	Target 50-06-08-00-00-33	Ext. Identifier	GBIC/SFP define	d by serial ID only				👻 📝 Work in Prog	ess 🗆
	ELUN D	Part Number	FTLX8571D3BCL	-QL					
	www.Function 5	Speed	10 Gbit/Sec						
	NIC Function_7	Connector	LC						
	QLE8242:AS41234A54632	Serial Number	ANS0Y2Y						
	▶ 🔤 NC375i:KD03MP4131	Revision	A						<i>d</i>
	▶ ■ QLE8242:RFE1218008591	QLogic SFP installed	Yes					* 🔯 Alarms	
			Temperature (°C)	Voltage (V)	T× Bias (mA)	Tx Power (mW)	Rx Power (mW)	All (0) New (0)	Acknowled
		Value	37.32	3.40	7.94	0.6575	0.6328		
		Status	Normal	Nomai	Normal	Normal	Normal		
		High Alarm	78.00	3.69	10.00	0.8318	0.7042		
		High Warning	2.00	2.00	5.00	0.2162	0.7943		
		Low Alarm	-13.00	2.90	4.00	0.2512	0.0100		
			1471578	12102	100551	100000	100000		
								L	,af

Figure 10-41. FCoE Function Transceiver Information

4. To update the display with current information, click **Refresh**.

Viewing FCoE Function Statistics

To view function statistics:

- 1. In the host system tree, expand an FCoE port node to view the functions.
- 2. Select a function.

vmware [®] vSphere Web Cli	ent 🔒 🖉					🖸 l Administra	ator@RAJ01 👻 Help 🗣	Q Search	•
Hosts	T 172.27.3.136 Actions -						=*		Ŧ
🚡 172.27.3.136	Getting Started Summary Monitor Manage	Related Objects						🝷 🛐 Recent Tasks	
Virtual Machines Datastores Metworks Distributed Switches	Settings Networking Storage Alarm Definition	formance Adapter M	nvergeConsole anagement					All Running	Failed
	▼ 172.27.3.136	General NPAR Boot	Parameters Transce	ver Statistics	Diagnostics FCol	E Temperature	VPD		
	CLE8362:AAP4827A48273	Statistics					Refresh		
	▶ m Port 1 ▼ M Port 2	Number of IOs Throughout in Megabytes	1760						
	NIC Function_1	Number of Interrupts	0					My Tasks 👻	More Tasks
	 ▼ Interest ▼ Target_50-06-08-00-00-33 ■ LUN_0 	Number of LIP Resets Link Failure	0					🔹 📝 Work in Progre	ss 🗆
	HIM Function_5	Invalid CRCs	0						
	NIC Function_7	Loss of Signal	0						
	QLE8242:AS41234A54632	Controller Errors	0						d
	Dis NC375:KDU3MP4131	Device Errors	0					* 🔯 Alarms	
	CLE0242.NFE1210000331	Invalid Transmission Word	s 0					All (0) New (0) A	knowled
		Sequence Protocol Errors	0					7.	
		Target Statistics					Refresh		
		Target port Name Link Failu	ire Sync Loss	Signal Loss	Invalid CRC	Seq Proto Error	Invalid Trans Word		
		50-06-0B-00-00-0 2	2	1	0	0	8		
									d

3. To open the Statistics page (Figure 10-42), click the **Statistics** tab.

Figure 10-42. FCoE Function Statistics

4. To update the display with current information, click **Refresh**.

Running FCoE Function Diagnostics

To run FCoE function diagnostic tests or to retrieve the firmware debug dump, click the **Diagnostics** tab to open the Diagnostic Test page (Figure 10-43).

vmware vSphere Web Cli	ent 🕈 🖉		Ŭ Administrator@WIN-BCK5RL7N7NP → H	elp + I 🔍 Search 🔹
📢 Hosts 🕴 🔁 🖡	172.27.9.112 Actions *			π. I
172.27.9.112	Getting Started Summary Monitor Mana	ge Related Objects		💌 🖄 Recent Tasks 🛛
 Top Level Objects Virtual Machines Wapps Datastores 	Settings Networking Storage Alarm Defin	itions Tags Permissions ConvergeConsole Performance Adapter Management		All Running Failed
Networks		General Boot Parameters Transceiver Statistics D Loopback Test Read-Write Buffer Test	iagnostics FCoE Temperature VPD LoopbackTest Read-Write Buffer Test	
	we Function_0 2000 Function_2 aver Function_4 2000 Function_6	Firmware Debug Dump Click on the button to retrieve the firmware debug dump (if it exi This operation takes a while to complete.	Retrieve Firmware Debug	My Tasks + More Tasks di • Vork In Progress
	▶ ■ Port 2 ▶ ■ QLE2562:LFD1115N06966 ♣ FC Cached Adapter Network	Ping Tests Target WMM	Start FC Ping Start CT Ping Start CT FC Trace Route Result	d
				All (0) New (0) Acknowled

Figure 10-43. FCoE Function Diagnostics

After selecting a function, the following test options are available:

- Loopback Test
- Read-Write Buffer Test
- Retrieve Firmware Debug
- Ping Tests

Loopback Test

To perform a loopback test:

- 1. Install a loopback plug in the selected port.
- 2. In the host system tree, expand an FCoE port node to view the functions.
- 3. Select a function.
- 4. In the content pane, click the **Diagnostics** tab to open the Diagnostic Tests page.
- 5. Click Loopback Test.

- 6. In the Loopback Test dialog box, specify values for the following test parameters, and then click **OK**:
 - Data Pattern
 - Number of tests
 - Test Increment
 - Data Size (Bytes)
 - On Error
 - Test continuously
- 7. Observe the test results.

Read-Write Buffer Test

To perform a read-write buffer test:

- 1. Install a loopback plug in the selected port.
- 2. In the host system tree, expand an FCoE port node to view the functions.
- 3. Select a function.
- 4. In the content pane, click the **Diagnostics** tab to open the Diagnostic Tests page.
- 5. Click Read-Write Buffer Test.
- 6. In the Read-Write Buffer Test dialog box, enter values for the following test parameters, and then click **OK**:
 - Data Pattern
 - Number of tests
 - Test Increment
 - □ Data Size (Bytes)
 - On Error
 - Test continuously
- 7. Observe the test results.

Retrieve Firmware Debug

To retrieve the FCoE function firmware debug dump:

- 1. Install a loopback plug in the selected port.
- 2. In the host system tree, expand an FCoE port node to view the functions.
- 3. Select a function.
- 4. In the content pane, click the **Diagnostics** tab to open the Diagnostic Tests page.
- 5. To retrieve the debug.bin file, click Retrieve Firmware Debug.

Ping Tests

To perform an FCoE function ping test:

- 1. In the host system tree, expand an FCoE adapter node to view the ports, and then select a port.
- 2. In the content pane, click the **Diagnostics** tab to open the Diagnostic Tests page.
- 3. In the **Ping Tests** table, select a target. To choose multiple targets, hold down the CTRL key while you click additional targets.
- 4. To start a test, click either **Start FC Ping**, **Start CT Ping**, or **Start CT FC Trace Route**.

NOTE

To successfully run a CT Ping or a CT FC Trace Route ping test, the fabric must contain a Brocade switch.

- 5. In the test dialog box, specify the quantity of tests to run, and then click **OK**.
- 6. Observe the test results. The result for each test appears in the **Ping Tests** table (Figure 10-44).

Hosts 👌 🕤 🖡	172.27.9.112 Actions -			近 *
172.27.9.112	Getting Started Summary Monitor Manag	e Related Objects		* 🛐 Recent Tasks
Top Level Objects Virtual Machines Vapps Datastores	Settings Networking Storage Alarm Definitin	ions Tags Permissions QConvergeConsole		All Running Failed
Networks I Distributed Switches	CLEOSTE TRADUCTION CLEOSTE TRADUCTION CLEOSTE TI 4H59598 TO CLEOSTE TE 14H59598 TO CLEOSTE TE 150H08700 Star CLEOSTE TE 115N08986	Beacon Test General Boot Parameters Transceiver Statistic Loophack Test	Test Beac	on t
	FC_21-00-00-24-FF-32-FA-26	Read-Write Buffer Test	Read-Write Buffer Test	My Tasks • More Ta
	€ LUN_0 ₩FC_21-00-00-24-FF-32-FA-27	Ping Tests Target WWN	Start FC Ping Start CT Ping Start CT FC Trace Route Result	* 📝 Work In Progress
		B2-44-00-11-0D-05-00-00	Success(0 milliseconds)	
	1			* 🙋 Alarms
	4			All (0) New (0) Acknowled

Figure 10-44. FCoE Ping Test Results

Configuring the FCoE Function

To display and configure FCoE-specific parameters of the FCoE function, click the **FCoE** tab to view the FCoE Attributes page (Figure 10-45).



Figure 10-45. FCoE Function Attribute Information

The FCoE Attributes page provides the following options:

- Configuring the FCoE Function Primary FCF VLAN ID
- Viewing FCoE Function DCB Information
- Viewing FCoE Function DCE Statistics
- Viewing FCoE Function DCBX TLV Information

Configuring the FCoE Function Primary FCF VLAN ID

To configure the primary FCF VLAN ID:

- 1. In the host system tree, expand an FCoE port node to view the functions.
- 2. Select a function.

3. To open the FCoE Configuration page (Figure 10-46), in the content pane click the **Configuration** tab.



Figure 10-46. FCoE Function Primary FCF VLAN ID

- 4. To open the FCoE Configuration dialog box, click Edit.
- 5. In the FCoE Configuration dialog box, specify the **Primary FCF¹ VLAN ID** and the **Primary FCF VLAN ID selection** option, and then click **OK**.

Viewing FCoE Function DCB Information

To view data center bridging (DCB) information:

- 1. In the host system tree, expand an FCoE port node to view the functions.
- 2. Select a function.

¹ Fibre Channel Forwarder

3. In the content pane, click the **Data Center Bridging** tab to open the DCBX Values page (Figure 10-47).

vmware vSphere Web Cli	ent 🔒 🖉		Ŭ Administrator@RAJ01 → Help	I (Q Search -
Hosts 💌 🔳	172.27.3.136 Actions *		E.	1
172.27.3.136	Getting Started Summary Monitor Manage	Related Objects		🔹 🛐 Recent Tasks 🛛
Image: Section of the section of t	Settings Networking Storage Alarm Definition	s Tags Permissions QConvergen	ement	All Running Failed
		General NPAR Boot Parameters Transceiver Statistics Diagnostics FCoE Temperature VPD Information Configuration Data Center Bridging DCE Statistics DCBX TLV		
		Work of the original of		MyTasks • More Tasks
	 • • • • • • • • • • • • • • • • • • •	Above DCBX values are the defau	uit card/local settings, to see the running/current settings view the TLV panel.	
		Priority TX Mode Priority Group 0 Priority Group 1 Priority Group 2 Priority Group 3 Priority Group 4 Priority Group 5 Priority Group 5 Priority Group 7 SAN Unused Bandwith to LAN	Bandwidth 50 50 0 0 0 0 0 0 5 5 5 5 5 5 5 5 5 5	Alarms

Figure 10-47. FCoE Function Data Center Bridging Information

Viewing FCoE Function DCE Statistics

To view DCE statistics:

- 1. In the host system tree, expand an FCoE port node to view the functions.
- 2. Select a function.

3. In the content pane, click the **DCE Statistics** tab to open the DCE Statistics page (Figure 10-48). To update the page with current values, click **Refresh**.



Figure 10-48. FCoE Function DCE Statistics

Viewing FCoE Function DCBX TLV Information

To view DCBX TLV information:

- 1. In the host system tree, expand an FCoE port node to view the functions.
- 2. Select a function.

3. To open the DCBX TLV page (Figure 10-49), click DCBX TLV.



Figure 10-49. FCoE Function DCBX TLV Information

Viewing FCoE Function Temperature Information

To view function temperature information:

- 1. In the host system tree, expand an FCoE port node to view the functions.
- 2. Select a function.

3. To open the Temperature page (Figure 10-50), click the **Temperature** tab.

VmtWare' vSphere Web Client 🔺 🖉 🛛 🕹 V Administrator@RAJ01 + Help + 🔍 Search					
Hosts 👻 I	172.27.3.136 Actions *	۲ ا			
172.27.3.136	Getting Started Summary Monitor Manage Related Objects	🔹 🗊 Recent Tasks 🛛			
Datastores	Settings Networking Storage Alarm Definitions Tags Permissions OconvergeConsole	All Running Failed			
Distributed Switches	Adapter Management Image: Construction of the statistic stati	My Tasks - More Tasks • Vork In Progress • Alarms All (0) New (0) Acknowled			

Figure 10-50. FCoE Function Temperature

4. Click **Start** to set the monitoring rate (seconds), and then click **OK**. Click **Stop** to stop reporting temperature data.

Viewing FCoE Function VPD

To view function vital product data (VPD):

- 1. In the host system tree, expand an FCoE port node to view the functions.
- 2. Select a function.

3. To open the Port Vital Product Data (VPD) page (Figure 10-51), click the **VPD** tab.



Figure 10-51. FCoE Function Vital Product Data

Viewing FCoE Function Target Information

Target information is available under the FCoE function, if there is a target connected to the port.

To view function target information:

- 1. In the host system tree, expand an FCoE port node to view the functions.
- 2. Expand the FCoE function node, and then select the target (Figure 10-52).



Figure 10-52. FCoE Function Target Information

Viewing FCoE Function LUN Information

To view LUN information for an FCoE function target: In the host tree pane, expand a target node, and then select a LUN (Figure 10-53).



Figure 10-53. FCoE Function LUN Information

Managing iSCSI Functions

In the host system tree, expand an iSCSI port node to view the functions, and then select a function. In the content pane, click the **General** tab to view information about the selected function (Figure 10-54).





The content pane for the selected iSCSI function provides tabs to access the following options:

- Configuring iSCSI Function NPAR Function Type
- Configuring iSCSI Function Boot Parameters
- Configuring iSCSI Function Parameters
- Viewing iSCSI Function Statistics
- Running iSCSI Function Diagnostics
- Viewing iSCSI Function VPD

Configuring iSCSI Function NPAR Function Type

To configure the NPAR function type:

- 1. In the host system tree, expand an iSCSI port node to view the functions.
- 2. Select a function.
- 3. In the content pane, click the **NPAR** tab to open the Function Type page (Figure 10-55).



Figure 10-55. iSCSI Function NPAR Function Type

- 4. To open the NPAR Function Type dialog box, click Edit.
- 5. Select a function type of either **iSCSI**, **Ethernet NIC**, or **Disabled**, and then click **OK**.

Configuring iSCSI Function Boot Parameters

To configure the boot parameters:

- 1. In the host system tree, expand an iSCSI port node to view the functions.
- 2. Select a function.
- 3. In the content pane, click the **Boot** tab to open the Boot page (Figure 10-56).



Figure 10-56. iSCSI Function Boot Parameters

- 4. In the content pane, click Edit.
- 5. In the iSCSI Boot dialog box, specify values for the following parameters, and then click **OK**.
 - Boot Mode Setting
 - DHCP Vendor ID
 - DHCP Client ID
 - Primary Boot: Target name, LUN ID
 - Secondary Boot: Target name, LUN ID

Configuring iSCSI Function Parameters

To configure iSCSI function parameters, click the **Parameters** tab to open the Parameters page (Figure 10-57).

vmware vSphere Web Cli	ient 🔒 🖉			Ŭ Administrator@RAJ01 → Help	- I Q Search -
Hosts - I	172.27.3.136 Actions -			£*	I I
🚡 172.27.3.136	Getting Started Summary Monitor Manage	Related Objects			🔹 🕄 Recent Tasks 🗆
 Ø Virtual Machines Datastores 	Settings Networking Storage Alarm Definition	s Tags Permissions QConverge	Console		All Running Failed
Networks Distributed Switches		formance Adapter Manag	gement		
	▼ 🖺 172.27.3.136	▼ 🛙 172.27.3.136 General NPAR Boot Parameters Statistics Diagnostics VPD			
	→ QLE8362:AFE1133C09645	General Network IP Configu	ration		
	wic Function_0	iSCSI Settings		Edit	
	₩ Feet Function_2	Force Negotiate Main iSCSI Key	s Disabled		My Tasks + More Tasks
	▼	Header Digest	Disabled		
	BLUN_0	Data Digest	Disabled		* 📝 Work in Progress 🛛 🗆
	Function_4	Immediate Data	Enabled		
	NIC Function_6	Initial R2T	Disabled		
	▶ Mer Port 2	Snack	Disabled		
	DE NC375i:KD03MP4131	Logout On Discovery Session	Enabled		
	▶ QLE2560:LFD1046H77483	Strict ISCSI Login	Disabled		• 🕅 Alarms
	QLE8142:RFC1004U01062	Error Recovery Level	0		
	QLE8242:RFE1208D76327	Firmware Settings		Edit	All (U) New (U) Acknowled
	▶ pgg GLE8242:RFE1218G08591	First Burst Length	256		
		Max Burst Length	512		
		Execution Throttle	0		
		Connection Keepalive Timeout	10		
		Max Outstanding R2T	1		
		Enable ZIO	Disabled		
		ZIO Count	0		L
		Serialize Task Mgmt Cmds	Enabled		
		Auto Connect	Fnabled		

Figure 10-57. iSCSI Function Parameters

The Parameters page includes the **General**, **Network**, and **IP Configuration** buttons that provide access to the following groups of parameters:

- iSCSI Function iSCSI and Firmware Settings
- iSCSI Function Network Settings
- iSCSI Function IPv4 Parameters
- iSCSI Function IPv6 Parameters

iSCSI Function iSCSI and Firmware Settings

To configure iSCSI and firmware settings:

- 1. In the host system tree, expand an iSCSI port node to view the functions.
- 2. Select a function.
- 3. In the content pane on the Parameters page, click the **General** button to open the General page with sections for **iSCSI Settings** and **Firmware Settings**.
- 4. Click Edit.

5. In the iSCSI Parameters dialog box (Figure 10-58), click the **General** tab in the left pane.

iSCSI Parameters				
General Network IPv4 IPv6	Error Recovery Level	iSCSI Settings ☐ Force Negotiate Main iSCSI Keys ☐ Header Digest ☐ Data Digest ☑ Immediate Data ☐ Initial R2T ☐ Snack ☑ Logout On Discovery Session ☐ Strict iSCSI Login 0	First Burst Length Max Burst Length Execution Throttle Connection Keepalive Timeout Max Outstanding R2T ZIO Count	Firmware Settings
				OK Cancel

Figure 10-58. iSCSI Function iSCSI and Firmware Settings

6. Specify values under **iSCSI Settings** and **Firmware Settings**, and then click **OK**.

Alternatively, click **Network**, **IPv4**, or **IPv6** to configure other iSCSI function parameters.

iSCSI Function Network Settings

To configure network settings:

- 1. In the host system tree, expand an iSCSI port node to view the functions.
- 2. Select a function.
- 3. In the content pane on the Parameters page, click the **Network** button to open the Network page.
- 4. Click **Edit**.

5. In the iSCSI Parameters dialog box (Figure 10-59), click the **Network** tab in the left pane.

iSCSI Paramet	ers		
General			-
Network		Jumbo Packets Enable (IPv4 and IPv6)	
IPv4		✓ Delayed ACK	
IPv6		Nagle Algorithm	
		ARP Redirect	
		✓ TCP Timestamp	
		Enable Type Of Service	
		Inable TCP Window Scale	
	Default (Task Mgmt) Timeout	10 *	
	Rx TCP Window Scale	2 *	
	Type Of Service		Н
	Max Window Size		•
	4		•
		OK Cancel	כ

Figure 10-59. iSCSI Function Network Parameters

6. Specify values for the network settings, and then click **OK**.

Alternatively, click **General**, **IPv4**, or **IPv6** to configure other iSCSI function parameters.

iSCSI Function IPv4 Parameters

To configure IP parameters:

- 1. In the host system tree, expand an iSCSI port node to view the functions.
- 2. Select a function.
- 3. In the content pane on the Parameters page, click the **IP Configuration** button to open the IPv4 and IPv6 Parameters page.
- 4. Click Edit.
5. In the iSCSI Parameters dialog box (Figure 10-60), click the **IPv4** tab to specify values for the IPv4 parameters, and then click **OK**.

General Network IPv4 ○ Obta IPv6 ④ Use IPv4. Subr Gate		ers	
IPv4 Obta IPv6 Obta IPv4 Subr Gate	Pv4 Address	Enable IPv4 Address	*
IPv4. Subr Gate	tain IP address automatically (DHCP) te the following IP address	 Obtain IP address Use the following 	
	4 Address 192.168.10.204 bnet Mask 255.255.240.0 teway 0.0.0.0	IPv4 Address Subnet Mask Gateway □ Enable VI AN	
VLAN VLAN	AN User Priority 0 + AN ID 0 +	VLAN User Pric VLAN ID	

Figure 10-60. iSCSI Function IPv4 Parameters

Alternatively, click **General**, **Network**, or **IPv6** to configure other iSCSI parameters.

iSCSI Function IPv6 Parameters

To configure IP parameters:

- 1. In the host system tree, expand an iSCSI port node to view the functions.
- 2. Select a function.
- 3. In the content pane on the Parameters page, click the **IP Configuration** button to open the IPv4 and IPv6 Parameters page.
- 4. Click Edit.
- 5. In the iSCSI Parameters dialog box, click the **IPv6** tab to specify values for the IPv6 parameters, and then click **OK**.

Alternatively, click **General**, **Network**, or **IPv4** to configure the other iSCSI parameters.

Viewing iSCSI Function Statistics

To view function statistics

- 1. In the host system tree, expand an iSCSI port node to view the functions.
- 2. Select a function.

3. In the content pane, click the **Statistics** tab to open the Statistics page (Figure 10-61).



Figure 10-61. iSCSI Function Statistics

- 4. As needed, click the following options to manipulate the statistics:
 - □ **Refresh**—Updates the statistics to their current values. If there is a baseline, the **Refresh** option shows the change since the baseline.
 - **Clear Baseline**—Clears an existing baseline.
 - □ Set Baseline—Records the current statistics values as a reference point.

Running iSCSI Function Diagnostics

To run function diagnostic tests or to retrieve the firmware debug dump, click the **Diagnostics** tab to open the Diagnostic page (Figure 10-62).



Figure 10-62. iSCSI Function Diagnostics

After selecting a function, you have the following diagnostic options:

- iSCSI Function Ping Test
- Retrieve iSCSI Function Firmware Debug Dump

iSCSI Function Ping Test

To perform an iSCSI function ping test:

- 1. In the host system tree, expand an iSCSI port node to view the functions.
- 2. Select a function.
- 3. In the content pane, click the **Diagnostics** tab to open the Diagnostics page.
- 4. Next to **Ping Test**, click **Start Test**.

5. In the Ping dialog box (Figure 10-63), specify the IPv4 address to ping, the quantity of packets, and the packet size, and then click **OK**.

Ping	
IPv4 address to ping Number of packet(s)(1-10000) Packet size	0.0.0.0 1 + 32 + v
	OK Cancel

Figure 10-63. iSCSI Function Ping Test

6. Observe the test results.

Retrieve iSCSI Function Firmware Debug Dump

To retrieve the firmware debug dump:

- 1. In the host system tree, expand an iSCSI port node to view the functions.
- 2. Select a function.
- 3. In the content pane, click the **Diagnostics** tab to open the Diagnostics page.
- 4. Next to Firmware Debug Dump, click Retrieve Firmware Debug to retrieve the debug.bin file.

Viewing iSCSI Function VPD

To view iSCSI function vital product data (VPD) information:

- 1. In the host system tree, expand an iSCSI port node to view the functions.
- 2. Select a function.

3. In the content pane, click the **VPD** tab to open the Port Vital Product Data (VPD) page (Figure 10-64).



Figure 10-64. iSCSI Function Vital Product Data

11 Managing Marvell 578xx and 41000 Series Adapters

This chapter provides detailed instructions on how to use the vCenter Server Web Client Plug-in to manage Marvell 578xx/41000 Series Adapters and connected storage devices. The following topics are covered in this chapter:

- "Managing Hosts" on page 201
- "Managing 578xx/41000 Series Adapters" on page 208
- "Viewing Port Information for 578xx/41000 Series Adapters" on page 220
- Configuring Port Boot Options" on page 224
- "Running Adapter Port Diagnostics" on page 244
- "Viewing Function Information for 578xx/41000 Series Adapters" on page 247
- "Viewing iSCSI Information for 578xx/41000 Series Adapters" on page 251
- "Viewing Information for an iSCSI Target Connected to 578xx/41000 Series Adapters" on page 253
- "Viewing Information for an iSCSI LUN Connected to 578xx/41000 Series Adapters" on page 254

Managing Hosts

If you select an ESX or ESXi host, the content pane provides a few options. Select the option for the type of information you want to view, which are described in the following sections:

- Storage Map
- Network Map

Storage Map

Next to **Map**, click **Storage** to view the host's storage map, with the host on one end, and the VMs on the other end. Figure 11-1 shows an example of the vSphere Web Client Plug-in storage map with 578xx/41000 Series Adapters and Figure 11-2 shows an example of the HTML5 based vSphere Client Plug-in storage map with 578xx/41000 Series Adapters.



Figure 11-1. Storage Map with 578xx/41000 Series Adapters (vSphere Web Client Plug-in)



Figure 11-2. Storage Map with 578xx/41000 Series Adapters (HTML5 based vSphere Client Plug-in)

Figure 11-3 and Figure 11-4 show examples of the vSphere Web Client Plug-in and HTML5 based vSphere Client Plug-in storage maps. On these storage maps, the lines indicate LUNs that are attached to the VMs as raw device mapping (RDM) disks.



Figure 11-3. Storage Map Showing LUNs Attached to VMs (vSphere Web Client Plug-in)



Figure 11-4. Storage Map Showing LUNs Attached to VMs (HTML5 based vSphere Client Plug-in)

Network Map

Next to **Map**, click **Network** to view the selected host's network map, as shown in Figure 11-5 and Figure 11-6.



Figure 11-5. Network Map with 578xx/41000 Series Adapters (vSphere Web Client Plug-in)



Figure 11-6. Network Map with 578xx/41000 Series Adapters (HTML5 based vSphere Client Plug-in)

Managing 578xx/41000 Series Adapters

To manage 578xx/41000 Series Adapters, select the adapter in the system tree. The Adapter Management window appears in the content pane as shown in Figure 11-7 for 578xx/41000 Series Adapters.



Figure 11-7. Adapter Management on 578xx/41000 Series Adapters (vSphere Web Client Plug-in)

In the HTML5 based vSphere Client Plug-in, the Adapter Management window appears in the content pane as shown in Figure 11-8 for 578xx/41000 Series Adapters.

vm vSphere Client Me	nu v Q Search				ڻ Administr	ator@VSPHERE.LOCAL ~	Help 🗸 😂
Vm vSphere Client Me V 2271.1384 V ☐ Datacenter	Autorolistion Services System Parket Services System System System Services System Services Servi	Permissions VMs Resource / LOGIC 22.27.1.29 Adapter 1: 578105 Perror 0 BCM578 BCM578 Bus BCM578 Bus BCM578 Bus BCM578 Sub BCM578 Sub BCM578 Sub BCM578 Sub BCM578 Sub BCM578 Sub BCM578 Sub BCM578 Sub BCM578 Sub BCM578 Sub BCM578 Sub BCM578 Sub BCM578 Sub	Adapter Managem Adapter Managem Configuration Tempe di Configuration Tempe di Configuration Tempe di di cription Configuration Tempe di di cription Configuration Tempe di di di di di di di di di di di di di	orks ant vPD BCM57810100 BCM57810100 CL09IC COrpor CL6(4X) CL09IC COrpor CL04I CL09IC COrpor CL04I CL0	Administre	UPDATE ADAPTER	Help>
System Swap	System Swap Hardware Processors Memory	Port 0 PXE	Boot Version rmware Version	v7.6.53 L2T 7.0.0			
	Memory PCI Devices Power Management QConvergeConsole	Sicre Sicre EFI EFI EFI Port FV	64 Version / Version	v7.6.58 MFW2 7.6.55			
Recent Tasks Alarms							*

Figure 11-8. Adapter Management on 578xx/41000 (HTML5 based vSphere Client Plug-in)

The Adapter Management window shows information for the selected adapter. The window contains the following sections:

- Adapter Information
- Adapter Configuration
- Adapter Commands: Updating the Flash Firmware
- Starting and Stopping the Adapter Temperature Monitor
- QinQ Configuration

Adapter Information

The adapter information area provides the following information:

- Description
- Bus Width
- Manufacturer
- Device ID
- Vendor ID
- Subsystem ID
- Subsystem Vendor ID
- ASCI Version
- Serial Number
- Firmware Versions

Adapter Configuration

Use the Adapter Configuration section to configure the following:

- Changing between Single Function and Multi-Function
- Configuring SR-IOV
- Configuring protocols (578xx/41000 Series Adapters)
- For Multi-Function, configuring flow control and bandwidth
- Configuring Remote Direct Memory Access (RDMA) (41000 Series Adapters only)

Configuring the Adapter Using the vSphere Web Client Plug-in

The Adapter Configuration section also has the following options:

Edit opens the Adapter Configuration dialog box where you can change the adapter to Single Function or Multi-Function, as shown in Figure 11-9.

NOTE

- You can configure the protocols (iSCSI and FCoE for 578xx/41000 Series Adapters) and SR-IOV (and in the case of the Multi-Function mode, flow control and bandwidth).
- In Multi-Function mode, each port may have up to two storage protocols assigned to it with each function having either iSCSI or FCoE as shown in Figure 11-9 (578xx Series Adapters).
- There can only be up to two iSCSI functions or one iSCSI function with one FCoE function on each port (578xx Series Adapters).
- Minimum bandwidth for all functions on the same port must all be 0 or total 100%.
- The 41000 Series Adapters can have up to 16 functions configured. The following shows how some of the functions work:
 - □ Functions 0 and 1 cannot have storage protocols configured.
 - □ Functions 2 and 3 can be configured for FCoE protocol.
 - □ Functions 4 and 5 can be configured for iSCSI protocol.
- If RDMA is available on a 41000 Series Adapter, you can enable RoCE or iWARP.
- **Save** saves the configuration.
- Cancel closes the Adapter Configuration dialog box without submitting the changes.

Adapter Confi	guration	
 Single Funct 	tion 🔘 Multi-Function	
Port ⊻ E ⊻ E	t 0 Protocol Port 1 Protocol Enable FCoE ☐ Enable FCoE Enable ISCSI ☑ Enable ISCSI	SRIOV SRIOV Port 0 SRIOV VFs per PF Port 1 SRIOV VFs per PF 0 *
		OK Cancel
Adapter Configuration		
Single Function Port Port 1 Flow Control TX ON	Function 0 Image: Enable L2NIC Enable FCoE Enable FCoE Enable Relative Bandwidth Weight Image: Enable L2NIC Enable FCoE Image: Enable Relative Bandwidth Image: Enable Relative Bandwidth Image: Enable L2NIC Enable FCOE Image: Enable Relative Bandwidth Image: Enable Relative Bandwidth Image: Enable L2NIC Enable FCOE Image: Enable Relative Bandwidth Image: Enable Relative Bandwidth Image: Enable L2NIC Enable FCOE Enable Relative Bandwidth Image: Enable Relative Bandwidth Image: Enable L2NIC Enable FCOE Enable Relative Bandwidth Image: Enable Relative Bandwidth Image: Enable L2NIC Enable FCOE Enable Relative Bandwidth Image: Enable Relative Bandwidth Image: Enable Relative Bandwidth Image: Enable L2NIC Enable FCOE Enable Relative Bandwidth Image: Enable Relative Bandwidth Image: Enable Relative Bandwidth Image: Enable L2NIC Enable FCOE Enable Relative Bandwidth Image: E	SRIOV VFs per PF 75 100 75 100 75 100 75 100 1 1
		OK Cancel

Figure 11-9. Single/Multi-Function Configuration for 578xx Series Adapters

Configuring the Adapter Using the HTML5 based vSphere Client Plug-in

Figure 11-10 and Figure 11-11 show the Adapter Configuration pages in the HTML5 based vSphere Client Plug-in.

vm vSphere Client Me	anu v Q, Search	Administrator@VSPHERE.LOCAL ~	Help ~	۲
□ □ □ ○ 172.271.1184 Datacenter <	IT2.27.1.29 Actions ~ Summary Monitor Configure Permissions VMs Resource Pools Datastores Networking Actions ~ Adapter Management			
	VMkemel adapters > 172.27.129 Physical adapters > Configuration TCP/IP configuration > Configuration Vitual Machines > Configuration VM Startup/Shutdown > Configuration	BANDWIDTH	EDIT	^ _
	Agent VM Settings > CAppeter 3: 5/9800SS B Default VM Compatible Swap File Location Disabled System Space Set Set Set Set Set Set Set Set Set Se			
	Time Configuration Time Configuration Authentication Service: Certificate Prove Management Prove Management Figure Control Fi			
	Advanced System Set. System Resource Res. Firewall Services Services			
	Security Profile Maximum Bandwidth 100 System Swap SRIOV VFs per PF 0 + Hardware Processors VEnction 2			
	Memory PCI Devices Power Management CConvergeConsole CConvergeConsole CConvergeConsole CConvergeConsole CCOnvergeConsole CCOnvergeConsole CCOnvergeConsole CCOnvergeConsole CCOnvergeConsole CCOnvergeConsole CCOnvergeConsole CCOnvergeConsole CCOnvergeConsole CCOnvergeConsole CCOnvergeConsole CCONVERSITE CCONVERS			
ecent Tasks Alarms				

Figure 11-10. Adapter Configuration for a 578xx Series Adapter

m vsphere Client	Menu ~ 🔍 Search				O Administrator	ØVSPHERE.LOCAL ~	Help ~	•
	🚡 172.27.1.29 🕴 🗚	TIONS -						
172.27.1.184	Summary Monitor Co	onfigure Permissions VMs	Resource Pools Datastores Networks					
172.27.1.29	✓ Networking Virtual switches	Ά οιοgic	Adapter Management					
	VMkernel adapters Physical adapters TCP/IP configuration	 772.27.1.29 Adapter 1: 57810SS B0 	General Configuration Temperature VPE)				
	✓ Virtual Machines VM Startup/Shutdown	 Adapter 2: QL41401S A Adapter 3: 57980SS B 	Adapter Configuration			BANDWIDTH	EDIT	J
	Agent VM Settings Default VM Compatibi.		Default Mode	Disabled				
	Swap File Location		Multi-Function	Enabled				
	▼ System		SRIOV	Enabled				
	Time Configuration		v Port 0					
	Authentication Service:			2.2				
	Certificate		Flow Control	Auto				
	Power Management		Function 0					
	System Resource Res		Ethernet	Enabled				
	Firewall		RoCE	Disabled				
	Services Security Profile		IWARP	Enabled				
	System Swap		Polativa Pandwidth Waight	0				
			Relative Baltawidth Weight					
	Processors		Maximum Bandwidth	100				
	PCI Devices		SRIOV VFs per PF	16				
	Power Management		Function 2					
	QConvergeConsole		Ethernet	Enabled				

Figure 11-11. Adapter Configuration for a 41000 Series Adapter

The QConvergeConsole HTML5 based vSphere Client Plug-in provides a wizard to help you configure adapters.

To configure adapters with the wizard:

- 1. To access the wizard, on the Adapter Configuration page, click **Edit**.
- 2. Complete each of the first three configuration steps in the wizard as shown in Figure 11-12, Figure 11-13, and Figure 11-14, and then click **Next** on each.

Adapter Configuration	Select Multi-function Mode	×
1 Select Multi-Function Mode	Single Function S Multi-Function	
2 Enable Protocols		
3 Adjust Bandwidth		
4 Set SRIOV		
	CANCEL BACK NEX	т

Figure 11-12. Adapter Configuration Wizard: Select Multi-Function Mode

Adapter Configuration	Enable Protocols X	^
Select Multi-Function Mode Enable Protocols	Port 0 Port 1 Flow Control	
3 Adjust Bandwidth	RX ON, TX ON ~	
4 Set SRIOV		
	Enable L2NIC	
		Ť
	CANCEL BACK NEXT	

Figure 11-13. Adapter Configuration Wizard: Enable Protocols

Adapter Configuration	Port 0 Port 1	×^
1 Select Multi-Function Mode	Relative Bandwidth Weight	
2 Enable Protocols	Maximum Bandwidth	
3 Adjust Bandwidth		
4 Set SRIOV		
	Function 2 Relative Bandwidth Weight	
	20	
	Maximum Bandwidth	~
		CANCEL BACK NEXT

Figure 11-14. Adapter Configuration Wizard: Adjust Bandwidth

3. On the final wizard window shown in Figure 11-15, click **Finish**.

Adapter Configuration	Set SRIOV			×	^
Select Multi-Function Mode Enable Protocols Adjust Bandwidth	SRIOV SRIOV VFs per PF Port 0	Enable SRIOV Function 0			
4 Set SRIOV				~	
		Function 2			
				~	
		Function 4			
				~	~
			CANCEL	FINISH	

Figure 11-15. Adapter Configuration Wizard: Set SR-IOV

Adapter Commands: Updating the Flash Firmware

Use the **Adapter Commands** section to update the flash firmware on the adapter. Click **Update Adapter Flash Image** to open a dialog box and select the firmware file. After selecting the file that is appropriate for the adapter, the adapter is updated.

Starting and Stopping the Adapter Temperature Monitor

If available for the adapter, a **Temperature** tab may appear in the adapter panel. Click the tab to view the Temperature page, which shows a graph of the temperature over time in degrees Celsius. The graph is updated at the monitoring rate indicated in the panel.

- To start the temperature monitoring, click **Start**.
- To stop the temperature monitoring, click **Stop**.

The monitoring rate can be changed when the sampling of the temperature has been stopped. Figure 11-16 and Figure 11-17 show the Temperature page.

	Adapter Management
▼ 172.27.1.187	General Temperature
▷ ➡ Adapter1: 57800sS B0	Temperature Start Stop
 Adapter2: 57840S B0 Adapter3: QL41401S A1 Port 0 Port 0 Port 1 Port 1 HPE StoreFabric CN12C 	Current temperature 40 °C Monitoring rate (seconds) 15 100 - 90 - 80 - 70 - 60 - 90

Figure 11-16. Temperature Page (vSphere Web Client Plug-in)

vm vSphere Client Me	nu v Q Search		U Administrator@VSPHERE.LOCAL v Help v 🥹
Vm vSphere Client Me	Nummary Actions Summary Monitor Storage Devices Configure Host Cache Configura Vital Vitrual switches Vitrual switches System Host Profile The configuration Advanced System Set. System Resource Res Services Services Services	Resource Pools Datastores Networks Adapter Management General Configuration Temperature VPD Monitoring Rate 15 Temperature (2) Page Page Page Page Page Page Page Pag	Administrator/2VSPHERELDCAL Help Help FTANT STOP CLEAR
	Security Profile System Swap Processors Memory PCI Devices	60	
Recent Tasks Alarms			*

Figure 11-17. Temperature Page (HTML5 based vSphere Client Plug-in)

QinQ Configuration

For specific Marvell 578xx Series 1/10Gbps Ethernet Adapters that have the QinQ option enabled, you can use the QinQ tab at the adapter level to configure QinQ for VLAN IDs on a per physical function (PF) basis.

QinQ is an implementation of the *IEEE 802.1ad* (or Q-in-Q) specification. QinQ further segregates traffic by allowing the creation of VLANs within a VLAN by adding an additional 802.1Q tag (VLAN ID field) to the Ethernet frames.

To configure QinQ:

- 1. In the adapter tree, select the 578xx Series Adapter node.
- 2. In the content pane, click the **QinQ** tab to view the QinQ Configuration page. If the QinQ tab is not visible, QinQ is not enabled for your adapter model.



Figure 11-18 and Figure 11-19 show examples.

Figure 11-18. QinQ Configuration Page (vSphere Web Client Plug-in)

х	QLOGIC	Adapter Management	
✓ 17:	2.27.2.7		-
>	CACAPTER 1: QL45		
>	Adapter 2: 5784		,
~	😅 Adapter 3: 5781		
	∨ → Port 0	v Port 0	
	BCM57	Port 0 Filtering	
	∨ → _o Port 1	\sim Function 0	
	BCM57	VLAN ID 1	
~	📑 Adapter 4: 5798	VLAN ID Pool 2-50, 88, 90, 100-150	
	∨ → _o Port 0	VLAN Priority 3	
	The state of the s	v Port 1	
	∨ → _o Port 1	Port 1 Normal	
	🛅 HPE Et	∽ Function 1	
	∨ → _o Port 2	VLAN ID 0	
<u>ر ا</u>	HPE Et	VLAN ID Pool	•

Figure 11-19. QinQ Configuration Page (HTML5 based vSphere Client Plug-in)

3. In the QinQ page, click **Edit** to view the QinQ Configuration dialog box (Figure 11-20 and Figure 11-21).

QinQ Configuration							
Port Port 1	Port Port 1						
Setting VLAN ID value in the VLAN ID Pool may stop traffic.							
VLAN mode Filtering 🖵							
		Function 0					
	VLAN ID (1 - 4094)	1					
	VLAN ID Pool (e.g. 4-10, 24, 35, 78)	2-50, 88, 90, 100-150					
	VLAN Priority (0 - 7)	3 🔺					
		OK Cancel					

Figure 11-20. QinQ Dialog Box (vSphere Web Client Plug-in)

QinQ Settings		
Port 0 Port 1		
A Setting VLAN ID value	in the VLAN ID Pool may stop traffic.	
VLAN mode	Filtering V	
Function 0		
/LAN ID (0 - 4094)	1 💼	
	VLAN ID Pool (e.g. 4-10, 24, 35, 78)	
	2-50, 88, 90, 100-150	
		CANCEL

Figure 11-21. QinQ Dialog Box (HTML5 based vSphere Client Plug-in)

- 4. On the QinQ dialog box, in **VLAN mode** drop-down menu, select one of the following:
 - □ **Normal** mode configures the port to operate using the standard VLAN configuration.
 - Filtering mode configures the port to use QinQ VLAN packet filtering based on the VLAN IDs specified in the VLAN ID and VLAN ID Pool options.
 - QinQ mode configures the port to use QinQ VLAN packet filtering based on the specified VLAN ID.
- 5. If you selected **Filtering** or **QinQ** mode in Step 4, select from the following values for each port function:
 - □ VLAN ID must be within the range of 0–4094, where 0 indicates no VLAN ID. In QinQ mode, the VLAN ID cannot be 0.
 - ❑ VLAN ID Pool (available in Filtering mode only) must specify a set of ID numbers in the range of 1-4094. You can specify the ID numbers as either a comma-separated list, a range indicated by a dash (-), or a combination of a comma-separated list and a dash-specified range.
 - □ VLAN Priority must be within the range of 0–7.

NOTE

If you set the same value for VLAN ID and VLAN ID Pool, traffic may stop. This is a known issue.

In Filtering mode, enter valid values for the VLAN ID and/or the VLAN ID Pool. Both fields may have valid values, which cannot both be 0 and empty at the same time for the same PF.

The maximum quantity of VLAN IDs (specified in the VLAN ID options and the VLAN ID Pool options for each port function) for the entire adapter is 256.

- 6. To save the QinQ configuration, click **OK**.
- 7. If a message indicates that the QinQ configuration update is successful, reboot the system.

Viewing Port Information for 578xx/41000 Series Adapters

To view information about ports on 578xx/41000 Series Adapters, select the port in the system tree. The Adapter Management window shows the following port information:

- Port Number
- Link State
- Link Speed
- Duplex Setting
- Bus Number
- Device Number
- Media Type
- NIC Driver Version
- FCoE Driver Version
- iSCSI Driver Version

Figure 11-22 shows the **Port Information** on 578xx/41000 Series Adapters in the vSphere Web Client Plug-in.

vmware [,] vSphere Web Clie	ent n ≘					Öl Adn	ninistrator@VSPHERE.LOCAL + I Help +	I Q Search	
Navigator #	172.27.0.26 Actio	ins *					12×	👩 Alarms	Ŧ×
Navagator ← Home ● ● ← Home ● ● ← Datacenter ● 17227.0.128 → ● Datacenter ● 17227.0.112 → ■ 17227.0.114	■ 172.27.026 Actic Gettings Started Summit Settings Networking ● 172.27.0.26 > 100.0125002.07 > 100.0125002.07 > 100.0125002.07 <th>Monitor Manage Reli Storage Alarm Definitions Ta C E1315(H65345 E1315(H65345 E1317(H72726 E1317(H72726 E1317(H72726 E1317(H72726 E1317(H72726 E1317(H72726 E1317(H72726 E1317(H72726 E1317(H72726 E1317(H7276) E1317(</th> <th>eled Objects gs Permissions Adapte t triormation ant Number nk Steed (Mpps) uplex as Number elei Type tic Driver Version CSI Driver Version</th> <th>0ConvergeConsols er Management 0 Link Down Unknown Haif 36 0 Unknown 1/12.34 1.712.50.v55.6 2.712.50.v55.4</th> <th></th> <th></th> <th></th> <th>Alarms All (0) New (0) Work in Progress</th> <th>#× Acknowl #</th>	Monitor Manage Reli Storage Alarm Definitions Ta C E1315(H65345 E1315(H65345 E1317(H72726 E1317(H72726 E1317(H72726 E1317(H72726 E1317(H72726 E1317(H72726 E1317(H72726 E1317(H72726 E1317(H72726 E1317(H7276) E1317(eled Objects gs Permissions Adapte t triormation ant Number nk Steed (Mpps) uplex as Number elei Type tic Driver Version CSI Driver Version	0ConvergeConsols er Management 0 Link Down Unknown Haif 36 0 Unknown 1/12.34 1.712.50.v55.6 2.712.50.v55.4				Alarms All (0) New (0) Work in Progress	#× Acknowl #
😨 Recent Tasks									± ×
Task Name	Target	Status	Initiator	Queued For	Start Time	Completion Time	Server		
-									
-									_
My Tasks 🔹 Tasks Filter 🔹		1							More Tasks

Figure 11-22. Port Information on 578xx/41000 Series Adapters (vSphere Web Client Plug-in)

Figure 11-23 shows the **Port Information** on 578xx/41000 Series Adapters in the vSphere Web Client Plug-in.

vmware vSphere Web Cli	ient ≜ ≘					Öl Adn	ninistrator@VSPHERE.LOCAL + I Help ·	I Q Search	•
Navigator #	172.27.0.26 Actions	*					E.	👩 Alarms	∓×
Non-National State Image:	Gettings Started Summa Gettings Started Summa Settings Networking S COLOGIC COLOSIZERE: COLOSIZER: COLOSI	Monitor Monage Relate torage Alarm Definitions Tage 215465345 234567 0 111/H2728 0 120 Nebtheme II 10 01 Nebtheme II 10 01	d Objects Permissions OC Adapter N Information Number 0 State Link Speed (Mbps) Unk Rex Haif Number 42 Ce Number 0 Driver Version 1.71	Innagement				All (0) New (0)	# X Acknowt X
😨 Recent Tasks									# ×
Task Name	Target S	tatus	Initiator	Queued For	Start Time	Completion Time	Server		
My Tasks 🔹 Tasks Filter 🔹									More Tasks

Figure 11-23. Port Information on 578xx/41000 Series Adapters (vSphere Web Client Plug-in)

Figure 11-24 shows the Port Information on a 41000 Series Adapter in the HTML5 based vSphere Client Plug-in.

	1				V V	
	🔲 172.27.1.29 🛛 🗛 стіс	ons 🛩				
V 🗗 172.27.1.184	Summary Monitor Conf	figure Permissions VMs	Resource Pools Datastores Networks			
✓ ☐ Datacenter ☐ 172.27.1.29	▼ Storage	~				
> 172.28.60.148	Storage Adapters	AL QLOGIC	Adapter Management		<u>.</u>	
	Host Cache Configura	× 172.27.1.29				^
	 Networking Virtual switches 	> 📑 Adapter 1: 57810SS E	General Boot Configuration Diagnostics			
	VMkernel adapters	 Adapter 2: QL41401S 	General			
	Physical adapters	✓ → Port 0	Port Number	0		
	✓ Virtual Machines	HPE StoreF	Link State	Link Down		
	VM Startup/Shutdown Agent VM Settings	HPE StoreF	Link Speed (Mbps)	0		
	Default VM Compatibi	V SCSI - 14:0	Duplex	Full		
	Swap File Location		Bus Number	33		
	Host Profile	→ Port 1	Device Number	0		
	Time Configuration	HPE StoreF	Media Type	Linknown		
	Certificate	HPE Store				
	Power Management Advanced System Set.	iscsi - 14:0	DCBX			
	System Resource Res	aca Portal	DCB	Disabled		
	Firewall Services	HPE StoreF	Priority Tagging	Not Operational		
	Security Profile	> 📑 Adapter 3: 5798055	Priority Flow Control (PFC)	Not Operational		
	System Swap Hardware		Enhanced Transmission Selection (ETS)	Not Operational		
	Processors					~

Figure 11-24. Port Information on 41000 Series Adapters (HTML5 based vSphere Client Plug-in)

If data center bridging exchange (DCBX) information is available, it is shown as part of the port information.

DCBX information includes:

- **DCB State** (enabled or disabled)
- DCB Protocol
- Priority
- Priority Flow Control (PFC)
- Enhanced Transmission Selection (ETS)

DCBX Advanced information includes:

Local MIB:

- **ETS** (enabled or disabled)
- **PFC** (enabled or disabled)
- Priorities for Networking, FCoE, iSCS
- Priority Flow Control Enabled on Priorities
- Priority Group ID for Networking, FCoE, iSCSI
- **Priority Group ID Bandwidth (%)**

Remote MIB:

- **Remote Application Priority Willing** (enabled or disabled)
- Remote PFC Willing
- Remote ETS Willing
- Remote ETS Recommendation valid
- Remote FCoE Priority
- Remote iSCSI Priority
- Remote PFC Enabled on Priorities
- Remote Priority Group ID for Networking, FCoE, iSCSI
- Remote Priority Group ID Bandwidth (%)

Figure 11-25 shows the port information with DCBX information.

Navigator	I 172.27.9.185 Actions -						
Home 10	Cotting Started Summary Mapitar Manual	Related Objects					
	Ceaning clarice Commany women indiana	Je ricialoù objecta					
172.27.0.129 Datacenter 172.27.149	Settings Networking Storage Alarm Definit	lions Tags Permissions QCom	vergeConsole				
	~~						
172.27.1.49 172.27.2.156	AL OLOGIC	Adapter Management					
172.27.9.144	- 172.27.9.185	Information Boot	Configuration Diagnostics				
172.27.9.185	QLE8362:AAP1234A98765	Port Information					
		Outbluebou	0				
	Port 0	Port Number	u Link IIn				
	Port 1	Link Sneed (Mhns)	10000				
	Adapter2: 5781USS BU	Duplex	Full				
		Bus Number	10				
		Device Number	0				
		Media Type	Optical				
		NIC Driver Version	2.713.10.v55.4				
		FC Driver Version	1.713.20.v55.2				
		ISCSI Driver Version	2.713.10.v55.3				
		DCBX					
		DCB		Enabled			
		DCB Protocol		CEE	::		
		🔻 🗁 Priority Tagging		Operational	1		
		Networking F	RI	0			
		Coe PRI		3	-		
		DCBX Advanced					
		🔻 😂 Local MIB			-		
		D ETS		Enabled			
		D PFC		Enabled			
		Configuration	n Mis-match	No			
		Networking F	RI	0			

Figure 11-25. Port Information with DCBX Information

Configuring Port Boot Options

If the adapter has the ability to boot from external storage, the following boot configuration options for each boot method are available:

- MBA (see Configuring MBA Boot)
- iSCSI Boot (see Configuring iSCSI Boot)
- FCoE Boot (see Configuring FCoE Boot)

Configuring MBA Boot

To configure the MBA boot:

- 1. Select the appropriate port in the QConvergeConsole system tree.
- 2. Select the Manage tab.
- 3. On the Manage page, click the **QConvergeConsole** tab.
- 4. On the QConvergeConsole page, click the **Boot Configuration** tab.
- 5. On the Boot Configuration page, click **MBA** as shown in Figure 11-26 and Figure 11-27.



Figure 11-26. MBA Boot Configurations (vSphere Web Client Plug-in)

vm vSphere Client Menu v	Q Search	ы	Administrator@VSPHERE.LOCAL ~	Help ~	۲
Vm Vsphere Client Menu Im Im	Call Actions → 72.28.60.148 Actions → any Monitor Configure Permissions VMs Resource Pools Datastores Networks any Monitor Configure Permissions VMs Resource Pools Datastores Networks any Monitor Configure Permissions VMs Resource Pools Datastores Networks any Adapter Storage Adapters T22.28.60.148 Ceneral Boot Configuration Diagnostics MinA Pools Boot Pools Boot		Administrator #VSPHERELOCAL >	Help ~	
⇒ ▼ Har	Processors				
Recent Tasks Alarms					*

Figure 11-27. MBA Boot Configurations (HTML5 based vSphere Client Plug-in)

- 6. On the MBA Configurations page, click **Edit**.
- 7. Complete the following in the Update MBA Configuration panel:
 - a. Select the **Option ROM** check box to enable this feature, or clear the check box to disable it.
 - b. Select a value for the **Boot Protocol**.

Options for 578xx Series Adapters include:

- None
- PXE
- FCoE Boot (if available)
- iSCSI Boot (if available)

Options for 41000 Series Adapters include:

- None
- PXE
- iBFT

Note that selecting **PXE** will disable the iSCSI (offload) Boot. Selecting **iBFT** will disable the iSCSI (offload) Boot, and set the iSCSI Boot Mode to non-offload.

- c. Select a value for **Boot Strap Type**:
 - Auto
 - BBS
 - Int 18h
 - **Int 19**h
- d. Select the **Hide Setup Prompt** check box to enable the hide setup prompt, or clear the check box to disable it.
- e. Select a value for Setup Key Stroke:
 - Ctrl-S
 - Ctrl-B
- f. Set a value (from 0 to 14) in the **Banner Message Timeout** box.
- g. Select a value for Link Speed:
 - AutoNeg (auto negotiation)
 - **SmartAN** (smart auto negotiation (if available))
 - 1Gbps
 - 10Gbps
 - **25Gbps** (if available)
 - 40Gbps (if available)
 - **50Gbps** (if available)
 - 100Gbps (if available)
- h. Select the following check box options to enable them as needed:
 - Pre-boot Wake on LAN
 - VLAN Mode
- 8. Select a value (from 1 to 4094) in the VLAN ID (1..4094) box.
- 9. Select a value (from 0 to 7) in the **Boot Retry Count** box.
- 10. Click **OK**.

Figure 11-28 and Figure 11-29 show the Update MBA Configuration dialog box if you click the **Edit** button.

Update MBA Configuration	
	Option ROM
Boot Protocol	None 🚽
Boot Strap Type	Auto 🚽
	Hide Setup Prompt
Setup Key Stroke	Ctrl-S 🗸
Banner Message Timeout	5 *
Link Speed	1 Gbps 🛛 🔻
	Pre-boot Wake on LAN
	VLAN Mode
VLAN ID (14094)	1
Boot Retry Count	
	OK Cancel

Figure 11-28. Update MBA Configuration Dialog Box (vSphere Web Client Plug-in)

Update MBA Confi	guration	×
	✓ Option ROM	^
Boot Protocol	ISCSI Boot	
Boot Strap Type	Auto v	
	Ilide Setup Prompt	
Setup Key Stroke	Ctrl-S v	- 1
Banner Message Timeout	2	
Link Speed	10 Gbps ~	J
	Dre boek Males on LAN	·
	CANCEL	ОК

Figure 11-29. Update MBA Configuration Dialog Box (HTML5 based vSphere Client Plug-in)

Configuring iSCSI Boot

This section describes how to set up the iSCSI boot configuration in the following four sections:

- Configuring General Parameters
- Configuring Initiator Parameters
- Configuring Primary and Secondary Target Parameters
- Configuring MPIO Parameters

Configuring General Parameters

To configure the general parameters:

- 1. Select the appropriate port in the QConvergeConsole system tree.
- 2. Select the **Manage** tab.
- 3. On the Manage page, click the **QConvergeConsole** tab.
- 4. On the QConvergeConsole page, click the **Boot Configuration** tab.
- 5. On the Boot Configuration page, click **iSCSI Boot** as shown in Figure 11-30 and Figure 11-31.

vmware vSphere Web Cli	ent nt≘		U I Administrator@vSPHERE.LOCA	. • I Help	• I Q Search •
Navigator #	172.27.9.112 Actions *			=	🔯 Alarms 🛛 🕱 🕹
Home ► ② ₩ Home ► ② ₩ @ ■ ② ₩ 20172.27.0.129	Getting Started Summary Monitor Manage Rel Settings Networking Storage Alarm Definitions Ta	ated Objects Igs Permissions QConvergeConst	Die		All (0) New (0) Acknowledged (0)
← <u>In</u> Datacenter D	Χ Α ΦΓΟΘΙΟ	Adapter Manageme	ent		
	 1 172.27.9.112 1 CollE3802.RFE12500408700 1 CollE3802.RFE12500408700 1 CollE3802.RFE128070868 1 CollE3802.RFE128070868 1 CollE3802.RFE1280708408.B0 1 CollE3802.RFE1280686 1 CollE3802.RFE1280686 CollE3802.RFE12806868 CollE3802.RFE1280688 CollE3802.RFE12808 CollE3802.RFE12808 CollE3802.RFE12808 CollE3802.RFE12808 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280 CollE3802.RFE1280	Information Boot Configuration MBA ISCBI Boot. FCoE Boot General Parameters via DHCP ISCBI Parameters via DHCP ISCBI Parameters via DHCP ISCBI Parameters via DHCP CH4P Authonetation Boot to ISCSI target DHCP Vendor ID Unit Sup Olayi Time Use TCP Timestamp Target as First HDD UNIT Bayes Parameters IIP Address Subnet Mask Default Oakeway Primary DNS Bocondary DNS ISCSI Name CHAP ID CHAP Secret Primary Target Parameters	biggroutes	± 11	

Figure 11-30. iSCSI Boot Configuration in the vSphere Web Client Plug-in

vm vSphere Client M	Aenu ∽ Q Search	U Administrator@VSPHERE_LOCAL ~ Help ~ 🥹
Image: Control of the state of the sta	Instructions Accounts Summary Monitor Configure Permissions VMs Resource Pools Datastores Networks Storage Storage Adapters Storage Adapters Storage Adapters Metaodiff Adapter Management Storage Adapters Virtual switches Virtual switches Virtual switches Metaodiff Diagnostics Virtual switches Virtual switches Virtual switches Virtual switches Metaodiff Diagnostics Virtual switches Virtual switches Virtual switches Virtual switches Virtual switches Metaodiff Virtual switches Virtual switches Virtual switches Virtual switches Metaodiff Virtual switches Virtual switches Virtual switches Virtual switches Metaodiff Switcher Virtual switches Virtual switches Virtual switches Metaodiff Metaodiff Switcher Virtual switches Virtual switches Virtual switches Metaodiff Metaodiff Switcher Defeat VM Compatible Bio Configuration Bio Col Social adopters CHAP Authentication Switche <t< td=""><td>EDT Enabled Disabled Enabled BRCM ISAN 0 Disabled Disabled Disabled Disabled Disabled Disabled</td></t<>	EDT Enabled Disabled Enabled BRCM ISAN 0 Disabled Disabled Disabled Disabled Disabled Disabled
	▼ Hardware	¥

Figure 11-31. iSCSI Boot Configuration in the HTML5 based vSphere Client Plug-in

- 6. Click Edit.
- 7. Complete the following in the Update iSCSI Boot Configuration dialog box:
 - a. In the left pane, click General Parameters.
 - b. Select the **iSCSI Boot Enabled (offload)** check box to enable the iSCSI Boot offload mode, or clear the check box to disable it.

Note that this check box is only available when **Boot Mode** is **Offload**. Also, enabling iSCSI offload mode will set the **MBA Boot Protocol** to **None**. This feature is only applicable to 41000 Series Adapters. The 578xx adapters do not support hardware iSCSI boot on VMware.

c. Select Non-offload or Offload for Boot Mode.

Note that selecting **Non-offload** will set the **MBA Boot Protocol** to **iBFT**. Selecting **Offload** and enabling the **iSCSI Boot** (offload) will set the **MBA Boot Protocol** to **None**. This feature is only applicable to 41000 Series Adapters. The 578*xx* adapters do not support hardware iSCSI boot on VMware.

- d. Select the **TCP/IP Parameters via DHCP** check box to enable TCP/IP parameters by DHCP, or clear the check box to disable it.
- e. Select the **iSCSI Parameters via DHCP** check box to enable iSCSI parameters by DHCP, or clear the check box to disable it.

- f. Select the **CHAP Authentication** check box to enable CHAP authentication, or clear the check box to disable it.
- g. Select **Enabled** or **Disabled** for the **Boot to iSCSI target**¹ option.
- h. Type the DHCP vendor ID in the **DHCP Vendor ID** box.
- i. Set a value (from 0 to 255) in the Link Up Delay Time box.
- j. Select the **Use TCP Timestamp**¹ check box to enable TCP time stamp, or clear the check box to disable it.
- k. Select the **Target as First HDD**¹ check box to enable target as first HDD, or clear the check box to disable it.
- I. Set a value (from 0 to 60) in the LUN Busy Retry Count¹ box.
- m. Select **IPv4** or **IPv6** as the **IP Version**.
- n. Select the **HBA Boot Mode**¹ check box to enable HBA boot mode, or clear the check box to disable it.
- 8. Click OK.

Figure 11-32 shows the Update iSCSI Boot Configuration, **General Parameters** for 578xx Series Adapters. Figure 11-33 shows the Update iSCSI Boot Configuration, **General Parameters** for 41000 Series Adapters. Figure 11-34 shows the Update iSCSI Boot Configuration, **General Parameters** in the HTML5 based vSphere Client Plug-in.

Update iSCSI Boot Configuration		
General Parameters		Gonoral Daramotore
Initiator Parameters		
Primary Target Parameters		 ICPЛР Parameters via DHCP
Secondary Target Parameters		🗹 iSCSI Parameters via DHCP
MPIO Parameters		CHAP Authentication
	Boot to iSCSI target	Enabled 🗸
	DHCP Vendor ID	
	Link Up Delay Time	
		Use TCP Timestamp
		Target as First HDD
	LUN Busy Retry Count	0 •
	IP Version	IPv4 💌
		HBA Boot Mode
		OK Cancel

Figure 11-32. Update iSCSI Boot Configuration, General Parameters for 578xx Series Adapters

¹ This feature is not applicable to 41000 Series Adapters.
Update iSCSI Boot Configuration		
General Parameters		General Parameters
Initiator Parameters		Viecel Boot Enchlad (offload)
Primary Target Parameters		
Secondary Target Parameters	Boot Mode	Offload
		TCP/IP Parameters via DHCP
		🗹 iSCSI Parameters via DHCP
		CHAP Authentication
	DHCP Vendor ID	QLGC ISAN
	DHCP Request Tim	60 •
	Target Login Timeout	60
	IP Version	IPv6 -
		🗌 IPv4 Fallback
	VLAN ID	0
		OK Cancel

Figure 11-33. Update iSCSI Boot Configuration, General Parameters for 41000 Series Adapters

Update iSCSI Boot Configuration	General Parameters				×	
1 General Parameters		CP/IP Parameters via DHCF)			
2 Initiator Parameters		iSCSI Parameters via DHCP				L
3 Primary Target Parameters		CHAP Authentication				I.
4 Secondary Target Parameters	Boot to iSCSI target	Enabled v				
5 MPIO Parameters	DHCP Vendor ID	BRCM ISAN				
	Link Up Delay Time	0				
		Use TCP Timestamp				~
			CANCEL	BACK	NEXT	

Figure 11-34. Update iSCSI Boot Configuration, General Parameters (HTML5 based vSphere Client Plug-in)

Configuring Initiator Parameters

To configure the initiator parameters:

- 1. Select the appropriate port in the QConvergeConsole system tree.
- 2. Select the **Manage** tab.
- 3. On the Manage page, click the **QConvergeConsole** tab.

- 4. On the QConvergeConsole page, click **Boot Configuration**, and then click **iSCSI Boot** (see Figure 11-31 on page 230).
- 5. Click Edit.
- 6. Complete the following in the Update iSCSI Boot Configuration dialog box as shown in Figure 11-35 and Figure 11-36:
 - a. Click Initiator Parameters.
 - b. Type the IP address in the **IP Address** box.
 - c. Type the subnet mask in the **Subnet Mask** box.
 - d. Type the default gateway in the **Default Gateway** box.
 - e. Type the primary DNS in the **Primary DNS** box.
 - f. Type the secondary DNS in the **Secondary DNS** box.
 - g. Type the iSCSI name in the **iSCSI Name** box.
 - h. Type the CHAP ID in the **CHAP ID** box.
 - i. Type the CHAP secret key in the **CHAP Secret** box.
- 7. Click OK.

Update iSCSI Boot Configuration		
General Parameters		Initiator Doromotoro
Initiator Parameters		
Primary Target Parameters	IP Address	
Secondary Target Parameters	Subnet Mask	
MPIO Parameters	Default Gateway	
	Primary DNS	
	Secondary DNS	
	iSCSI Name	
	CHAP ID	
	CHAP Secret	
		OK Cancel

Figure 11-35. Update iSCSI Boot Configuration, Initiator Parameters (vSphere Web Client Plug-in)

Update iSCSI Boot Configuration	Initiator Parameters				× ^
1 General Parameters	IP Address				
2 Initiator Parameters	Subnet Mask				
3 Primary Target Parameters	Default Gateway				- 1
4 Secondary Target Parameters	Primary DNS				
5 MPIO Parameters	Secondary DNS				- 1
	iSCSI Name	iqn.1995-05.com.broadco			
	CHAP ID				~
			CANCEL	ВАСК	NEXT

Figure 11-36. Update iSCSI Boot Configuration, Initiator Parameters (HTML5 based vSphere Client Plug-in)

Configuring Primary and Secondary Target Parameters

To configure the primary and secondary target parameters:

- 1. Select the appropriate port in the QConvergeConsole system tree.
- 2. Select the Manage tab.
- 3. On the Manage page, click the **QConvergeConsole** tab.
- 4. On the QConvergeConsole page, click the **Boot Configuration** tab, and then click **iSCSI Boot** (see Figure 11-31 on page 230).
- 5. Click Edit.
- 6. Complete the following in the Update iSCSI Boot Configuration dialog box, as shown in Figure 11-37 and Figure 11-38:
 - a. Click Primary Target Parameters.
 - b. Select the **Connect** check box to connect the primary target parameters, or clear the check box to disable the primary target parameter connection.
 - c. Type the IP address in the IP Address box.
 - d. Set a value in the **TCP Port** box.
 - e. Set a value (from 0 to 255) in the **Boot LUN** box.
 - f. Type the iSCSI name in the **iSCSI Name** box.
 - g. Type the CHAP ID in the CHAP ID box.
 - h. Type the CHAP secret key in the **CHAP Secret** box.

- 7. Repeat Step 6 for the secondary target parameters.
- 8. Click **OK** or **Next**.

Update iSCSI Boot Configuration		
General Parameters		Drimany Target Darameters
Initiator Parameters		
Primary Target Parameters		Connect
Secondary Target Parameters	IP Address	
MPIO Parameters	TCP Port	3260
	Boot LUN	
	iSCSI Name	
	CHAP ID	
	CHAP Secret	
		OK Cancel

Figure 11-37. Update iSCSI Boot Configuration, Primary Target Parameters (vSphere Web Client Plug-in)

Update iSCSI Boot Configuration	Primary Target Parameter	rs			×	^
1 General Parameters		Connect				
2 Initiator Parameters	IP Address	0.0.0.0				
3 Primary Target Parameters	TCP Port	3260	_			
4 Secondary Target Parameters	Boot LUN	0	_			
5 MPIO Parameters	iSCSI Name					l
	CHAP ID					
	CHAP Secret					~
			CANCEL	ВАСК	NEXT	

Figure 11-38. Update iSCSI Boot Configuration, Primary Target Parameters (HTML5 based vSphere Client Plug-in)

Configuring MPIO Parameters

NOTE

This feature is not applicable to 41000 Series Adapters.

To configure the MPIO parameters:

- 1. Select the appropriate port in the QConvergeConsole system tree.
- 2. Select the **Manage** tab.
- 3. On the Manage page, click the **QConvergeConsole** tab.
- 4. On the QConvergeConsole page, click the **Boot Configuration** tab, and then click **iSCSI Boot** (see Figure 11-31 on page 230).
- 5. Click Edit.
- 6. Complete the following in the Update iSCSI Boot Configuration dialog box, as shown in Figure 11-39 and Figure 11-40:
 - a. Click MPIO Parameters.
 - b. Select the **Enable MPIO** check box to enable the MPIO, or clear the check box to disable the MPIO.
 - c. Select a MAC Address from the adapter (or select **None**) for the **Secondary Device**.
 - d. Select the **Use Independent Target Portal** check box to enable the independent target portal, or clear the check box to disable the independent target portal.
 - e. Select the **Use Independent Target Name** check box to enable the independent target name, or clear the check box to disable the independent target name.
- 7. Click **OK** or **Finish**.

Update iSCSI Boot Configuration		
General Parameters Initiator Parameters		MPIO Parameters
Primary Target Parameters Secondary Target Parameters	Secondary Device	None
MPIO Parameters		Use Independent Target Portal
		OK Cancel

Figure 11-39. Update iSCSI Boot Configuration, MPIO Parameters (vSphere Web Client Plug-in)

Update iSCSI Boot Configuration	MPIO Parameters		×
1 General Parameters 2 Initiator Parameters	Secondary Device	☐ MPIO Parameters None ∽	
3 Primary Target Parameters		Use Independent Target Portal	
4 Secondary Target Parameters		Use Independent Target Name	
		CANCEL BACK FI	NISH

Figure 11-40. Update iSCSI Boot Configuration, MPIO Parameters (HTML5 based vSphere Client Plug-in)

Configuring FCoE Boot

This section describes how to configure the following for FCoE boot:

- Configuring General Parameters
- Configuring Target Parameters

Figure 11-41 and Figure 11-42 show the Boot Configuration – FCoE Boot page.

vmware [,] vSphere Web Clie	ent nt≘				- I Q Search -
Navigator ¥	R 172.27.9.112 Actions -			Ξ×	🔯 Alarms 🛛 🕱 🕹
(Home D	Getting Started Summary Monitor Manage Rel	lated Objects			All (0) New (0) Acknowledged (0)
♥ @ ● <u>@</u> ▼ Ø 172.27.0.129	Settings Networking Storage Alarm Definitions Ta	ags Permissions QConverg	eConsole		
➡ Datacenter	Χ Α ΦΓΟΘΙΟ	Adapter Mana	gement		
	▼ 🛙 172.27.9.112	Information Boot Confi	guration Diagnostics		
	 Image OLE8362:RFE1250H08700 Image OLE2764:AFD1438Y00269 	MBA ISCSI Boot FC	oE Boot		
	QLE2562:LFD1115N06966	General Parameters		Edit	
	QLE2670 AFE1229F06865	Boot to FCoE target	Enabled		
	 Adapter1: BCM57840S B0 	Target as First HDD	Disabled		
	Port 0	Link Up Delay Time	0		Work In Progress
	► → Port 1	LUN Busy Retry Count	0		
	Adapter2: QLE85325 BU	Fabric Discovery Timed	ut 4		
	► → Portu	FCoE HBA Boot Mode	Enabled		
	Pon 1	Target Parameters			
		Connected	Port WWN	BootLUN	
	1	Disconnected	00:00:00:00:00:00:00:00	0	
		Disconnected	00:00:00:00:00:00:00	0	
		Disconnected	00:00:00:00:00:00:00	0	
		Disconnected	00:00:00:00:00:00:00	0	
		Disconnected	00:00:00:00:00:00:00	0	
		Disconnected	00:00:00:00:00:00:00	0	
		Disconnected	00:00:00:00:00:00:00	0	
		Disconnected	00:00:00:00:00:00:00	0	
				1	

Figure 11-41. Boot Configuration – FCoE Boot Page (vSphere Web Client Plug-in)

vm vSphere Client M	enu ~ Q Search			٥	Administrator@VSPHERE.LOCAL ~	Help ~	8
vSphere Client M Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Image: Client state Im	Constant Storage Constant Storage Adapters Storage Adapters Storage Adapters Storage Adapters Storage Adapters Networking Virtual Machines V	ACTIONS → Infigure Permissions VMs V 172.28.60.148 → Infigure 2:57840S → Port 0 Infigure 2:57840S → Port 1 Infigure 2:5784	Resource Pools Datastores Networks Adapter Management General Boot Configuration Diagnostics MBA FCOE BOOT ISCSI BOOT FCOE Boot Configuration Boot to FCOE target Target as First HDD Link Up Delay Time LUN Busy Retry Count Fabric Discovery Timeout	U Enabled Disabled 0 0	Administrator@VSPHERE.LOCAL ~	Help ~	•
	Authentication Services Certificate Power Management		FCoE HBA Boot Mode	Enabled Bort WWN	Boot	IIM	
	Advanced System Set System Resource Res		No	00-00-00-00-00-00-00	0		1
	Firewall Services		No	00-00-00-00-00-00-00	0		
	Security Profile		No	00-00-00-00-00-00-00	o		
	 → Hardware 		No	00-00-00-00-00-00-00	0		~

Figure 11-42. Boot Configuration – FCoE Boot Page (HTML5 based vSphere Client Plug-in)

Configuring General Parameters

To configure the general parameters:

- 1. Select the appropriate port in the QConvergeConsole system tree.
- 2. Select the **Manage** tab.
- 3. On the Manage page, click the **QConvergeConsole** tab.
- 4. On the QConvergeConsole page, click the **Boot Configuration** tab.
- 5. On the Boot Configuration page, click **FCoE Boot** as shown in Figure 11-42.
- 6. Click Edit.
- 7. Complete the following in the Update FCoE Boot Configuration dialog box, as shown in Figure 11-43 and Figure 11-44:
 - a. Click General Parameters.
 - b. Select the **Boot to FCoE target**¹ check box to enable boot to FCoE target, or clear the check box to disable it.
 - c. Select the **Target as First HDD**¹ check box to enable target as first HDD, or clear the check box to disable it.
 - d. Set a value (from 0 to 255) in the **Link Up Delay Time** box.

¹ This feature is not applicable to 41000 Series Adapters.

- e. Set a value (from 0 to 60) in the LUN Busy Retry Count¹ box.
- f. Set a value (from 0 to 8) in the **Fabric Discovery Timeout** box.
- g. Select the F**CoE HBA Boot Mode**¹ check box to enable the FCoE HBA boot mode, or clear the check box to disable it.
- 8. Click **OK**.

General Parameters		Configure Coneral Darametera
Target Parameters		Configure General Parameters
		🗹 Boot to FCoE target
		🔲 Target as First HDD
	Link Up Delay Time	0
	LUN Busy Retry Count	
	Fabric Discovery Timeout	4 -
		🗹 FCoE HBA Boot Mode

Figure 11-43. Update FCoE Boot Configuration, General Parameters (vSphere Web Client Plug-in)

m vSphere Client Me	enu ~ Q Search				Administrator@VSPHERE.LOCAL ~	Help 🗸
Compared Client Compared Compared Compared Compared Client Compared C	Configuration Configuration Configuration Configuration Storage Adapters Storage Adapters Storage Adapters Storage Devices Host Cache Configuration Virtual switches Virkernel adapters TCPIP configuration Virtual switches Virkernel adapters System Host Profile Time Configuration Authentication Servicer Certificate Power Management Advanced System Set. System Resource Res. Frewall Services Services Services	trons → ure Permissions VMs COLOGIC 172.28.60.148 > ■ Adapter 1: OL4526: > ■ Adapter 2: 578405 > ■ Port 0 ■ Port 1 ■ BCM5784 > ■ BCM5784	Resource Pools Datastores Networks Adapter Management General Boot Configuration Diagnostics MBA FCOE BOOT INCEI BOOT FCOE BOOT COnfiguration Boot to FCOE target Target as First HDD Link Up Delay Time LUN Busy Retry Count Fabric Discovery Timeout FCOE HBA Boot Mode Connected No	Enabled Enabled Disabled 0 0 4 Enabled Port WWN 00-00-00-00-00 0 0 0 0 0 0 0 0 0 0 0 0	Administratorio/VSPrieveLUCCAL V	LUN
	System Swap • Hardware		No	00-00-00-00-00-00-00	0	

Figure 11-44. Update FCoE Boot Configuration, General Parameters (HTML5 based vSphere Client Plug-in)

Configuring Target Parameters

To configure the target parameters:

- 1. Select the appropriate port in the QConvergeConsole system tree.
- 2. Select the Manage tab.
- 3. On the Manage page, click the **QConvergeConsole** tab.
- 4. On the QConvergeConsole page, click the **Boot Configuration** tab.
- 5. On the Boot Configuration page, click **FCoE Boot** as shown in Figure 11-42.
- 6. Click **Edit**.
- 7. Complete the following in the Update FCoE Boot Configuration dialog box as shown in Figure 11-45 and Figure 11-46:
 - a. Click Target Parameters.
 - b. Select one or more **Connected** check boxes for the corresponding Port WWN to connect, or clear the check boxes to disconnect.
 - c. Type the port world wide name in the **Port WWN** box(es).
 - d. Set a value (from 0 to 255) in the **Boot LUN** box.
- 8. Click **OK** or **Finish**.

Update FCoE Boot Configuration				
General Parameters	Configure Targe	t Paramotors		
Target Parameters	Configure runge		D	
	Connected	Portwww	Boot LUN	
		00:00:00:00:00:00:00:00	0	
		00:00:00:00:00:00:00:00	0	
		00:00:00:00:00:00:00:00	0	
		00:00:00:00:00:00:00:00		
		00:00:00:00:00:00:00:00		
		00:00:00:00:00:00:00:00		
		00:00:00:00:00:00:00:00	0	
		00:00:00:00:00:00:00:00		
			OK Cancel	

Figure 11-45. Update FCoE Boot Configuration, Target Parameters (vSphere Web Client Plug-in)

Update FCoE Boot Configuration	Configure Tar	get Parameters		× ^
1. General Parameters	Connected	Port WWN	Boot LUN	
		00-00-00-00-00-00-00	0	
2 Target Parameters				- 1
		00-00-00-00-00-00-00	0	
		00-00-00-00-00-00-00	0	
		00-00-00-00-00-00-00	0	
		00-00-00-00-00-00-00	0	
		00-00-00-00-00-00-00	0	~
			CANCEL BACK FI	NISH

Figure 11-46. Update FCoE Boot Configuration, Target Parameters (HTML5 based vSphere Client Plug-in)

Configuring Link Settings

If your 578xx/41000 Series Adapters support SmartAN[™] (smart auto negotiation), then the vSphere Web Client Plug-in has the Link Settings option, as shown in Figure 11-47 and Figure 11-48.



Link Settings Dialog Box with Advanced Link Settings Selected Link Settings Dialog Box with Smart AutoNeg Selected

Figure 11-47. vSphere Web Client Plug-in Link Settings

	🚡 172.27.2.13 🛛 act	ions -			
172.27.0.100	Summary Monitor Co	nfigure Permissions VM	s Resource Pools Datas	tores Networks	
TT 172.27.2.13	Agent VM Settings Default VM Compati Swap File Location	💢 φιοgic	Adapter Ma	nagement	
	 System Host Profile Time Configuration 	 172.27.2.13 Adapter 1: QL4521 	General Boot Configuratio	n Diagnostics Link Settings	
	Authentication Servi	∽ → _☉ Port 0	Link Settings		EDIT
	Power Management	₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩	Smart AutoNeg	Advanced Link Settings	
	System Resource Re	FastLinQ	NVM Speed	25G	
	Firewall Services		FEC Force Mode	None	
	Security Profile				
	Packages				
	✓ Hardware				
	Processors				
	Memory				
	PCI Devices				
	Power Management				

Link Settings Page

Link Settings		×	Link Settings ×
Smart AutoNeg	Smart AutoNeg • Advanced Link Settings		Smart AutoNeg Smart AutoNeg Advanced Link Settings
Advanced Link Settings NVM Speed	s 		CANCEL OK
FEC Force Mode	Nane v	CANCEL	Link Settings Dialog Box with Smart AutoNeg Selected

Link Settings Dialog Box with Advanced Link Settings Selected

Figure 11-48. HTML5 based vSphere Client Plug-in Link Settings

In the Link Settings page, the adapter port can be configured for Smart AutoNeg or Advanced Link Settings. Selecting Advanced Link Settings allows you to configure the speed and FEC modes. The available speeds will vary based on the speed capability of the adapter.

The Smart AutoNeg option may also appear in the MBA Boot Configuration list of available speeds. Changing the speed through the Link Settings page also changes the speed in the MBA Boot Configuration list.

Running Adapter Port Diagnostics

If the adapter has the capability of executing diagnostics, the following diagnostics tests are available, as shown in Figure 11-49 and Figure 11-50:

- Control Registers
- Internal Memory
- EEPROM
- Interrupt
- Loopback MAC¹
- Loopback PHY
- LED

vmware [,] vSphere Web Clie	ent n ≣			U I Administrator@VSPHERE_LOCAL + I Help	- I 🔍 Search -
Navigator 📕	172.27.9.112 Actions *			±*	🖸 Alarms 🛛 🕹 🕹
🔄 Home 💿 🕑	Getting Started Summary Monitor Manage Relat	ted Objects			All (0) New (0) Acknowledged (0)
Image: Constraint of the second se	Settings Networking Storage Alarm Definitions Tag	Permissions QConvergeConsole			
	Χ φιοgic	Adapter Management			
	▼ 172.27.9.112	Information Boot Configuration Diagnostics]		
	▶ an OLE8362:RFE1250H08700	Diagnostic Tests		Start Tests	
	GLE2764/AFD1438Y00269		Test	Status	
	Figure 2002.EF011151006666		Control Registers	NIA	
	Adapter1: BCM578405 BD		Internal Memory	N/A	4
	PPort0		EEPROM	N/A	Work in Progress
	→ → Port 1		Interrupt	N/A	
	✓ m Adapter2: QLE8532S B0		Loopback MAC	NIA	
	► → Port 0		Loopback PHY	NIA	
	Port 1		LED	N/A	

Figure 11-49. vSphere Web Client Plug-in Diagnostics Page

¹ The Loopback MAC feature is not applicable to 41000 Series Adapters.

vm vSphere Client N	Menu v Q Search	U	Administrator@VSPHERE.LOCAL ~	Help ~	8
© © 172.27.184 ✓ © 172.27.184 ✓ © Datacenter © 172.27.129 ✓ © 172.27.184 © NO.SUSE-Text3 © 176.45.8*iscsi	VICUUS VICUUS Summary Monitor Configure Permissions VMs Resource Pools Datastores Networks Storage Storage Storage Storage Datastores Networks Storage Devices Host Coche Configura Image: Configuration Diagnostics Image: Configuration Diagnostics Withaui switches Image: Configuration Image: Configuration Diagnostics Image: Configuration Diagnostics Withaui Switches Image: Configuration Image: Configuration Diagnostics Image: Configuration Diagnostics Withaui Matchines Image: Configuration Storage: Configuration Diagnostics Image: Configuration NA Most Portifie Image: Configuration Diagnostics NA Image: Configuration NA Most Portifie Image: Configuration Storage: Configuration NA Image: Configuration NA Most Portifie Image: Configuration Storage: Configuration NA Image: Configuration NA Most Portifie Image: Configuration Storage: Configuration NA Image: Configuration NA			START TEST	
Recent Tasks Alarms					*

Figure 11-50. HTML5 based vSphere Client Plug-in Diagnostics Page

To run a port diagnostic test:

- 1. Select the appropriate port in the QConvergeConsole system tree.
- 2. Select the **Manage** tab.
- 3. On the Manage page, click the **QConvergeConsole** tab.
- 4. On the QConvergeConsole page, click the **Diagnostics** tab, as shown in Figure 11-49 on page 244.
- 5. On the Diagnostics page, click **Start Tests**.
- 6. Complete the following in the Diagnostic Tests dialog box as shown in Figure 11-51:
 - a. Set a value in the **Number of Test Iteration(s)** box.
 - b. Set a value in the **LED Internal** box.
 - c. Select the appropriate test check boxes:
 - **Test** (to run all tests)
 - Control Registers
 - Internal Memory
 - EEPROM
 - Interrupt
 - Loopback MAC¹

¹ The Loopback MAC feature is not applicable to 41000 Series Adapters.

Loopback PHY

ostic tests to perform.
ion(s) <u>0</u> 5
Control Registers
based vSphere Client Plug in
based vopilere Client Flug-In
.5

vSphere Web Client Plug-in

Figure 11-51. Diagnostics Tests Dialog Box

Figure 11-52 shows the Diagnostics Tests window after the tests are completed.



Figure 11-52. Diagnostics Test Completed

Viewing Function Information for 578xx/41000 Series Adapters

To view function information for 578xx/41000 Series Adapters, select the function in the system tree. The Adapter Management window shows the function information and statistics.

Function Information

Figure 11-53 shows the Web Client function information for the 578xx/41000 Series Adapters. The function information includes:

- Vital Signs:
 - MAC Address
 - Permanent MAC Address
 - D MTU
 - Flow Control
- **Driver Information:**
 - Driver Name
 - Driver Version
 - Driver Date
 - □ Interface (UP or DOWN)
- Multi-function:
 - Physical Network MAC Address
 - Physical FCoE MAC Address
 - Physical iSCSI MAC Address
 - Minimum Bandwidth (%)

- Maximum Bandwidth (%)
- L2NIC Protocol
- iSCSI Protocol
- FCoE Protocol



Figure 11-53. Web Client Function Information on 578xx/41000 Series Adapters

Function Configuration

If available, a function configuration may be shown on the **Configuration** page for 578xx/41000 Series Adapters.

Figure 11-54 shows the Configuration page for 578xx Series Adapters.

vmware [®] vSphere Web Client	A CONTRACTOR		alp 🕶 I 🔍 Search 🔹
Navigator I 🗍 17	12.27.1.29 🔒 🥵 🧊 🏠 🕵 🧔 Actions 🗸	-	💵 📝 Work in Progress 🛛 🖡
<	g Baltudi Summary Montor Configure Permissions Wis Resource rintral Machines Marketings wave file location Intervention rend MA Settings Intervention wave file location Intervention rend WA Settings Intervention wave file location Intervention rend WA Settings Intervention wave file location Intervention rend Configuration Intervention utterventions Services Intervention rend Resource Reservation Intervention locksrsing Intervention utterventions Services Intervention utterventions Services Intervention utterventions Intervention uttervention	Profe Datastres Networks Adapter Management Information Configuration Statistics Parameters Edu Jumbo Packet 1500 Speed & Duplox 10000Bace/FFull Receive Buffers 1019 Chacksum Official T9R-ChecksumEnabled Transmittion Official Enable Nm Debx Cfg Enabled	Alarms X X

Figure 11-54. Configuration Page for 578xx Series Adapters

Figure 11-55 shows the Configuration page for 41000 Series Adapters.

Ά φιοgic [:]		Ad	apter N
▼ 🗐 172.27.9.112	Information	Conf	iguration
▶ 🏬 Adapter1: 57840SS B0	Parameters		
▶ 🏬 Adapter2: 57980SS B0	r ar an lotor o		
🗕 🏬 Adapter3: 57980SS B0	RoCE		Enabled
▼ → Port 0	RoCE Curren	A MTU	1024
FastLinQ QL45212H 25			
▼ → Port 1			
FastLinQ QL45212H 25			

Figure 11-55. Configuration Page for 41000/ Series Adapters

Figure 11-56 shows the HTML5 based vSphere Client Plug-in Configuration page for 578xx Series Adapters.

vm vSphere Client Menu - Q. Search			U	Administrator@VSPHERE.LOCAL ~	Help ~	۲
Image: Control of the second seco	Configure Permissions VMs	Resource Pools Datastores Networks Adapter Management Adapter Management General Configuration Statistics Function Parameters Flow Control Jumbo Packet Speed & Duplex Receive Buffers Transmit Buffers Checksum Offload Checksum Offload Nvm Dcbx Cfg	Forced Tx/Rx Enable 1500 10000BaseT/Full 1019 4078 TxRxChecksumEnabled Enabled Enabled		EDIT.	
Recent Tasks Alarms						*

Figure 11-56. Configuration Page for 578xx Series Adapters

Function Ethernet Statistics

Figure 11-57 shows the Web Client function Ethernet statistics for 578xx/41000 Series Adapters. The function Ethernet statistics include:

- Packets Received
- Packets Transmitted
- Broadcast Frames Received
- Broadcast Frames Transmitted
- Directed Frames Received
- Directed Frames Transmitted
- Multicast Frames Received
- Multicast Frames Transmitted
- Carrier Sense Errors
- Deferred Transmissions
- Excessive Collisions
- Late Collisions
- Multiple Collision Frames
- Single Collision Frames
- Octets Received
- Octets Transmitted
- Receive Threshold Hits
- Transmit Threshold Hits

To update the statistics, click **Refresh**.

vmware [,] vSphere Web Cli	ent nh≘		U I Administrator@VSPHERELOCAL + I Hølp + I Q Søarch	•
Navigator #	[] 172.27.0.26 Actions *			e 📝
(Home) 🔊	Getting Started Summary Monitor Manage Related Obi	ects		() ()
				Vork
♥ 🕼 172.27.0.155	Settings Networking Storage Alarm Definitions Tags Per	rmissions QCorwergeConsole		In Pri
	XXX			gre
172.27.2.156	AA OLOGIC	Adapter Management		66
172.27.9.112		Information Statistics		
F 🛛 172.27.8.144	QLE2560:USJ1234567	Ethernet Statistics		
	QLE8362:RFE1315H65345	Packete Received	0	
	QLE8242:RFE1317H72726	Packets Transmitted	0	
	- BCM57840 B0	Broadcast Frames Received	0	
	▶ → Port 0	Broadcast Frames Transmitted	0	
	► → Port 1	Directed Frames Received	0	
	BCM5/8405 B0	Directed Frames Transmitted	0	
	- CM57240 Natyrama II 10 Ginabit Ethematics	Multicast Frames Received	0	
	Bookstove Research in the organic Enternet re ISCSL-00-0E-1E-50:30-C1	Multicast Frames Transmitted	0	
	FCoE - 10-00-00-0E-1E-50-30-C1	Carrier Sense Errors	0	
	Port 1	Deferred Transmissions	0	
	 BCM57840 Net/dreme II 10 Gigabit Ethernet re 	Excessive Collisions	0	
	ISCSI - 00:0E:1E:50:30:C3	Late Collisions	0	
		Multiple Collision Frames	Ŭ.	
		Single Collision Frames	0	
		Octets Received	0	
		Octets Transmitted	0	
		Receive Threshhold Hits	0	
		Transmit Threshhold Hits	0	
	1			

Figure 11-57. Web Client Function Ethernet Statistics on 578xx/41000 Series Adapters

Viewing iSCSI Information for 578xx/41000 Series Adapters

To view iSCSI information for 578xx/41000 Series Adapters, select the iSCSI in the system tree.

NOTE

iSCSI must be configured for a function in the adapter content pane.

The Adapter Management window shows the following iSCSI information:

- Vital Signs:
 - MAC Address
 - IPv4 Address
 - IPv6 Address
 - D MTU
 - Device ID

- Driver Information:
 - Driver Name
 - Driver Version
 - Driver Firmware Version

Figure 11-58 shows the Web Client iSCSI information for 578xx/41000 Series Adapters.

vmware vSphere Web Clie	ent A≡		U I Administrator@VSPHERE.LOCAL + I Help + I Q Search -						
Navigator I	172.27.0.26 Actions -		E. 🔥						
📢 Home 🕞 🧐	Getting Started Summary Monitor Manage Related Ob	d Summary Monitor Manage Related Objects							
₩ 2 172.27.0.155	Settings Networking Storage Alarm Definitions Tags Pe	rmissions QConvergeConsole	aikin Pio						
	Ά φιοgic	Adapter Management	grass						
 ► 172279.112 ► 172279.114 		Information Vital Signs McA Address 00.05:1E.50:30:C1 IPR6 Address 00.05:00:00:00:00:00:00:00:00:00:00:00:00:0							

Figure 11-58. Web Client iSCSI Information on a 578xx/41000 Series Adapters

If there are active iSCSI sessions, selecting the portal in the system tree shows the information regarding the sessions. The iSCSI **Portal Information** includes the **Portal IP** and the following session information:

- Target
- Session State
- Target Portal
- Initiator Portal
- Initial R2T
- Immediate Data
- Max Outstanding R2T
- Data Sequence Order
- Data PDU in Order
- Error Recovery Level
- Connection ID
- Session Unique ID

Figure 11-59 shows the iSCSI portal information for 578xx/41000 Series Adapters.

1/62/03-16130 Actions *				
ing Started Summary Monitor Manage Rela	ted Objects			
tlings Networking Storage Alarm Definitions Tag	gs Permissions QConvergeConsole			
	Adapter Management			
■ 172 28 12 138	* Information			
DCM572402 B0				
	Portal Information	Portal Information		
- BCM578405 B0	D Portal IP	192.168.100.51		
- A Port 0	🔻 🗁 Session	0		
BCM57940 NatVtrame II Ethernat Multi B	Euro	iqn.1986-03.com.hp:storage.p2000g3.13491b47fb		
BCM57840 Net/Greme II Ethernet Multi F	Eun Session State	Connected		
BCM57840 Net/treme II Ethernet Multi F	Eun Darget Portal	192.168.100.9		
BCM57840 Net/freme Ethernet Multi-	Eun	192.168.100.51		
Port 1	" Dinitial R2T	True		
BCM57840 NetVtreme II Ethernet Multi F	Eun Dimmediate Data	False		
BCM57840 Net/Greme II Ethernet Multi F	Eun Max Outstanding R2T	1		
= BCN57840 Net/treme II Ethernet Multi F	Eun Data Sequence in Order	True		
- Tal ISCSI- 00:0E:1E:50:26:8B	Data PDU in Order	True		
WER Portal - 192 168 100 51	Error Recovery Level	0		
and 1986-03 com bristorage p	200 Connection ID	262176		
S 1 UN0 - HP - P2000G3 F	C/i Session Unique ID	73679168365608		
and 2001-05 com equallogic 0	-Ra Session	1		
Section 2000 - 100-0	nn Darget	lqn.2001-05.com.equallogic:0-8a0906-3a14b7e04-b5e000e7ac253579-isns		
ign 2001-05 com equallogic 0	-Ra	Connected		
	Target Portal	192.168.100.5		
	D Initiator Portal	192 168 100 51		

Figure 11-59. iSCSI Portal Information on a 578xx/41000 Series Adapters

Viewing Information for an iSCSI Target Connected to 578xx/41000 Series Adapters

To manage an iSCSI target connected to 578xx/41000 Series Adapters, select the iSCSI target in the system tree.

The Adapter Management window shows the following iSCSI target information:

- Target Information:
 - Target IQN Name
 - SCSI Target Number
 - □ MAC Address
 - IPv4 Address
 - □ IPV6 Address
 - LUN Count
- Session Information:
 - □ Target
 - □ Session State
 - Target Portal
 - Initiator Portal

- Initial R2T
- □ Immediate Data
- Max Outstanding R2T
- **Data Sequence in Order**
- Data PDU in Order
- Error Recovery Level
- Connection ID
- Session Unique ID

Figure 11-60 shows the iSCSI target information for 578xx/41000 Series Adapters.

ing Started Summary Monitor Manage Related O	ojects		
tings Networking Storage Alarm Definitions Tags P	ermissions QConvergeConsole		
🗘 φιοgic	Adapter Management		
172.28.12.136	Information		
• 📑 BCM57840S B0			
BCM57840S B0	ISCSI Target information		
- CM578408 B0	Target IQN Name	iqn.1986-03.com.hp:storage.p2000g3.13491b47fb	
	SCSI Target Number	0	
BCM57840 Net/Greme II Ethernet Multi Fun	🗋 MAC Address	00:00:00:00:00	
BCM57840 NetXtreme II Ethernet Multi Fun	D IPv4 Address	192.168.100.9	
BCM57840 Net/dreme II Ethernet Multi Fun	🗋 IPv6 Address	00:00:00:00:00:00:00:00:00:00:00:00:00:	
BCM57840 NetXtreme II Ethernet Multi Fun	LUN Count	1	
	🔻 🗁 Session	0	
BCM57840 NetXtreme II Ethernet Multi Fun	🗋 Target	iqn.1986-03.com.hp:storage.p2000g3.13491b47fb	
BCM57840 Net/treme II Ethernet Multi Fun	Session State	Connected	
= BCM57840 Net/frame II Ethemet Multi Fun	Target Portal	192.168.100.9	
- 100 100 100 100 100 100 100 100 100 10	🗋 Initiator Portal	192.168.100.51	
- SCR Portal - 192 169 100 51	🗋 Initial R2T	True	
	🗋 Immediate Data	False	
	Max Outstanding R2T	1	
COND CHP P200003 PCH	Data Sequence in Order	True	
Intraction and the second s	Data PDU in Order	True	
To lar 2001 05 com emullenia 0.00	Error Recovery Level	0	
v prigr. 2001-05.com.equallogic.0-8a	Connection ID	262176	
EUNU - EQLUGIC - 100E-00	Constitute ID	200200	

Figure 11-60. Web Client iSCSI Target Information on 578xx/41000 Series Adapters

Viewing Information for an iSCSI LUN Connected to 578xx/41000 Series Adapters

To manage an iSCSI LUN connected to 578xx/41000 Series Adapters, select the iSCSI LUN in the system tree.

The Adapter Management window shows the following iSCSI LUN information:

- SCSI Unit Number
- Capacity (MB)
- Vendor ID
- Product ID
- Device Type

Product Rev Level

Figure 11-61 shows the iSCSI LUN information for 578xx/41000 Series Adapters.



Figure 11-61. Web Client iSCSI LUN Information on 578xx/41000 Series Adapters

Figure 11-62.

A

Installing the QLogic Adapter CIM Provider Using VUM

This appendix provides information on how to install the QLogic Adapter CIM Provider on the ESX and ESXi Server using the VMware Update Manager (VUM).

To install the QLogic Adapter CIM Provider on an existing ESX/ESXi installation using VUM:

- 1. Identify one or more offline-bundle.zip files.
- 2. From vCenter Server, go to Home > Update Manager.
- 3. Click the **Patch Repository** tab.
- 4. At the top right of the window, click the **Import Patches** link.
- 5. Click **Finish**.

The QLogic Adapter CIM Provider is now added to the patch repository.

6. Create a baseline and remediate the ESX/ESXi host. For more information, refer to *Installing and Administering VMware vSphere Update Manager* available from the VMware Web site:

https://www.vmware.com/support/pubs/vum_pubs.html

B Troubleshooting

This appendix provides troubleshooting information for the QLogic Adapter CIM Provider and the VMware vSphere Web Client.

CIM Provider Troubleshooting

After a system startup, the SFCB (Small-Footprint CIM Broker) CIMOM (CIM object manager) in the ESX system should start automatically and load the QLogic Adapter CIM Provider when necessary.

If the CIM Provider does not start automatically, you can manually stop, start, or restart the SFCB CIMOM by issuing the following commands.

To stop the SFCB CIMOM and the QLogic Adapter CIM Provider:

/etc/init.d/sfcbd-watchdog stop

To start the SFCB CIMOM and the QLogic Adapter CIM Provider:

/etc/init.d/sfcbd-watchdog start

To restart the SFCB CIMOM and the QLogic Adapter CIM Provider:

/etc/init.d/sfcbd-watchdog restart

After starting the SFCB CIMOM, use a CIM client utility to query the QLogic Adapter CIM Provider for information.

VMware vSphere Web Client Troubleshooting

If Internet Explorer on Windows Server does not display the VMware vSphere Web Client, use one of the following procedures that corresponds to your operating system.

Windows Server 2016, Windows 2019, and Azure Stack HCI

Adobe Flash Player can only be installed (and updated) in Internet Explorer through Windows Update. On Windows Server, the Desktop Experience feature must be installed in order to have Windows Update install and update the Adobe Flash Player on the system.

To enable the Desktop Experience feature on Windows Server:

- 1. Go to the Server Manager and select Local Server.
- 2. Under the Roles and Features, select Tasks, Add Roles and Features.
- 3. Use the Add Roles and Features Wizard to add the Desktop Experience feature (located under the **User Interfaces and Infrastructure** feature).

Unable to view QConvergeConsole tab in vCenter Server Appliance

If the QConvergeConsole tab does not appear in vCenter Server Appliance (VCSA), when installed in a Linux OS, use the following procedure.

1. Issue the below command in VCSA:

/usr/lib/vmware-vmon/vmon-cli -r vsphere-client

2. Install the Web client vi plugin:

QLogic Adapter Web Client Plugin Linux x64 2 0 xx 0.bin

- 3. Restart the Apache Tomcat server.
- 4. Log into VCSA ip using a Web browser.

This should create the path:

```
/etc/vmware/vsphere-client/vc-packages/vsphere-client-s
erenity/com.qlogic.qLogicAdapterPlugin-2.0.xx.0/plugins
```

- 5. Connect the Vmware-ESXi6.5 host to the QConvergeConsole tab to verify the adapter has been detected.
- 6. Check for firewall rules that may block deployment of the Qlogic web client plugin .war file to VCSA.
- 7. Verify that the QLogicAdapterWebClient folder and the QLogicAdapterWebClient.war file are present under:

/root/apache-tomcat-7.0.94/webapps

c Revision History

Document Revision History				
Revision 1, January 21, 2021				
Changes	Sections Affected			
Updates to Dell/Marvell branding	All			

Glossary

adapter

The board that interfaces between the host system and the target devices. Adapter is synonymous with *Host Bus Adapter, Host Channel Adapter, host adapter, and adapter board.*

adapter port

A port on the adapter board.

adapter port beacon

An LED on the adapter. Flashing it enables you to locate the adapter.

alias

A user-defined name for an adapter, adapter port, logical disk, or subsystem.

API

Application programming interface. A set of routines, protocols, and tools for building software applications. API simplifies development by providing the building blocks.

bandwidth

A measure of the volume of data that can be transmitted at a specific transmission rate. A 1Gbps or 2Gbps Fibre Channel port can transmit or receive at nominal rates of 1 or 2Gbps, depending on the device to which it is connected. This corresponds to actual bandwidth values of 106MB and 212MB, respectively.

basic input output system

See BIOS.

BIOS

Basic input output system. Typically in Flash PROM, the program (or utility) that serves as an interface between the hardware and the operating system and allows booting from the adapter at startup.

boot code

The program that initializes a system or an adapter. Boot code is the first program to run when a system or a device within a system, such as an adapter, is powered on. FCode, BIOS, and extensible firmware interface (EFI) are all forms of boot code for specific hardware/operating system environments.

Boot code for QLogic Fibre Channel Adapters is required if the computer system is booting from a storage device (disk drive) attached to the adapter. The primary function of the boot code is communication with the external boot device before the operating system is up and running. Boot code can also perform secondary functions, including managing the setup for the adapter and initializing and testing the adapter's ISP.

boot device

The device, usually the hard disk, that contains the operating system the BIOS uses to boot from when the computer is started.

cache

A temporary high-speed storage (memory) area where recently used or frequently accessed data is stored for rapid access, thus increasing the efficiency of processor operations.

CLI

Command line interface. A program interface driven by entering commands and parameters.

command line interface

See CLI.

data center bridging

See DCB.

data center bridging exchange

See DCBX.

Data Center Ethernet

See DCE™.

DCB

Data center bridging. Provides enhancements to existing 802.1 bridge specifications to satisfy the requirements of protocols and applications in the data center. Because existing high-performance data centers typically comprise multiple application-specific networks that run on different link layer technologies (Fibre Channel for storage and Ethernet for network management and LAN connectivity), DCB enables 802.1 bridges to be used for the deployment of a converged network where all applications can be run over a single physical infrastructure.

DCBX

Data center bridging exchange. A protocol used by DCB devices to exchange configuration information with directly connected peers. The protocol may also be used for misconfiguration detection and for configuration of the peer.

DCE™

Data Center Ethernet. Cisco's foundation for delivering a unified fabric in which the end-state network where LAN, SAN, and inter-process communication (IPC) traffic are converged onto a single network infrastructure. The enhancements described within Cisco Data Center Ethernet helped create the IEEE 802.1 Data Center Bridging (DCB) working group.

device

A target, typically a disk drive. Hardware such as a disk drive, tape drive, printer, or keyboard that is installed in or connected to a system. In Fibre Channel, a *target device*.

DHCP

Dynamic host configuration protocol. Enables computers on an IP network to extract their configuration from servers that have information about the computer only after it is requested.

driver

The software that interfaces between the file system and a physical data storage device or network media.

dynamic host configuration protocol See DHCP.

embedded switch

See eSwitch.

eSwitch

Embedded switch. Functionality provided by adapters as a basic Layer 2 switch for Ethernet frames. Each physical port has one instance of an eSwitch, which supports all NIC partitioning on that physical port.

Ethernet

The most widely used LAN technology that transmits information between computer, typically at speeds of 10 and 100 million bits per second (Mbps).

FC

See Fibre Channel.

FCoE

Fibre Channel over Ethernet. A new technology defined by the T11 standards body that allows traditional Fibre Channel storage networking traffic to travel over an Ethernet link by encapsulating Fibre Channel frames inside Layer 2 Ethernet frames. For more information, visit www.fcoe.com.

Fibre Channel

A high-speed serial interface technology that supports other higher layer protocols such as SCSI and IP.

Fibre Channel over Ethernet

See FCoE.

firmware

Low-level software typically loaded into read-only memory and used to boot and operate an intelligent device.

Flash

Non-volatile memory where the boot code is saved. At times, Flash and boot code are used interchangeably.

Forward Error Correction (FEC)

A method of obtaining error control in data transmission in which the source (transmitter) sends redundant data and the destination (receiver) recognizes only the portion of the data that contains no apparent errors.

frame

Data unit consisting of a start-of-frame (SOF) delimiter, header, data payload, CRC, and an end-of-frame (EOF) delimiter.

Host Bus Adapter

An adapter that connects a host system (the computer) to other network and storage devices.

initiator

System component, such as a network interface card, that originates an I/O operation.

Internet Protocol

See IP.

Internet small computer system interface See iSCSI.

IP

Internet protocol. A method by which data is sent from one computer to another over the Internet. IP specifies the format of packets, also called *datagrams*, and the addressing scheme.

IPv4

Internet protocol version 4. A data-oriented protocol used on a packet switched internetwork (Ethernet, for example). It is a best-effort delivery protocol: it does not guarantee delivery, ensure proper sequencing, or avoid duplicate delivery. These aspects are addressed by an upper layer protocol (TCP, and partly by UDP). IPv4 does, however, provide data integrity protection through the use of packet checksums.

IPv6

Internet protocol version 6. Next-generation version of IP that, among other things, lengthens the IP address from 32 bits to 128 bits.

iSCSI

Internet small computer system interface. Protocol that encapsulates data into IP packets to send over Ethernet connections.

jumbo frames

Large IP frames used in high-performance networks to increase performance over long distances. Jumbo frames generally means 9,000 bytes for Gigabit Ethernet, but can refer to anything over the IP MTU, which is 1,500 bytes on an Ethernet.

LED

Light-emitting diode. Status indicator on a switch, router, adapter, or other device.

light-emitting diode

See LED.

LIP

Loop initialization process. The initialization process in an arbitrated loop that occurs when the loop is powered up or a new device is added. One function of a LIP is to assign addresses. All data transmission on the loop is suspended during a LIP.

logical unit number

See LUN.

loop initialization process

See LIP.

loopback

A diagnostic tool that routes transmit data through a loopback connector back to the same adapter.

LUN

Logical unit number, a subdivision of a SCSI target. It is the small integer handle that differentiates an individual disk drive or partition (volume) within a common SCSI target device such as a disk array.

Technically, a LUN can be a single physical disk drive, multiple physical disk drives, or a portion (volume) of a single physical disk drive. However, LUNs are typically not entire disk drives but rather virtual partitions (volumes) of a RAID set.

Using LUNs, the Fibre Channel host can address multiple peripheral devices that may share a common controller.

MAC address

Media access control address. A unique hardware device identifier used in IP address assignment.

maximum transmission unit

See MTU.

media access control address

See MAC address.

message signaled interrupts

See MSI, MSI-X.

MSI, MSI-X

Message signaled interrupts. One of two PCI-defined extensions to support message signaled interrupts (MSIs), in PCI 2.2 and later and PCI Express. MSIs are an alternative way of generating an interrupt through special messages that allow emulation of a pin assertion or deassertion.

MSI-X (defined in PCI 3.0) allows a device to allocate any number of interrupts between 1 and 2,048 and gives each interrupt separate data and address registers. Optional features in MSI (64-bit addressing and interrupt masking) are mandatory with MSI-X.

MTU

Maximum transmission unit. Refers to the size (in bytes) of the largest packet (IP datagram) that a specified layer of a communications protocol can transfer.

multiboot

The act of installing multiple operating systems on a computer, and being able to choose which one to boot when starting the computer. Multibooting may require a custom boot loader.

N_Port

Node port. A port that connects by a point-to-point link to either a single N_Port or a single F_Port. N_Ports handle creation, detection, and flow of message units to and from the connected systems. N_Ports are end ports in virtual point-to-point links through a fabric, for example, N_Port to F_Port to F_Port to N_Port using a single Fibre Channel fabric switch.

network interface card

See NIC.

NIC

Network interface card. Computer card installed to enable a dedicated network connection.

NIC partitioning

See NPAR.

node port

See N_Port.

NPAR

NIC partitioning. The division of a single NIC port into multiple physical functions or partitions, each with a user-configurable bandwidth and personality (interface type). Personalities include NIC, FCoE, and iSCSI.

path

A path to a device is a combination of a adapter port instance and a target port as distinct from internal paths in the fabric network. A fabric network appears to the operating system as an opaque network between the adapter (initiator) and the target.

Because a path is a combination of an adapter and a target port, it is distinct from another path if it is accessed through a different adapter and/or it is accessing a different target port. Consequently, when switching from one path to another, the driver might be selecting a different adapter (initiator), a different target port, or both. This is important to the driver when selecting the proper method of failover notification. It can make a difference to the target device, which might have to take different actions when receiving retries of the request from another initiator or on a different port.

PCI Express (PCIe)

A third-generation I/O standard that allows enhanced Ethernet network performance beyond that of the older peripheral component interconnect (PCI) and PCI extended (PCI-x) desktop and server slots.

personality

When used in the context of an adapter, the term *personality* refers to the entire adapter. It includes all the I/O ports and the functions on that adapter. For example, a QLogic adapter can have dual personality, converting from Fibre Channel to Converged Network Adapter or vice versa. Therefore, all the I/O functions and all the I/O physical ports on the adapter changes from Fibre Channel Adapter to Converged Network Adapter.

ping

A computer network administration utility used to test whether a specified host is reachable across an IP network, and to measure the round-trip time for packets sent from the local host to a destination computer.

point-to-point

Also FC-P2P. Two Fibre Channel nodes directly connected (not in a loop).

port

Access points in a device where a link attaches. There are four types of ports, as follows:

- N_Port—a Fibre Channel port that supports point-to-point topology.
- NL_Port—a Fibre Channel port that supports loop topology.
- FL_Port—a port in a fabric where an N_Port can attach.
- FL_Port—a port in a fabric where an NL_Port can attach.

port instance

The number of the port in the system. Each adapter may have one or multiple ports, identified with regard to the adapter as port 0, port 1, and so forth. To avoid confusion when dealing with a system containing numerous ports, each port is assigned a port instance number when the system boots up. So port 0 on an adapter might have a port instance number of 8, for example, if it is the eighth port discovered by the system.

QoS

Quality of service. Refers to the methods used to prevent bottlenecks and ensure business continuity when transmitting data over virtual ports by setting priorities and allocating bandwidth.

quality of service

See QoS.

RAID

Redundant array of independent disks. Fault-tolerant disks that look like either single or multiple volumes to the server.

redundant array of independent disks See RAID.

See RAID

router log

Log of messages describing events that occur on the intelligent storage router.

SAN

Storage area network. Multiple storage units (disk drives) and servers connected by networking topology.

SCSI

Small computer system interface. A high-speed interface used to connect devices, such as hard drives, CD drives, printers, and scanners, to a computer. The SCSI can connect many devices using a single controller. Each device is accessed by an individual identification number on the SCSI controller bus.

SerDes

Serializer/deserializer. A pair of functional blocks commonly used in high-speed communications to compensate for limited input/output. These blocks convert data between serial data and parallel interfaces in each direction.

serializer/deserializer

See SerDes.

small computer system interface

See SCSI.

SR-IOV

Single root input/output virtualization.

storage area network

See SAN.

target

The storage-device endpoint of a SCSI session. Initiators request data from targets. Targets are typically disk-drives, tape-drives, or other media devices. Typically a SCSI peripheral device is the target but an adapter may, in some cases, be a target. A target can contain many LUNs. A target is a device that responds to a requested by an initiator (the host system). Peripherals are targets, but for some commands (for example, a SCSI COPY command), the peripheral may act as an initiator.

target binding

The process in which the adapter driver binds a target ID using a target's worldwide port name (WWPN) or port ID. This binding enables the target ID to always connect to the WWPN or port ID across reboots regardless of SAN reconfiguration.

ТСР

Transmission control protocol. A set of rules to send data in packets over the Internet protocol.

TLV

Type-length-value. Optional information that may be encoded as an element inside of the protocol. The type and length fields re fixed in size (typically 1—4 bytes), and the value field is of variable size. These fields are used as follows:

- Type—A numeric code that indicates the kind of field that this part of the message represents.
- Length—The size of the value field (typically in bytes).
- Value—Variable-sized set of bytes that contains data for this part of the message.

transmission control protocol

See TCP.

type-length-value

See TLV.

virtual logical area network

See VLAN.

vital product data

See VPD.

VLAN

Virtual logical area network (LAN). A group of hosts with a common set of requirements that communicate as if they were attached to the same wire, regardless of their physical location. Although a VLAN has the same attributes as a physical LAN, it allows for end stations to be grouped together even if they are not located on the same LAN segment. VLANs enable network reconfiguration through software, instead of physically relocating devices.

VPD

Vital product data. Information provided by the manufacturer about the current working adapter. Information varies by manufacturer, or may not be provided at all.

world wide node name

See WWNN.

world wide port name

See WWPN.

WWNN

World wide node name. A unique 64-bit address assigned to a device.

WWPN

World wide port name. A unique 64-bit address assigned to each port on a device. One WWNN may contain multiple WWPN addresses.
Index

A

adapter port beacon definition of 260 CNA 159 FC adapter, activating 147 FC port, activating 34 adapter ports definition of 260 Converged Network Adapter, managing 159 Fibre Channel, managing 33, 145 NIC (Ethernet), managing 142 adapters definition of 260 FC ports, managing 32 firmware preload table, updating 140 firmware SerDes table, updating 140 Flash image, updating 139 Flash, updating 87 host view, fabric 134 host view, managing 139 management window, FC 32 personality type, changing 141 SR-IOV parameters, configuring 141 supported models for vCenter Server Plug-in supported models for vSphere Web Client Plug-in 120 Adobe Flash Player, troubleshooting issues with 258 alternate boot 65 API definition of 260 application programming interface, See API audience, intended for guide xix

В

bandwidth definition of 260 allocation, NIC function 55 current active 55 NIC function 54 NPAR, configuring 161 overall, shown in pie chart 55 percentage, determining 61 weight and maximum 55 basic input output system, See BIOS beacon CNA, activating 159 FC adapter port, activating 34 FC port, activating 147 BIOS definition of 260 version, Converged Network Adapter 50 version, Fibre Channel adapter 32 boot from device 65 from port 65 mode setting 78 boot code definition of 260 boot configuration FC port 36 FC port, viewing 34 FCoE function 65 iSCSI function 78, 192 boot devices definition of 260 target name 79 boot parameters FC port, configuring 147

FCoE function, configuring 175 iSCSI function, configuring 192 buffer test read-write for FC adapter, running 42 read-write for FCoE function, running 180

С

cache definition of 261 capture level mask, firmware minidump 28, 29, 31 CIM Provider, See QLogic Adapter CIM Provider CIMOM enabling for CIM Provider 15 SFCB, troubleshooting CIM Provider issues 257 CLI definition of 261 QConvergeConsole 2, 119 closing vCenter Server Plug-in 133 command line interface, See CLI command timeout, setting 29 configuring adapter personality type 141 eSwitch parameters, NIC function 164 FC port boot parameters 147 FC port parameters 148 FCoE function boot parameters 175 FCoE function NPAR type 174 FCoE function parameters 175, 182 FCoE function primary FCF VLAN ID 182 IPv4 parameters 195 IPv6 parameters 196 iSCSI and firmware settings 193 iSCSI function boot parameters 192 iSCSI function diagnostics 84 iSCSI function parameters 193 iSCSI function, network settings 194 NIC function NPAR 160 NIC function parameters 166 NPAR bandwidth 161

NPAR function type 163, 191 SR-IOV parameters 141 connection options 38, 66 content pane, vCenter Server Plug-in 22 conventions, documentation xxi Converged Network Adapters FCoE functions, managing 63 iSCSI functions, managing 76 managing with vCenter Server Plug-in 49 NIC functions, managing 52 port beacon, activating 159 ports, managing 51, 159 creating data center and adding servers 17

D

data center bridging exchange, See DCBX data center bridging, See DCB Data Center Ethernet, See DCE data center, creating 17 data pattern, selecting jitter for diagnostic test 42 data rate FCoE function 66 Fibre Channel port 38 data size, selecting for diagnostic test 43 DCB, definition of 261 DCB, FCoE function info, viewing 183 DCBX definition of 261 FCoE function 72 NIC function info, viewing 60, 169 TLV 74 TLV info, NIC function 61, 170 TLV, FCoE function info 185 DCE statistics, viewing 73, 184 DCE, definition of 261 debug dump FCoE function firmware, retrieving 180 firmware, retrieving 59, 70, 153, 169 generating firmware 59 iSCSI function firmware, retrieving 199 NIC function firmware, retrieving 169

NIC port, retrieving 143 definitions of terms 260 Desktop Experience feature, using 258 device definition of 261 target information, viewing 86 DHCP client ID 78 definition of 261 enabling for iSCSI boot 78 vendor ID 78 diagnostic tests FC port, accessing 34 FC port, running 42, 151 FCoE function, running 69, 179 FCoE ping test, running 181 iSCSI function, running 198 iSCSI, configuring 84 loopback, running 179 NIC function, running 59, 168 read-write buffer, running 180 documentation contents of guide xix conventions used in guide xxi related materials xx downloading vCenter Server Plug-in 8 driver capture mask for firmware minidump 28, 29, 31 definition of 261 information, viewing 135 parameters, configuring 136 dual-boot, See multiboot dynamic host configuration protocol, See DHCP

Ε

embedded switch, *See* eSwitch enabling CIMOM 15 Desktop Experience 258

Ethernet parameters for the host 30 extended error message logging 28, 29 firmware minidump support 31 MSI/MSI-X interrupt handling 28 vCenter Server Plug-in 23 error message logging enabling 28 enabling extended 29 eSwitch definition of 262 parameters, configuring 164 statistics, viewing 163 ESX/ESXi Server adding to data center 17 components required for vCenter Server Plug-in 3 Ethernet definition of 262 NIC function statistics, viewing 58 NIC ports, managing 142 parameters, configuring for NIC port 142 parameters, viewing 30 exiting vCenter Server Plug-in 133 extended error message logging, enabling 28, 29

F

fabric adapter host view, displaying 134 FCF VLAN ID, configuring primary 182 FCF, configuring 71 FCoE, definition of 262 FCoE functions attribute info, viewing 71 boot parameters, configuring 65, 175 CNA managing 63 configuring 71 DCB info, viewing 183 DCBX TLV info, viewing 185 DCE statistics, viewing 184 diagnostic tests, running 69, 179 FCF, configuring 71 firmware debug dump, retrieving 70, 180

firmware parameters, configuring 66 loopback test, running 69, 179 LUN info, viewing 190 managing 173 NPAR function type 174 parameters, configuring 175, 182 ping test, running 64, 70, 181 primary FCF VLAN ID, configuring 182 read-write buffer test 69 read-write buffer test, running 180 statistics, viewing 68, 177 target info, viewing 189 temperature info, viewing 186 transceiver info, viewing 67, 176 VPD, viewing 187 features vCenter Server Plug-in 2 vSphere Web Client Plug-in 119 Fibre Channel adapters management window 32 managing with vCenter Server Plug-in 32 managing with vSphere Web Client Plug-in 139 Fibre Channel Forwarder, configuring 71 Fibre Channel over Ethernet, See FCoE Fibre Channel ports beacon, activating 147 boot parameters, configuring 147 diagnostic tests, running 42, 151 firmware debug, retrieving 153 loopback test 42 loopback test, running 152 managing 145 parameters, configuring 148 ping test results, viewing 45 ping test, running 153 QoS info, viewing 156 QoS, configuring 48 QoS, managing 34 read-write buffer test 42 read-write buffer test, running 152 statistics, viewing 150 temperature info, viewing 155 transceiver info, viewing 149

VPD, viewing 154 firmware definition of 262 automatic recovery, enabling 30 minidump capture level mask, specifying 28, 29.31 minidump support, enabling 31 preload table, updating 140 SerDes table, updating 140 settings 81 firmware debug dump FCoE function 70 Fibre Channel port, retrieving 153 iSCSI function 85 iSCSI function, retrieving 199 NIC function, generating 59 NIC function, retrieving 59, 169 NIC port, retrieving 143 retrieving 180 firmware parameters FC port, viewing 34 FCoE function, configuring 66 Fibre Channel port 38 iSCSI, configuring 193 NIC function, configuring 57 Flash definition of 262 adapter image, updating 139 updating with vCenter Server Plug-in 87 Flash Player, troubleshooting issues with 258 frame definition of 262 size, specifying maximum length 39, 66 function type configuring NPAR 163 NIC, viewing 56 functions FCoE LUN info, viewing 190 FCoE target info, viewing 189 FCoE, configuring 182 FCoE, managing 173 FCoE, viewing temperature info 186 FCoE, viewing VPD 187 iSCSI, managing 190

NIC, configuring 160 NIC, configuring NPAR 160 NIC, configuring NPAR bandwidth 161 NIC, on CNA 52 type, viewing and changing 54

G

getting started vCenter Server Plug-in 17 vSphere Web Client Plug-in 125 glossary of terms 260

Η

hardware LRO, enabling 30 hardware requirements vCenter Server Plug-in 3 vSphere Web Client Plug-in 120 hardware support, enabling VLAN 30 HBA, definition of 262 Host Bus Adapter definition of 262 connection option 43 diagnostic test parameters 44 host network map viewing in vCenter Server Plug-in 27 viewing in vSphere Web Client Plug-in 135, 206 host storage map, viewing in vCenter Server Plug-in 26 map, viewing in vSphere Web Client Plug-in 135 host view adapters, managing 139 driver information, viewing 135 driver parameters, configuring 136 opening 134 hosts managing with vCenter Server Plug-in 25 managing with vSphere Web Client Plug-in 134, 201

I

icons special symbols 22 system tree device 21 image, updating adapter Flash 139 initiator definition of 262 firmware settings 81 iSCSI settings 79 installing QLogic Adapter CIM Provider 14 QLogic Adapter CIM Provider on ESX/ESXi using VUM 256 vCenter Server Plug-in 8 vSphere Web Client Plug-in 122 Installing and Administering VMware vSphere Update Manager document, downloading 256 instance (port), definition of 265 intended audience of guide xix Internet protocol version 4, See IPv4 Internet protocol version 6. See IPv6 Internet Protocol, definition of 262 Internet small computer system interface, See iSCSI interrupt handling MSI, enabling 31 MSI/MSI-X, enabling 28 MSI-X, enabling 31 IP. definition of 262 IPv4 definition of 263 parameters, configuring 195 IPv6 definition of 263 parameters, configuring 196 iSCSI definition of 263 function, configuring 193 parameters, configuring 27, 29 settings 79 **iSCSI** functions boot parameters, configuring 192

CNA, managing 76 diagnostic tests, running 198 diagnostics, configuring 84 firmware debug dump, retrieving 199 IPv4 parameters, configuring 195 IPv6 parameters, configuring 196 iSCSI and firmware settings, configuring 193 managing 190 network settings, configuring 194 NPAR function type, configuring 191 parameters, configuring 193 ping test, running 85, 198 statistics, viewing 196 VPD info, viewing 199 issues, *See* troubleshooting

J

jumbo frames definition of 263 MAC transmit 82 path MTU 85

L

large receive offload, enabling hardware 30 LED, definition of 263 light-emitting diode, See LED LIP definition of 263 full login 39 reset 39 loading, QLogic Adapter CIM Provider 4, 257 logging, extended error message 28 logical unit number, See LUN login retry count 39, 66 loop initialization process, See LIP loopback test definition of 263 FC port, running 152 FCoE function 69 FCoE function, running 179

Fibre Channel port 42 LRO, enabling hardware 30 LUNs definition of 263 boot device ID 79 FCoE function info, viewing 190 information, viewing 87

Μ

MAC address and learning, enabling 31 MAC address, definition of 263 managing hosts with vCenter Server Plug-in 25 hosts with vSphere Web Client Plug-in 134, 201 map host network, viewing 27, 135, 206 host storage, viewing 26, 135 maximum transmission unit, See MTU media access control address, See MAC address message logging, enabling extended 28, 29 message signaled interrupts, See MSI, MSI-X minidump, enabling firmware support 31 MSI definition of 264 interrupt handling 28 interrupt handling, enabling 28, 31 MSI-X definition of 264 interrupt handling 28 interrupt handling, enabling 28, 31 MTU definition of 264 path size 85 receive ring size 138 receive ring size, specifying 31 multiboot definition of 264 version 50 version, Flash kit 32

Ν

N Port, definition of 264 netqueues per function, specifying quantity 31 network interface card, See NIC network map, viewing host 27, 135, 206 network settings, configuring iSCSI function 194 NIC functions CNA, managing 52 DCBX info, viewing 60, 169 DCBX TLV info, viewing 61, 170 diagnostic tests, running 168 diagnostics tests, running 59 eSwitch parameters configuring 164 eSwitch statistics, viewing 163 firmware debug dump 59 firmware debug dump, retrieving 169 firmware parameters, configuring 57 managing 160 NPAR bandwidth allocation 55 NPAR bandwidth, configuring 161 NPAR function type, configuring 163 NPAR, configuring 54, 160 parameters, configuring 166 port statistics, resetting and refreshing 58 statistics info, viewing 58 statistics, viewing 167 type, viewing and changing 56 VPD info. viewing 62, 172 NIC partitioning, See NPAR NIC port Ethernet parameters, configuring 142 firmware debug dump, retrieving 143 statistics, viewing 143 node port, See N Port NPAR definition of 264 MAC address and learning in receive path 31 NPAR functions bandwidth, configuring 161 eSwitch statistics, viewing 163 FCoE function type, configuring 174

iSCSI, configuring 77 NIC bandwidth allocation 55 NIC, configuring 54, 160 type, configuring 163, 191

Ρ

package contents, QLogic Adapter CIM Provider and vCenter Server Plug-in 6 parameters Ethernet, viewing 30 firmware, viewing for FC port 34 iSCSI, configuring 27, 29 path, definition of 264 PCIe, PCI Express, definition of 265 persistent binding, definition of 266 personality definition of 265 type, changing 141 ping test definition of 265 FC port, viewing results 45 FCoE function, running 181 FCoE, running 64, 70 Fibre Channel port, running 153 iSCSI function 85 iSCSI function, running 198 point-to-point definition of 265 connection type 38, 66 frame size 39, 66 port instance, definition of 265 ports definition of 265 beacon, activating 34 CNA test beacon 159 CNA, managing 51, 159 FC adapter, managing 33 FC boot parameters, configuring 147 FC diagnostics, running 42, 151 FC parameters, configuring 148 FC QoS info, viewing 156 iSCSI functions, managing 190

loopback test, running 152 NIC (Ethernet), managing 142 NIC function statistics, resetting and refreshing 58 NIC function statistics, viewing 167 NIC function, managing 160 NIC parameters, configuring 166 NIC statistics, resetting and refreshing 58 read-write buffer test, running 152 temperature info, viewing 155 VPD, viewing 154 preface, guide introduction xvii preload table, updating firmware 140 primary boot, CNA FCoE function 65 primary FCF VLAN ID, configuring 182

Q

QLogic Adapter CIM Provider installation methods 14 installation package 7 installing ESXi 14 package contents 6 starting 15 troubleshooting 4, 257 uninstalling 16 updating ESXi 15 VUM, installing with 256 QLogic Adapter VI Plug-in Registration Wizard 9–13 QoS

definition of 265 FC port info 34 FC port info, configuring 48 FC port, viewing 156 quality of service, *See* QoS queue depth 28

R

RAID, definition of 265 Read Me 7 read-write buffer test

FCoE function, running 69, 180 Fibre Channel port 42, 152 **Receive Netqueue** specifying quantity per function 31 support, enabling 31 receive ring size, specifying 31 redundant array of independent disks, See RAID related materials xx Release Notes document, viewing 7 removing, See uninstalling retrieving FCoE function firmware debug dump 180 firmware debug dump 153 iSCSI function firmware debug dump 199 NIC function firmware debug dump 169 ring size, transmit for NIC adapter 31 router log, definition of 265 running iSCSI function diagnostic tests 198 iSCSI function ping test 198

S

SAN, definition of 266 SCSI, definition of 266 Security Warning dialog box 17 segmentation offload, TSO 30 SerDes definition of 266 updating firmware table 140 serializer/deserializer, See SerDes SFCB CIMOM, loading 4, 257 small computer system interface, See SCSI software requirements vCenter Server Plug-in 4 vSphere Web Client Plug-in 120 special icon symbols 22 SR-IOV definition of 266 parameters, configuring 141 starting QLogic Adapter CIM Provider 15

vCenter Server Plug-in 17 vSphere Web Client Plug-in 125 statistics eSwitch, viewing 163 FC port info, viewing 41 FC port, viewing 34, 150 FCoE function, viewing DCE 184 FCoE function, viewing info 68 FCoE functions, viewing 177 iSCSI function 82 iSCSI function, viewing 196 NIC function, viewing 167 NIC function, viewing info 58 NIC port, viewing 143 port, NIC function 58 storage area network, See SAN storage map, viewing host 26, 135 supported adapter models vCenter Server Plug-in 4 vSphere Web Client Plug-in 120 supported versions of VMware ESX/ESXi and vCenter Server 4 symbols, special icons 22 system requirements vCenter Server Plug-in 3 vSphere Web Client Plug-in 120 system tree device icons 21 pane, description of 21 special icons 22

Т

target binding, definition of 266 targets definition of 266 boot device names 79 device info, viewing 86 FCoE function info, viewing 189 TCP definition of 266 segmentation offload, enabling 30 temperature info

FC port, monitoring 47 FC port, viewing 34, 155 FCoE function, viewing 186 terms and definitions 260 tests, See diagnostic tests timeout command, setting 29 TLV definition of 266 DCBX FCoE function info, viewing 185 DCBX info, viewing 61, 170 FCoE DCBX function 74 Tomcat Web server, requirement for vCenter Server Plug-in 4 transceiver info FC port, viewing 34, 39, 149 FCoE function 67 FCoE function, viewing 176 transmission bandwidth percentage 61 transmission control protocol, See TCP transmit ring size, specifying 31 tree pane, description of 21 troubleshooting Adobe Flash Player issue 258 CIM Provider 257 QLogic VMware CIM Provider 4 vSphere Web Client issues 257 TSO enabling 30 packets and bytes for Ethernet 58 type-length-value, See TLV typographic conventions xxi

U

uninstalling QLogic Adapter CIM Provider 16 vCenter Server Plug-in 14 vSphere Web Client Plug-in 124 updating adapter Flash image 87, 139 firmware preload table 140 firmware SerDes table 140 QLogic Adapter CIM Provider 15

user interface vCenter Server Plug-in 20 vSphere Web Client Plug-in 131 user privileges required for vCenter Server Plug-in 5

V

vCenter Server Appliance versions supported 4 components required for vCenter Server Plug-in 4 versions supported 4 vCenter Server Plug-in description of xvii enabling and disabling 23 exiting 133 features 2 getting started 17 installing 8 package contents 6 start 17 starting 17 supported adapters 4 system requirements 3 uninstalling 14 user interface 20 virtual LAN, See VLAN virtual logical area network, See VLAN vital product data, See VPD VLAN definition of 267 hardware support, enabling 30 primary FCF ID, configuring 182 VMware Update Manager, See VUM VMware vCenter Server, supported versions 4 VMware vSphere Client, supported versions 4 VPD definition of 267 FCoE function 75 FCoE function, viewing 187 Fibre Channel port 34, 46 Fibre Channel port, viewing 154

iSCSI function, viewing 85, 199 NIC function info, viewing 62, 172 vSphere Client log-in dialog box 18 vSphere Client, supported versions 4 vSphere Web Client Plug-in description of xvii features 119 getting started 125 installing 122 starting 125 supported adapters 120 system requirements 120 uninstalling 124 user interface 131 vSphere Web Client troubleshooting 257 VUM description of 15 QLogic Adapter CIM Provider, installing with 256

W

waiting time to retry commands 28 Windows Server Desktop Experience, enabling 258 world wide node name, See WWNN world wide port name, See WWPN WWNN definition of 267 WWPN definition of 267 enabling fabric-assigned boot LUN 37 fabric-assigned 35, 146 vPort 158

Ζ

zero interrupt delay operation 28



Marvell first revolutionized the digital storage industry by moving information at speeds never thought possible. Today, that same breakthrough innovation remains at the heart of the company's storage, networking and connectivity solutions. With leading intellectual property and deep system-level knowledge, Marvell semiconductor solutions continue to transform the enterprise, cloud, automotive, industrial, and consumer markets. For more information, visit <u>www.marvell.com</u>.

© 2021 Marvell. All rights reserved. The MARVELL mark and M logo are registered and/or common law trademarks of Marvell and/or its Affiliates in the US and/or other countries. This document may also contain other registered or common law trademarks of Marvell and/or its Affiliates.

Doc. No. TD-000965 Rev. 1 Revised: January 21, 2021