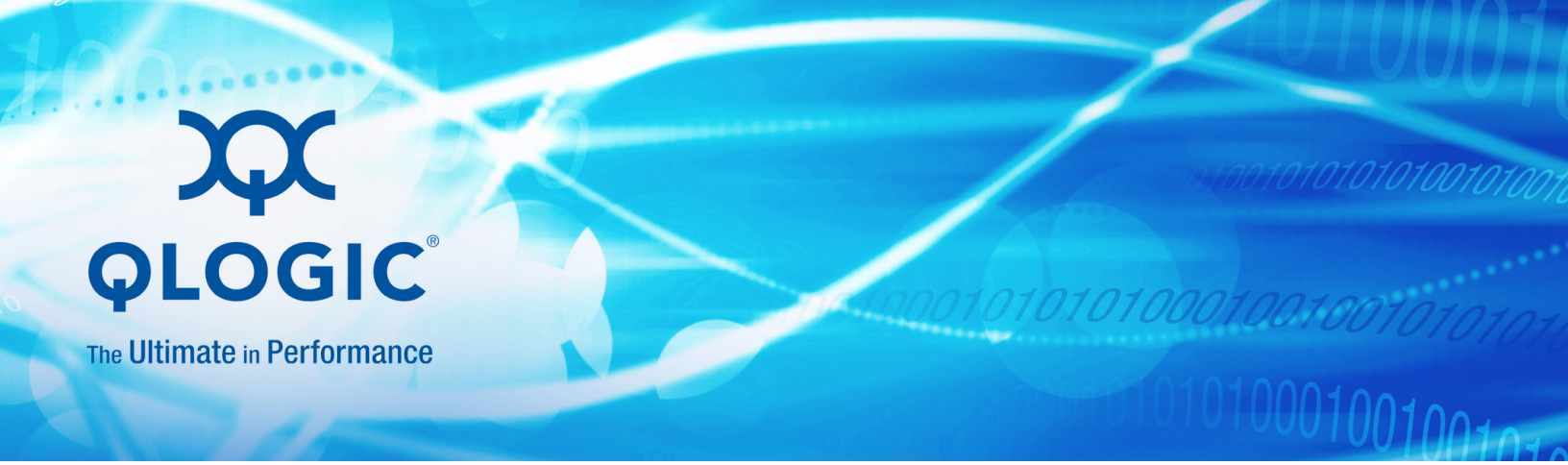

CIM Provider for BR-Series Adapters

Developer's Guide

Converged Network Adapters BR-1007, 1020, and 1741
Host Bus Adapters BR-804, 815, 825, 1867, and 1869
Fabric Adaper BR-1860

BR0054503-00 A

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Preface

Intended Audience

This guide is for OEM customers or Independent Software Vendor (ISV) partners wanting to manage QLogic BR-Series Adapters using their existing Common Information Model (CIM)-compliant third-party management software tools. Customers and ISV parnters can develop to the APIs in this document to integrate with CMPI-compliant CIM provider for managing QLogic BR-Series Adapters.

What Is in this Guide

This document is organized to help you find the information that you want as quickly and easily as possible.

The document contains the following components:

- Chapter 1, "References for Provider Development" provides a listing of references useful for provider development and describes the alert indication events.
- Chapter 2, "Management with CIM Provider for QLogic Adapters" describes the internal workings of the provider and the corresponding expected behavior of the provider operations.
- Chapter 3, "Log Mechanism" describes the logging mechanism which is used for debugging purposes and to keep track of the execution flow between the provider modules.
- Chapter 4, "Client-Server Communication" describes the tools available for testing the provider implementation.
- Chapter 5, "Service Location Protocol" describes how to run SLP on different platforms.
- Chapter 6, "Windows Management Instrumentation Support" describes the WMI-supported classes and methods.
- Chapter 7, "Frequently Asked Questions" provides answers to the most frequently asked questions.
- Appendix A, "Provider Schema MOF File" describes supported provider's schema in the CIM Provider.

- Appendix B, "Profile Classes and Properties" describes some of the requirements in classes and property levels for all the supported profiles.
- Appendix C, "Windows Management Instrumentation" describes the WMI architecture and WMI provider details.
- Appendix D, "CIM-XML Format for Executing the Methods" provides CIM-XML format for executing the methods.

Related Materials

For information about downloading documentation from the QLogic Web site, see "Downloading Updates" on page xviii.

Documentation Conventions

This guide uses the following documentation conventions:

- **NOTE** provides additional information.
- 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 underlined blue. For example:
  - Table 9-2 lists problems related to the user interface and remote agent.
  - See "Installation Checklist" on page 6.
  - For more information, visit www.qlogic.com.
- Text in **bold** font indicates user interface elements such as command names, keywords, operands and text to enter in the GUI or CLI. For example:
  - Click the **Start** button, point to **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.
  - Enter 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 *QLogic 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.
- Command line interface (CLI) command syntax conventions include the following:
  - < > (angle brackets) indicate a variable whose value you must specify. For example:
    - <serial_number>

    NOTE

    For CLI commands only, variable names are always indicated using angle brackets instead of *italics*.
  - [ ] (square brackets) indicate an optional parameter. For example:
    - `[<file_name>]` means specify a file name, or omit it to select the default file name.
  - | (vertical bar) indicates mutually exclusive options; select one option only. For example:
    - on|off
    - 1|2|3|4
  - ... (ellipsis) indicates that the preceding item may be repeated. For example:
    - `x...` means *one* or more instances of `x`.
    - `[x...]` means *zero* or more instances of `x`.

- ( ) (parentheses) and { } (braces) are used to avoid logical ambiguity. For example:
  - `a|b c` is ambiguous
    `{(a|b) c}` means `a` or `b`, followed by `c`
    `{a|(b c)}` means either `a,` or `b c`

License Agreements

Refer to the *QLogic Software End User License Agreement* for a complete listing of all license agreements affecting this product.

Technical Support

Customers should contact their authorized maintenance provider for technical support of their QLogic products. QLogic-direct customers may contact QLogic Technical Support; others will be redirected to their authorized maintenance provider. Visit the QLogic support Web site listed in Contact Information for the latest firmware and software updates.

For details about available service plans, or for information about renewing and extending your service, visit the Service Program Web page at http://www.qlogic.com/Support/Pages/ServicePrograms.aspx.

Downloading Updates

The QLogic Web site provides periodic updates to product firmware, software, and documentation.

To download firmware, software, and documentation:

1. Go to the QLogic Downloads and Documentation page: http://driverdownloads.qlogic.com.
2. Under QLogic Products, type the QLogic model name in the search box.
3. In the search results list, locate and select the firmware, software, or documentation for your product.
4. View the product details Web page to ensure that you have the correct firmware, software, or documentation. For additional information, click the **Read Me** and **Release Notes** icons under Support Files.
5. Click **Download Now**.
6. Save the file to your computer.
7. If you have downloaded firmware, software, drivers, or boot code, follow the installation instructions in the *Readme* file.

Instead of typing a model name in the search box, you can perform a guided search as follows:

1. Click the product type tab: **Adapters**, **Switches**, **Routers**, or **ASICs**.
2. Click the corresponding button to search by model or operating system.
3. Click an item in each selection column to define the search, and then click **Go**.
4. Locate the firmware, software, or document you need, and then click the icon to download or open the item.

Training

QLogic Global Training maintains a Web site at www.qlogictraining.com offering online and instructor-led training for all QLogic products. In addition, sales and technical professionals may obtain Associate and Specialist-level certifications to qualify for additional benefits from QLogic.

Contact Information

QLogic Technical Support for products under warranty is available during local standard working hours excluding QLogic Observed Holidays. For customers with extended service, consult your plan for available hours. For Support phone numbers, see the Contact Support link at support.qlogic.com.

Support Headquarters	QLogic Corporation 4601 Dean Lakes Blvd. Shakopee, MN 55379 USA
QLogic Web Site	www.qlogic.com
Technical Support Web Site	http://support.qlogic.com
Technical Support E-mail	support@qlogic.com
Technical Training E-mail	training@qlogic.com

Knowledge Database

The QLogic knowledge database is an extensive collection of QLogic product information that you can search for specific solutions. QLogic is constantly adding to the collection of information in the database to provide answers to your most urgent questions. Access the database from the QLogic Support Center: http://support.qlogic.com.

1 References for Provider Development

Overview

The QLogic Host Connectivity Manager (HCM) uses an interface through which it communicates and manages the BR-Series Adapters installed on a host system. However, the Common Information Model (CIM) Provider for QLogic BR-Series Adapters (CPQA) helps you to manage the BR-Series Adapters using any standard CIM-based management software.

A CIM Server receives CIM operation requests from a CIM client. The CIM Server decodes the requests, coordinates the processing of requests and the responses among the providers, and sends the CIM operations back to the CIM client. A CIM Provider is responsible for the actual processing of CIM operations on managed resources. The CIM Provider translates CIM-formatted requests into resource-specific operations and vice versa. The CIM Provider provides the mapping between the CIM interface and the resource-specific interface and contains the implementation for a set of CIM operations for a defined set of managed resources.

CIM Reference Documents

The following references provide information about the SMI Agent, to interact with the BR-Series Adapters:

- For information on MOF files, refer to “Using MOF Files as a Reference” on page 75.
- For information on *SNIA Storage Management Initiative Specification*, version 1.3.0, visit the following web pages.

  https://www.snia.org/tech_activities/standards/curr_standards/smi

  http://www.snia.org/tech_activities/publicreview/

Requirements

Supported Adapters

Table 1-1 lists the supported HBAs, CNAs, and Fabric Adapters.

Table 1-1. Supported HBAs and CNAs

Model	Max. Port Speed	Number of Ports
BR-804	8 Gbps	2
BR-815	8 Gbps	1
BR-825	8 Gbps	2
BR-1007	10 Gbps	2
BR-1020	10 Gbps	2
BR-1741	10 Gbps	2
BR-1860-1F	16 Gbps	1
BR-1860-2F	16 Gbps	2
BR-1860-1P	10 Gbps	1
BR-1860-2P	10 Gbps	2
BR-1860-1C	NA	1
BR-1860-2C	NA	2
BR-1867	16 Gbps	2
BR-1869	16 Gbps	4

Supported Drivers

CIM Provider can work with multiple versions of BR-Series Adapter driver versions in the following platforms:

- VMware
- Windows
- Linux

NOTE

Check the release note for supported driver versions.

Platform Requirements

This release supports OpenPegasus on the Microsoft Windows platform and OpenPegasus and Small Footprint CIM Broker (SFCB) in VMware and Linux (SUSE/Redhat). Table 1-2 lists various hardware architectures supported for the mentioned operating systems and Common Information Model Object Manager (CIMOM).

Table 1-2. Platform Requirements

Operating system	Intel x86	AMD	CIMOM
Windows			
Windows Server 2008 with SP2	32b, 64b	32b, 64b	OpenPegasus, WMI
Windows Server 2008 with SP1 and R2	64b	64b	OpenPegasus, WMI
Windows 7	32b, 64b	32b, 64b	OpenPegasus, WMI
Windows Small Business Server 2011	64b	64b	OpenPegasus, WMI
Windows Server 2012, Windows Server 2012 R2	64b	64b	OpenPegasus, WMI
Linux			
Red Hat Enterprise Linux (RHEL) 5.9, 5.10	32b, 64b	32b, 64b	OpenPegasus
Red Hat Enterprise Linux (RHEL) 6.4, 6.5	32b, 64b	32b, 64b	OpenPegasus
SUSE Linux Enterprise Server (SLES) 10.3, 10.4	32b, 64b	32b, 64b	OpenPegasus
SUSE Linux Enterprise Server (SLES) 11.1, 11.2, 11.3	32b, 64b	32b, 64b	OpenPegasus, SFCB (native)
VMware			
VMware ESXi 5.0, 5.1, and 5.5	64b	64b	SFCB (native)

NOTE

The current release supports **n** and **n-1** versions of OpenPegasus CIM Servers. For the Windows platform, support for Windows Management Instrumentation (WMI) is available through the BR-Series Adapter driver and the WMI provider is unavailable.

CIM Provider Installation Requirements

Refer to the *CIM Provider for QLogic BR-Series Adapters Installation Guide* for details on installation requirements.

OS-specific Feature

Table 1-3 lists the feature available in specific operating system (OS) environments.

Table 1-3. OS-Specific Features

Features	Linux	Windows	VMware
MSFC_XXX classes	No	Yes	No

NOTE

The MSFC_XXX classes are supported through the BR-Series Adapter FC HBA driver and the WMI provider is unavailable.

CIM Provider Acceptance Test

The CIM Provider Acceptance Test (CIMPAT) allows you to provide a measure of reliability and stability of the code. All the tests contained in the CIMPAT are meant to exercise and provide coverage of the CIM Provider intrinsic methods. The CIMPAT uses running tools to verify that the behavior of a CIM Provider does not introduce undesirable effects on the operation of the system as a whole.

Alert Indications

The CIM Provider supports the event notifications in the form of alert indications. Alert indications represent all the ports, adapters, and audit-specific events that are triggered from the adapter.

BROCADE_AlertIndication is the class used to model the alert indications. This class is extended from the base class **CIM_AlertIndication** with the addition of a property named **Category**.

The following tables illustrate the different alerts indicated in the CIM Provider for BR-Series Adapters. Each alert indication table has the properties defined in **BROCADE_AlertIndication**. Each indication is defined with appropriate values based on the nature of the indication.

The format of the query expected might differ across the indication clients. When the query is used as such it will not work properly with few clients. For example, the following is the format of the query to be used when using "**cimlisten**", an indication client utility available as part of SimpleWBEM distribution.

In OpenPegasus, **Select * from BROCADE_AlertIndication where OwningEntity=\"BROCADE\" and MessageID=\"BRCD3131080\"**

In SFCB, **Select * from CIM_ProcessIndication where OwningEntity=\"BROCADE\" and MessageID=\"BRCD3131080\"**

BFA_AEN_AUDIT_AUTH_ENABLE	Authentication enabled by user command.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_AUDIT_AUTH_ENABLE	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	2 ("Information")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	Authentication enabled by user command	
OtherAlertType	Optional	AUDIT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"

BFA_AEN_AUDIT_AUTH_ENABLE	Authentication enabled by user command.		
Property	**Requirement**	**Values Mapped**	**Remarks**
ProbableCauseDescription	Optional	Authentication enabled by user command	
EventID	Optional	BFA_AEN_AUDIT_AUTH_ENABLE	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD524289	
Message	Optional	Authentication enabled for base port: WWN = <pwwn>	Refer to MessageArguments property for more details on the values passed
MessageArguments	Optional	Array of values: 1 pwwn -> Port WWN	
OtherAlertingElement Format	Optional		
Trending	Optional		
RecommendedActions	Optional	No action required	
EventTime	Optional		
Category	Optional	AUDIT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD524289		

BFA_AEN_AUDIT_AUTH_DISABLE	Authentication disabled by user command.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_AUDIT_AUTH_DISABLE	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	

BFA_AEN_AUDIT_AUTH_DISABLE	Authentication disabled by user command.		
Property	**Requirement**	**Values Mapped**	**Remarks**
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	2 ("Information")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClass Name	Mandatory	BROCADE_ ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	Authentication disabled by user command	
OtherAlertType	Optional	AUDIT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	Authentication disabled by user command	
EventID	Optional	BFA_AEN_AUDIT_AUTH_ DISABLE	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD524290	
Message	Optional	Authentication disabled for base port: WWN = <pwwn>	Refer to Message Arguments property for more details on the values passed
MessageArguments	Optional	Array of values: 1 pwwn -> Port WWN	

BFA_AEN_AUDIT_AUTH_DISABLE	Authentication disabled by user command.		
Property	**Requirement**	**Values Mapped**	**Remarks**
OtherAlertingElement Format	Optional		
Trending	Optional		
RecommendedActions	Optional	No action required	
EventTime	Optional		
Category	Optional	AUDIT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD524290		

BFA_AEN_PORT_ONLINE	Base port logged into fabric.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_PORT_ONLINE	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 (“CIMObjectPath”)	
AlertType	Mandatory	1 (“Other”)	
PerceivedSeverity	Mandatory	2 (“Information”)	
ProbableCause	Mandatory	1 (“Other”)	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		

BFA_AEN_PORT_ ONLINE	Base port logged into fabric.		
Property	**Requirement**	**Values Mapped**	**Remarks**
Description	Optional	Base port logged into fabric	
OtherAlertType	Optional	PORT	Will be used when AlertType is “Other”
OtherSeverity	Optional		Will be used when PerceivedSeverity is “Other”
ProbableCauseDescription	Optional	Base port logged into fabric	
EventID	Optional	BFA_AEN_PORT_ ONLINE	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD131073	
Message	Optional	Base port online: WWN = <pwwn>	Refer to Message Arguments property for more details on the values passed
MessageArguments	Optional	Array of values: 1 pwwn -> Port WWN	
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	No action required	
EventTime	Optional		
Category	Optional	PORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD131073		

BFA_AEN_PORT_OFFLINE	Base port logged out of fabric.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_PORT_OFFLINE	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	3 ("Degraded/ Warning")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	Base port logged out of fabric	
OtherAlertType	Optional	PORT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	Base port logged out of fabric	
EventID	Optional	BFA_AEN_PORT_OFFLINE	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD131074	

BFA_AEN_PORT_OFFLINE	Base port logged out of fabric.		
Property	**Requirement**	**Values Mapped**	**Remarks**
Message	Optional	Base port offline: WWN = <pwwn>	Refer to MessageArguments property for more details on the values passed
MessageArguments	Optional	Array of values: 1 pwwn -> Port WWN	
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	No action required	
EventTime	Optional		
Category	Optional	PORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD131074		

BFA_AEN_PORT_SFP_INSERT	User plugged in a SFP.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_PORT_SFP_INSERT	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	2 ("Information")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details

BFA_AEN_PORT_SFP_INSERT	User plugged in a SFP.		
Property	**Requirement**	**Values Mapped**	**Remarks**
SystemCreationClassName	Mandatory	BROCADE_ ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	User plugged in a SFP	
OtherAlertType	Optional	PORT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when Perceived Severity is "Other"
ProbableCauseDescription	Optional	User plugged in a SFP	
EventID	Optional	BFA_AEN_PORT_ SFP_INSERT	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD131076	
Message	Optional	New SFP found: WWN/MAC = <pwwn>	Refer to Message Arguments property for more details on the values passed
MessageArguments	Optional	Array of values: 1 pwwn -> Port WWN/MAC	
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	No action required	
EventTime	Optional		
Category	Optional	PORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD131076		

BFA_AEN_PORT_SFP_REMOVE	SFP removed.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_PORT_SFP_REMOVE	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	3 ("Degraded/Warning")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	SFP removed	
OtherAlertType	Optional	PORT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	SFP removed	
EventID	Optional	BFA_AEN_PORT_SFP_REMOVE	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD131077	

BFA_AEN_PORT_SFP_REMOVE	SFP removed.		
Property	**Requirement**	**Values Mapped**	**Remarks**
Message	Optional	SFP removed: WWN/MAC = <pwwn>	Refer to Message Arguments property for more details on the values passed
MessageArguments	Optional	Array of values: 1 pwwn -> Port WWN/MAC	
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	Check whether SFP is inserted properly	
EventTime	Optional		
Category	Optional	PORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD131077		

BFA_AEN_PORT_SFP_ACCESS_ERROR	Cannot read SFP registers.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_PORT_SFP_ACCESS_ERROR	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	3 ("Degraded/Warning")	

BFA_AEN_PORT_SFP_ACCESS_ERROR	Cannot read SFP registers.		
Property	**Requirement**	**Values Mapped**	**Remarks**
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	Cannot read SFP registers	
OtherAlertType	Optional	PORT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	Cannot read SFP registers	
EventID	Optional	BFA_AEN_PORT_ SFP_ACCESS_ ERROR	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD131086	
Message	Optional	SFP access error: WWN/MAC = <pwwn>	Refer to MessageArguments property for more details on the values passed
MessageArguments	Optional	Array of values: 1 pwwn -> Port WWN/MAC	
OtherAlertingElementFormat	Optional		
Trending	Optional		

BFA_AEN_PORT_SFP_ACCESS_ERROR	Cannot read SFP registers.		
Property	**Requirement**	**Values Mapped**	**Remarks**
RecommendedActions	Optional	Recommend to replace the SFP	
EventTime	Optional		
Category	Optional	PORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD131086		

BFA_AEN_PORT_SFP_UNSUPPORT	SFP is not supported.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_PORT_SFP_UNSUPPORT	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	3 ("Degraded/Warning")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	SFP is not supported	
OtherAlertType	Optional	PORT	Will be used when AlertType is "Other"

BFA_AEN_PORT_SFP_UNSUPPORT	SFP is not supported.		
Property	**Requirement**	**Values Mapped**	**Remarks**
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	SFP is not supported	
EventID	Optional	BFA_AEN_PORT_SFP_UNSUPPORT	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD131087	
Message	Optional	Unsupported SFP found: WWN/MAC = <pwwn>	Refer to MessageArguments property for more details on the values passed
MessageArguments	Optional	Array of values: 1 pwwn -> Port WWN/MAC	
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	Recommend to use supported SFP	
EventTime	Optional		
Category	Optional	PORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD131087		

BFA_AEN_PORT_SFP_POM	A POM is a Pluggable Optical Module. It can be inserted into the Small Form-Factor Pluggable (SFP) socket. Event is triggered if there is a change of state value against threshold of operational characteristics (temperature, voltage and rx/tx power) of SFP.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_PORT_SFP_POM	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	3 ("Degraded/Warning")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	A POM is a Pluggable Optical Module that can be inserted into the Small Form-Factor Pluggable socket. Event is triggered if there is a change of current value against threshold of operational characteristics (temperature, voltage and rx/tx power) of SFP	
OtherAlertType	Optional	PORT	Will be used when AlertType is "Other"

BFA_AEN_PORT_SFP_POM	A POM is a Pluggable Optical Module. It can be inserted into the Small Form-Factor Pluggable (SFP) socket. Event is triggered if there is a change of state value against threshold of operational characteristics (temperature, voltage and rx/tx power) of SFP.		
Property	**Requirement**	**Values Mapped**	**Remarks**
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	A POM is a Pluggable Optical Module that can be inserted into the Small Form-Factor Pluggable socket. Event is triggered if there is a change of current value against threshold of operational characteristics (temperature, voltage and rx/tx power) of SFP	There is no MaxLen qualifier for this property.
EventID	Optional	BFA_AEN_PORT_SFP_POM	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD131078	
Message	Optional	SFP POM level to <pom_val>: WWN/MAC = <pwwn>	Refer to MessageArguments property for more details on the values passed
MessageArguments	Optional	Array of values for: 1 pom_val -> Aggregated SFP temperature, voltage, rx and tx power level (Green(1)/Amber(2)/Red(3)) 2 pwwn -> Port WWN/MAC	
OtherAlertingElement Format	Optional		
Trending	Optional		

BFA_AEN_PORT_SFP_POM	A POM is a Pluggable Optical Module. It can be inserted into the Small Form-Factor Pluggable (SFP) socket. Event is triggered if there is a change of state value against threshold of operational characteristics (temperature, voltage and rx/tx power) of SFP.		
Property	**Requirement**	**Values Mapped**	**Remarks**
RecommendedActions	Optional	If POM level is not normal, please check the SFP	
EventTime	Optional		
Category	Optional	PORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD131078		

BFA_AEN_PORT_ENABLE	Base port enabled by user command.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_PORT_ENABLE	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	2 ("Information")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		

BFA_AEN_PORT_ENABLE	Base port enabled by user command.		
Property	**Requirement**	**Values Mapped**	**Remarks**
Description	Optional	Base port enabled by user command	
OtherAlertType	Optional	PORT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	Base port enabled by user command	
EventID	Optional	BFA_AEN_PORT_ENABLE	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD131079	
Message	Optional	Base port enabled: WWN = <pwwn>	Refer to MessageArguments property for more details on the values passed
MessageArguments	Optional	Array of values for: 1 pwwn -> Port WWN	
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	No action required	
EventTime	Optional		
Category	Optional	PORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD131079		

BFA_AEN_PORT_DISABLE	Base port disabled by user command.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_PORT_DISABLE	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	2 ("Information")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	Base port disabled by user command	
OtherAlertType	Optional	PORT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	Base port disabled by user command	
EventID	Optional	BFA_AEN_PORT_DISABLE	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD131080	

BFA_AEN_PORT_DISABLE	Base port disabled by user command.		
Property	**Requirement**	**Values Mapped**	**Remarks**
Message	Optional	Base port disabled: WWN = <pwwn>	Refer to MessageArguments property for more details on the values passed
MessageArguments	Optional	Array of values for: 1 pwwn -> Port WWN	
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	No action required	
EventTime	Optional		
Category	Optional	PORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD131080		

BFA_AEN_PORT_AUTH_ON	FCSP Authentication successful.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_PORT_AUTH_ON	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	2 ("Information")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details

BFA_AEN_PORT_AUTH_ON	FCSP Authentication successful.		
Property	**Requirement**	**Values Mapped**	**Remarks**
SystemCreationClassName	Mandatory	BROCADE_ ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	Authentication successful	
OtherAlertType	Optional	PORT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	Authentication successful	
EventID	Optional	BFA_AEN_PORT_ AUTH_ON	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD131081	
Message	Optional	Authentication successful for base port: WWN = <pwwn>	Refer to MessageArguments property for more details on the values passed
MessageArguments	Optional	Array of values for: 1 pwwn -> Port WWN	
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	No action required	
EventTime	Optional		
Category	Optional	PORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD131081		

BFA_AEN_PORT_AUTH_OFF	FCSP Authentication failure.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_PORT_AUTH_OFF	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	6 ("Major")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	Authentication failure	
OtherAlertType	Optional	PORT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	Authentication failure	
EventID	Optional	BFA_AEN_PORT_AUTH_OFF	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD131082	

BFA_AEN_PORT_AUTH_OFF	FCSP Authentication failure.		
Property	**Requirement**	**Values Mapped**	**Remarks**
Message	Optional	Authentication unsuccessful for base port: WWN = <pwwn>	Refer to MessageArguments property for more details on the values passed
MessageArguments	Optional	Array of values for: 1 pwwn -> Port WWN	
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	Mismatch of FC-SP configuration between switch and HBA. Also, check the credentials	
EventTime	Optional		
Category	Optional	PORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD131082		

BFA_AEN_PORT_DISCONNECT	Base port lost connection with fabric.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_PORT_DISCONNECT	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	6 ("Major")	

BFA_AEN_PORT_DISCONNECT	Base port lost connection with fabric.		
Property	**Requirement**	**Values Mapped**	**Remarks**
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	Base port lost connection with fabric	
OtherAlertType	Optional	PORT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	Base port lost connection with fabric	
EventID	Optional	BFA_AEN_PORT_ DISCONNECT	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD131083	
Message	Optional	Base port (WWN = <pwwn>) lost fabric connectivity	Refer to MessageArguments property for more details on the values passed
MessageArguments	Optional	Array of values for: 1 pwwn -> Port WWN	
OtherAlertingElementFormat	Optional		

BFA_AEN_PORT_DISCONNECT	Base port lost connection with fabric.		
Property	**Requirement**	**Values Mapped**	**Remarks**
Trending	Optional		
RecommendedActions	Optional	Check switch and HBA configuration. Also, check SFP and cable connection	
EventTime	Optional		
Category	Optional	PORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD131083		

BFA_AEN_PORT_QOS_NEG	QOS negotiation failed.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_PORT_QOS_NEG	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	3 ("Degraded/Warning")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ComputerSystem	
SystemName	Mandatory	IP or name of the host	

BFA_AEN_PORT_QOS_NEG	QOS negotiation failed.		
Property	**Requirement**	**Values Mapped**	**Remarks**
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	QOS negotiation failed	
OtherAlertType	Optional	PORT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	QOS negotiation failed	
EventID	Optional	BFA_AEN_PORT_QOS_NEG	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD131084	
Message	Optional	QOS negotiation failed for base port: WWN = <pwwn>	Refer to MessageArguments property for more details on the values passed
MessageArguments	Optional	Array of values for: 1 pwwn -> Port WWN	
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	Check switch and HBA configuration	
EventTime	Optional		
Category	Optional	PORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD131084		

BFA_AEN_PORT_FABRIC_NAME_CHANGE	Fabric WWN changed.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_PORT_FABRIC_NAME_CHANGE	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_FCPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	3 ("Degraded/Warning")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	Fabric WWN changed	
OtherAlertType	Optional	PORT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	Fabric WWN changed	
EventID	Optional	BFA_AEN_PORT_FABRIC_NAME_CHANGE	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD131085	

BFA_AEN_PORT_FABRIC_NAME_CHANGE	Fabric WWN changed.		
Property	**Requirement**	**Values Mapped**	**Remarks**
Message	Optional	Base port: WWN = <pwwn> Fabric WWN = <fwwn>	Refer to MessageArguments property for more details on the values passed
MessageArguments	Optional	Array of values for: 1 pwwn -> Port WWN 2 fwwn -> Fabric WWN	
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	Check switch and HBA configuration	
EventTime	Optional		
Category	Optional	PORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD131085		

BFA_AEN_ETHPORT_LINKUP	Base port Ethernet linkup.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_ETHPORT_LINKUP	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_Ethernet Port	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	2 ("INFO")	

BFA_AEN_ETHPORT_LINKUP	Base port Ethernet linkup.		
Property	**Requirement**	**Values Mapped**	**Remarks**
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	Base port Ethernet linkup	
OtherAlertType	Optional	ETHPORT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	Base port Ethernet link is up	
EventID	Optional	BFA_AEN_ ETHPORT_LINKUP	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD655361	
Message	Optional	Base port Ethernet linkup: mac = <mac>, CEE status = <cee_status>	Refer to MessageArguments property for more details on the values passed

BFA_AEN_ETHPORT_LINKUP	Base port Ethernet linkup.		
Property	**Requirement**	**Values Mapped**	**Remarks**
MessageArguments	Optional	Array of values: 1 mac -> Port MAC 2 cee_status -> CEE Link status	The CEE status field indicates the status of the CEE Link when the Ethernet Link comes up. It can either be "Linkdown" or "Linkup" depending on the status of the Ethernet Link. If the CEE status value is "Linkdown", the Ethernet port may or may not get the status of “Linkup.” If the status value is “Linkup” in the CEE port, the status depends on the connected port on the other side, which may or may not be CEE-capable or it may take a longer time to respond.
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	No action required	
EventTime	Optional		
Category	Optional	ETHPORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD655361		

BFA_AEN_ETHPORT_LINKDOWN	Base port Ethernet linkdown.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_ETHPORT_LINKDOWN	

BFA_AEN_ETHPORT_LINKDOWN	Base port Ethernet linkdown.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_EthernetPort	
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	1 ("Other")	
PerceivedSeverity	Mandatory	6 ("Critical")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	Base port Ethernet linkdown	
OtherAlertType	Optional	ETHPORT	Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	Base port Ethernet link is down	
EventID	Optional	BFA_AEN_ETHPORT_ LINKDOWN	
OwningEntity	Optional	BROCADE	
MessageID	Optional	BRCD655362	
Message	Optional	Base port Ethernet linkdown: mac = <mac>	Refer to MessageArguments property for more details on the values passed

BFA_AEN_ETHPORT_LINKDOWN	Base port Ethernet linkdown.		
Property	**Requirement**	**Values Mapped**	**Remarks**
MessageArguments	Optional	Array of values: 1 mac -> Port MAC	
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	No action required	
EventTime	Optional		
Category	Optional	ETHPORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=BROCADE and MessageID=BRCD655362		

BFA_AEN_ETHPORT_ENABLE	Base port Ethernet interface enabled.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_ETHPORT_ENABLE	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_EthernetPort	Object path will be set
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	2 ("Communications Alert")	
PerceivedSeverity	Mandatory	2 ("Information")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ComputerSystem	

BFA_AEN_ETHPORT_ENABLE	Base port Ethernet interface enabled.		
Property	**Requirement**	**Values Mapped**	**Remarks**
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	Base port Ethernet interface enabled	
OtherAlertType	Optional		Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	Base port Ethernet interface is enabled	
EventID	Optional	BFA_AEN_ETHPORT_ENABLE	
OwningEntity	Optional	DMTF	
MessageID	Optional	PLAT260	
Message	Optional	The network port <arg1> has been enabled	Refer to MessageArguments property for more details on the values passed
MessageArguments	Optional	1 arg1 -> CIM_NetworkPort.ElementName 2 arg3 -> Object path to ComputerSystem	
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	No action required	
EventTime	Optional		
Category	Optional	ETHPORT	

BFA_AEN_ETHPORT_ENABLE	Base port Ethernet interface enabled.		
Property	**Requirement**	**Values Mapped**	**Remarks**
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=DMTF and MessageID=PLAT260		

BFA_AEN_ETHPORT_DISABLE	Base port Ethernet interface disabled.		
Property	**Requirement**	**Values Mapped**	**Remarks**
IndicationIdentifier	Mandatory	BFA_AEN_ETHPORT_DISABLE	
IndicationTime	Mandatory		
AlertingManagedElement	Mandatory	BROCADE_Ethernet Port	Object path will be set
AlertingElementFormat	Mandatory	2 ("CIMObjectPath")	
AlertType	Mandatory	2 ("Communications Alert")	
PerceivedSeverity	Mandatory	3 ("Degraded/ Warning")	
ProbableCause	Mandatory	1 ("Other")	Refer to ProbableCauseDescription for more details
SystemCreationClassName	Mandatory	BROCADE_ ComputerSystem	
SystemName	Mandatory	IP or name of the host	
ProviderName	Mandatory	brcdprovider	
CorrelatedIndications	Optional		
Description	Optional	Base port Ethernet interface disabled	

BFA_AEN_ETHPORT_DISABLE	Base port Ethernet interface disabled.		
Property	**Requirement**	**Values Mapped**	**Remarks**
OtherAlertType	Optional		Will be used when AlertType is "Other"
OtherSeverity	Optional		Will be used when PerceivedSeverity is "Other"
ProbableCauseDescription	Optional	Base port Ethernet interface is disabled	
EventID	Optional	BFA_AEN_ETHPORT_DISABLE	
OwningEntity	Optional	DMTF	
MessageID	Optional	PLAT261	
Message	Optional	The network port <arg1> has been disabled	Refer to MessageArguments property for more details on the values passed
MessageArguments	Optional	Array of values for: 1 arg1 -> CIM_NetworkPort. ElementName 2 arg3 -> Object Path to ComputerSystem	
OtherAlertingElementFormat	Optional		
Trending	Optional		
RecommendedActions	Optional	No action required	
EventTime	Optional		
Category	Optional	ETHPORT	
Query	Select * FROM CIM_AlertIndication WHERE OwningEntity=DMTF and MessageID=PLAT261		

NOTE

The following alert indications will not be supported for the mezzanine card because there is no optical module (SFP) for mezzanine cards:

- SFP Insert (BFA_PORT_AEN_SFP_INSERT)
- SFP Remove (BFA_PORT_AEN_SFP_REMOVE)
- SFP POM (BFA_PORT_AEN_SFP_POM)
- SFP Access Error (BFA_PORT_AEN_SFP_ACCESS_ERROR)
- SFP Unsupported (BFA_PORT_AEN_SFP_UNSUPPORT)

2 Management with CIM Provider for QLogic Adapters

Supported CIM Operations

Table 2-1 provides the list of CIM operations supported by the Common Information Model (CIM) Provider for QLogic BR-Series Adapters (CPQA).

Table 2-1. Supported CIM Operations

CIM Operations	Supported by CIM Provider
GetInstance	Yes
EnumerateInstances	Yes
EnumerateInstanceNames	Yes
Associators	Yes
AssociatorNames	Yes
References	Yes
ReferenceNames	Yes
InvokeMethod	Yes

NOTE

Operations such as **GetClass**, **GetProperty,** and so on are supported by the CIM Server through the Basic Read Functional Profile Specification.

EnumerateInstances

Following is the sample Client code for retrieving **EnumerateInstances** operations.

```
#include <Pegasus/Common/Config.h>
#include <Pegasus/Client/CIMClient.h>

PEGASUS_USING_PEGASUS;
PEGASUS_USING_STD;

int main(int argc, char** argv)
{
    const CIMNamespaceName NAMESPACE = CIMNamespaceName("root/brocade");
    const CIMName CLASSNAME = CIMName("BROCADE_ComputerSystem");
try
    {
        Boolean                 deepInheritance = true;
        Boolean                 localOnly = true;
        Boolean                 includeQualifiers = false;
        Boolean                 includeClassOrigin = false;
        Array<CIMInstance>      cimInstances;
        CIMClient               client;

        //
        // The connectLocal Client API creates a connection to the server for
        // local clients. The connection is automatically authenticated
        // for the current user. The connect Client API, can be used to create
        // an HTTP connection with the server defined by the URL in address.
        // User name and Password information can be passed
        // using the connect Client API.
        //
        client.connectLocal();

        //
        // Enumerate Instances.
        //
        cimInstances = client.enumerateInstances(
                                NAMESPACE,
                                CLASSNAME,
                                deepInheritance,
                                localOnly,
                                includeQualifiers,
                                includeClassOrigin);

        cout << "Total Number of Instances: " << cimInstances.size() << endl;

        for (Uint32 i = 0; i < cimInstances.size(); i++)
 {
```

```
            cout << cimInstances[i].getPath().toString() << endl;
        }
 }
    catch (Exception& e)
    {
        cerr << "Error: " << e.getMessage() << endl;
        exit(1);
    }
 return 0;
}
```

Associators

Following is the sample Client code for **Associators** operations.

```
#include <Pegasus/Common/Config.h>
#include <Pegasus/Client/CIMClient.h>

PEGASUS_USING_PEGASUS;

PEGASUS_USING_STD;

int main(int argc, char** argv)
{
    const CIMNamespaceName NAMESPACE = CIMNamespaceName("root/brocade");
    const CIMName CLASSNAME = CIMName("BROCADE_ComputerSystem");
    const CIMName ASSOCIATIONCLASS=
         CIMName("BROCADE_ObjectManagerHostedService");

    try
    {
        Boolean                 deepInheritance = true;
        Boolean                 localOnly = true;
        Boolean                 includeQualifiers = false;
        Boolean                 includeClassOrigin = false;
        Array<CIMInstance>      cimInstances;
        CIMClient               client;
        Array<CIMObjectPath> compsysRef;
Array<CIMObjectPath> associcationRef;

//
// The connectLocal Client API creates a connection to the server for
// local clients. The connection is automatically
// authenticated for the current user. The connect Client API, can
// be used to create an HTTP connection with the server defined by
// the URL in address.
// User name and Password information can be passed using the
// connect Client API.
//
```

```
client.connectLocal();

//
// Enumerate Instance Names.
//
compsysRef = client.enumerateInstanceNames(NAMESPACE, CLASSNAME);
associcationRef = client.enumerateInstanceNames(NAMESPACE, ASSOCIATIONCLASS);


Array<CIMObject> resultObjects;
CIMName resultClass;
String resultRole;
String role;

Uint32 numCompSysInstances = compsysRef.size();
Uint32 numAssociationInstances = associcationRef.size();

 //
 // Getting the Associator instances
 //
  resultObjects = client.associators(NAMESPACE, ASSOCIATIONCLASS,
  compsysRef[i], resultClass, role, resultRole);

for (Uint32 i = 0; i < resultObjects.size(); i++)
{
cout << resultObjects[i].getPath().toString() << endl;
}
}
    catch (Exception& e)
    {
        cerr << "Error: " << e.getMessage() << endl;
        exit(1);
    }
 return 0;}
```

Supported CIM Protocols

The supported communication protocol between the CIM client and the CIM Server in order to access the provider is CIM-XML over HTTP and HTTPS.

Management Profiles and Subprofiles

The class diagrams consist of classes with the prefix BROCADE, meaning that they are extended from the standard CIM classes. The standard CIM classes have been extended to make it easier for a future set of requirements to support the Brocade-specific functionalities. It is recommended not to use or work with the standard CIM classes directly.

The following profiles and subprofiles are supported by the CPQA:

- Server
- Profile Registration
- FC HBA
- FC Initiator Ports
- Host Discovered Resources (partial support)
- Diagnostics
- Software Update
- Software Inventory
- Ethernet Port
- Access Point
- Physical Asset
- Host LAN Network Port
- Storage HBA
- FCoE Initiator Ports

Server Profile

The provider supports the SNIA Server profile that defines the model and functions of a CIM Server hosting the provider. Table 2-2 lists the subprofiles of the Server profile.

Table 2-2. Subprofiles of Server Profile

Profile	Requirement	Supported
Profile Registration profile	Mandatory	Yes
Indications	Optional	No
Object Manager Adapter	Optional	No

Figure 2-1 shows the data model with the classes and properties that are supported to conform to the Server profile.

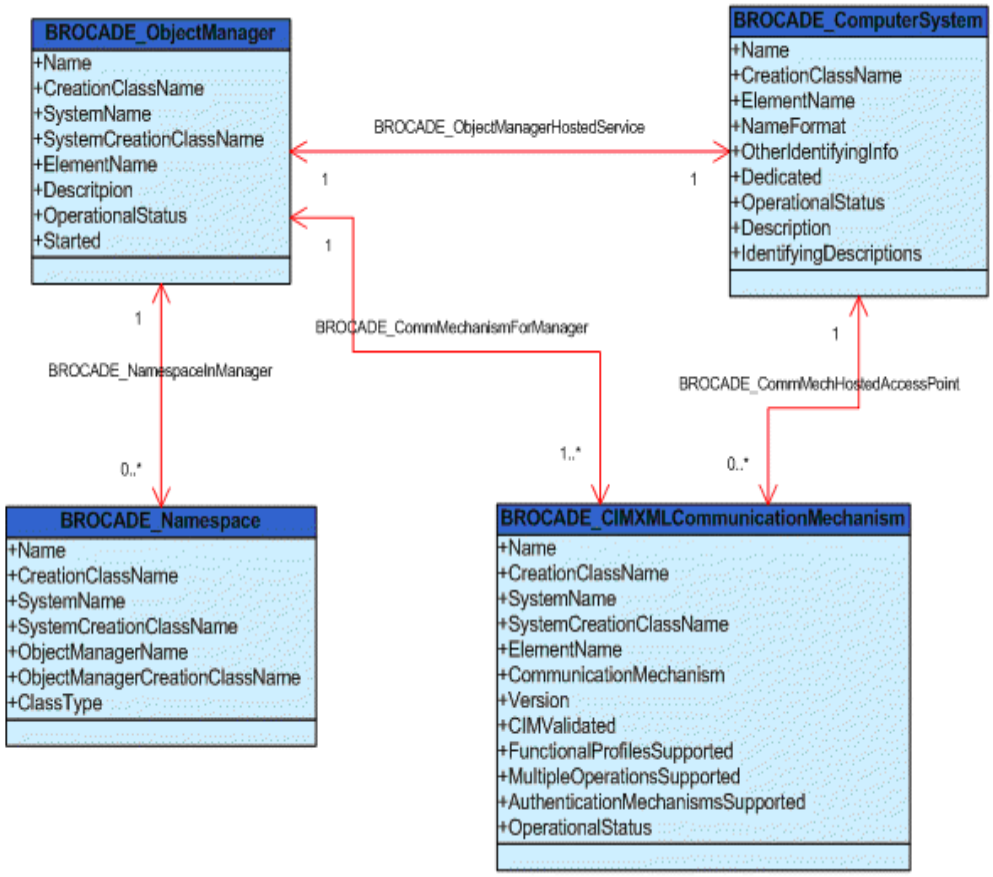

Figure 2-1. Server Profile Data Model

Profile Registration Profile

The Profile Registration profile is a mandatory model for a CIM Server. The profiles registered in the object manager, and the associations between the registration classes and the domain classes are defined as a part of different profiles that are implemented.

FC HBA Profile

The provider supports the SNIA FC HBA profile that defines the model and functions of a Fibre Channel Host Bus Adapter (FC HBA). Table 2-3 lists the subprofiles of the FC HBA profile.

Table 2-3. Subprofiles of FC HBA Profile

Profile	Requirement	Supported
FC Initiator Ports	Mandatory	Yes
Software Installation Service	Optional	No
Host LAN Network Port	Mandatory	Yes
Physical Asset	Mandatory	Yes

Profile Registration Model

The SNIA Profile Registration Profile model is followed to advertise the implementation of an FC HBA profile and FC Initiator ports subprofile. Figure 2-2 shows the data model with the classes and properties that are supported for correspondence.

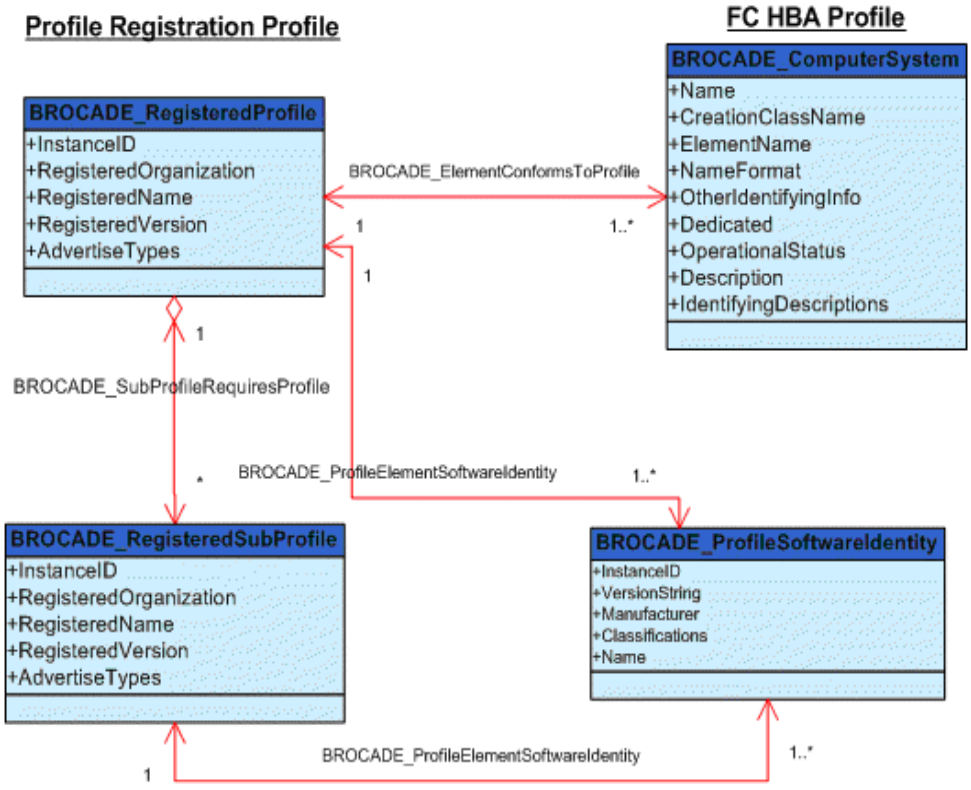

Figure 2-2. Profile Registration Model for FC HBA Profile

NOTE

For every supported subprofile, an instance of **BROCADE_RegisteredSubProfile** is created and associated to the instance of **BROCADE_RegisteredProfile** representing the profile to which the subprofile is associated.

Data Model

Figure 2-3 shows the data model with the classes and properties that are supported to conform to the FC HBA profile. Only the mandatory classes and properties are considered for this release.

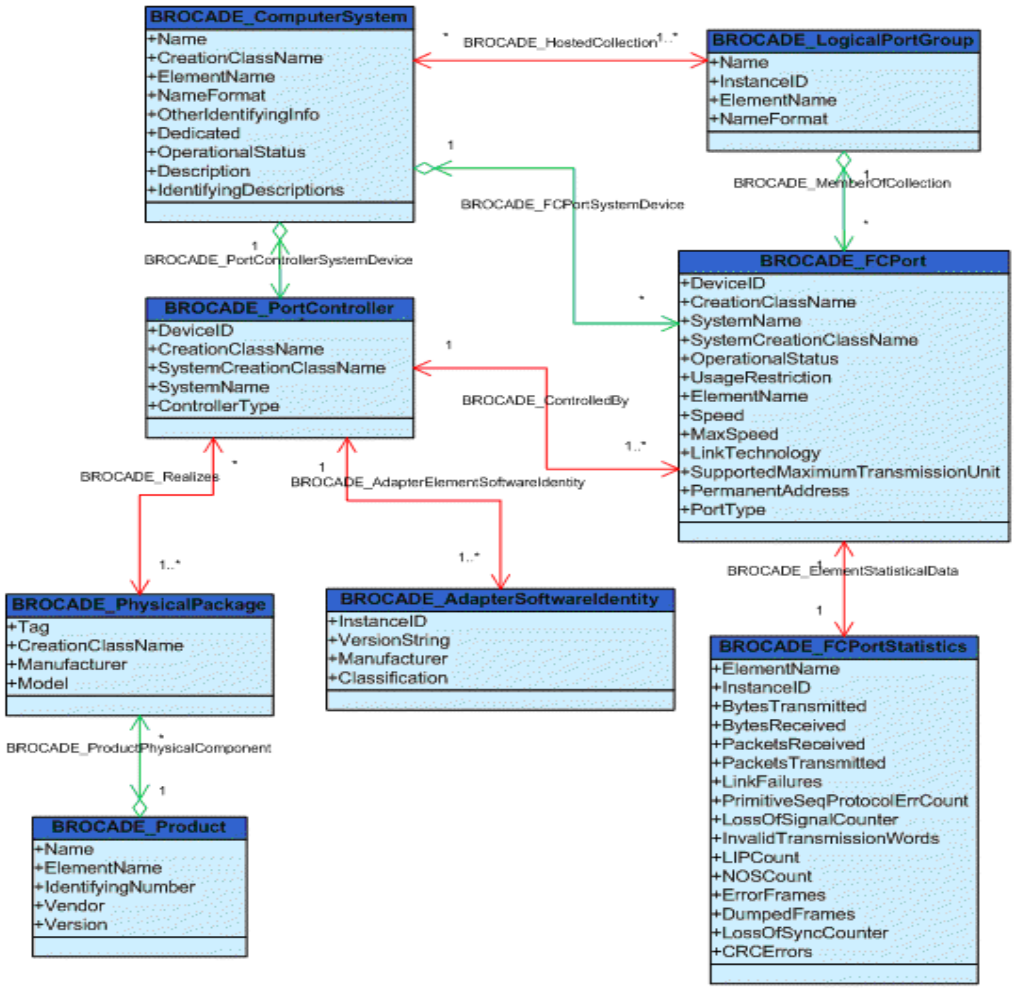

Figure 2-3. FC HBA Profile Data Mode

NOTE

The statistics counters present in **BROCADE_FCPortStatistics** instances for the FCoE port will include Ethernet traffic data.

FRU Number Support for Adapters

The field-replaceable unit (FRU) number is supported for all the BR-Series Adapters. This will be supported by an additional field or property added as an extension to the **PhysicalPackage** class. Figure 2-4 represents the FRU number support for BR-Series Adapters. For more information, refer to Appendix A, "Provider Schema MOF File".

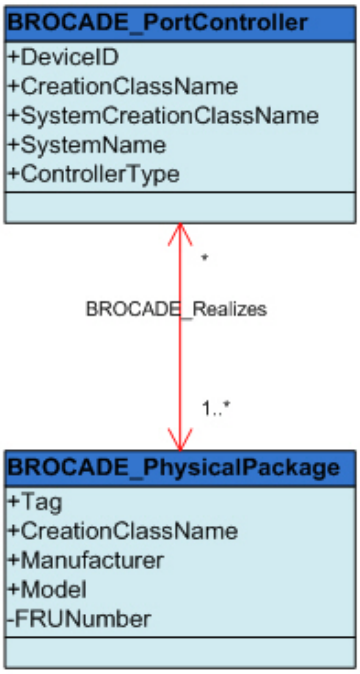

Figure 2-4. PhysicalPackage for FRU Number Support

NOTE

The FRU number property will not have any value if there is no VPD flashed on to the adapter or if the data is corrupted.

Universally Unique Identifier

The Universally Unique Identifier (UUID) is 32 hex digits or 16 bytes or 128 bits long. In case of the CNA, the last 12 digits will be the MAC address. For the HBA, the last 16 digits will be the Node WWN. The UUID consists of 32 hexadecimal digits displayed in 5 groups separated by hyphens.

Example

10000000-0000-0000-0000-00051E8CC6F6

NOTE

The UUID, which is a part of VPD is returned as it is.

LED Blink (Beaconing)

The Light Emitting Diode (LED) blink is supported for the ports present in the BR-Series Adapters. The LED blink is supported by implementing the **AlarmDevice** and **AssociatedAlarmDevice** optional classes as part of the FC HBA profile. The extrinsic method **SetAlarmState** of the **AlarmDevice** class is supported. You must invoke the extrinsic method to execute port beaconing operation with the appropriate values for input parameters.

The LED blink is applicable only for stand-up CNA and HBA cards. This method is not applicable to mezzanine cards because there is no instance of BROCADE_AlarmDevice available for a mezzanine card. Table 2-4 lists the parameter of LED blink.

Table 2-4. LED Blink Parameter

Parameter	IN/OUT	Supported values	Description
RequestedAlarmState	IN	3 (Alternating)	This value turns on beaconing for an infinite time, which is the default behavior. There is no option to change this because there is no additional parameter supported in the CIM.
		1	This value will turn off beaconing.

The return codes are as follows:

- **0** - Success (When the operation is executed successfully)
- **2** - Failed (When trying to turn on or off when the beacon state is already set to the requested state that is on or off and during any unexpected failures or for invalid input)

Figure 2-5 represents the data model having the classes (from the FC HBA profile) required to support LED blink.

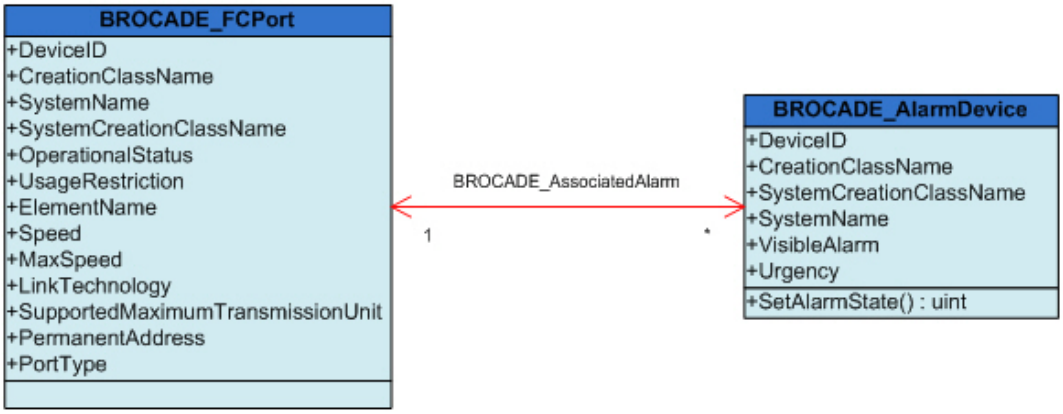

Figure 2-5. LED Blink

FC Initiator Ports Subprofile

The FC Initiator Ports subprofile models the behavior of a Fibre Channel port supporting FCP (SCSI command protocol). This is a mandatory model for the FC HBA profile and is supported for this release.

Figure 2-6 shows the data model with the classes and properties that are supported to conform to this subprofile. Scoping class methodology is used in this model.

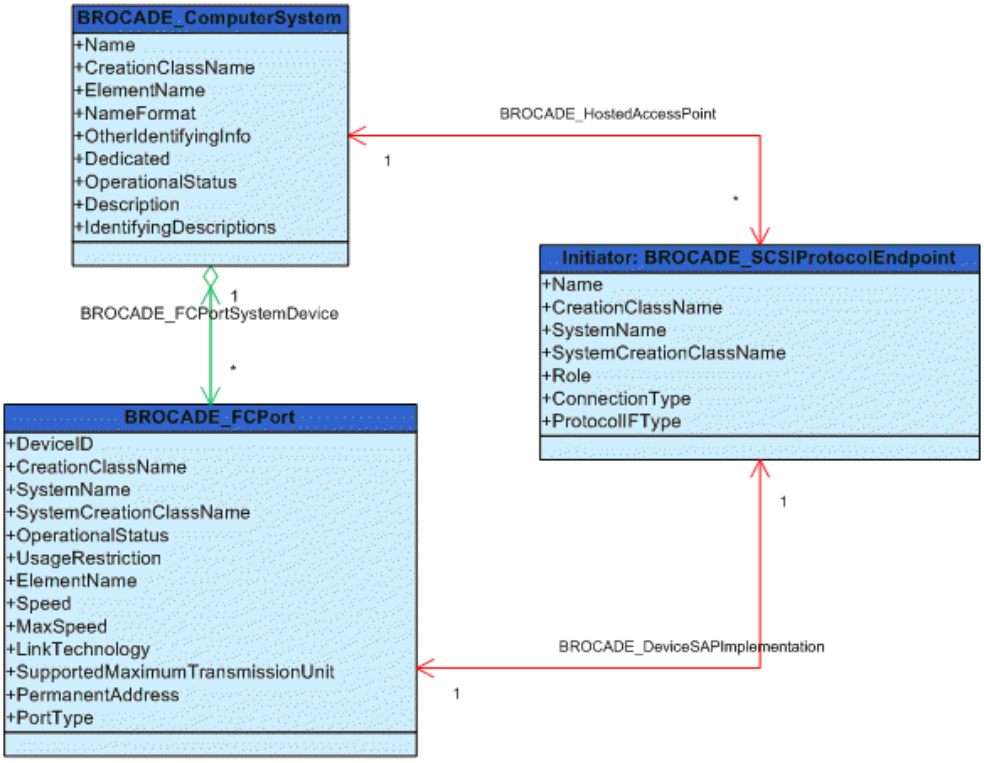

Figure 2-6. FC Initiator Ports Subprofile Model

SCSIInitiatorTargetLogicalUnitPath Class

The FC Initiator Ports subprofile is enhanced to include the class **SCSIInitiatorTargetLogicalUnitPath**. This class is an association modeling the path between a SCSI initiator, target, and a logical unit. Each permutation of initiator and target ProtocolEndpoints and logical units is considered as a separate path.

Data Model

Figure 2-7 shows the data model with the classes and properties that will be supported as part of the FC initiator Ports subprofile.

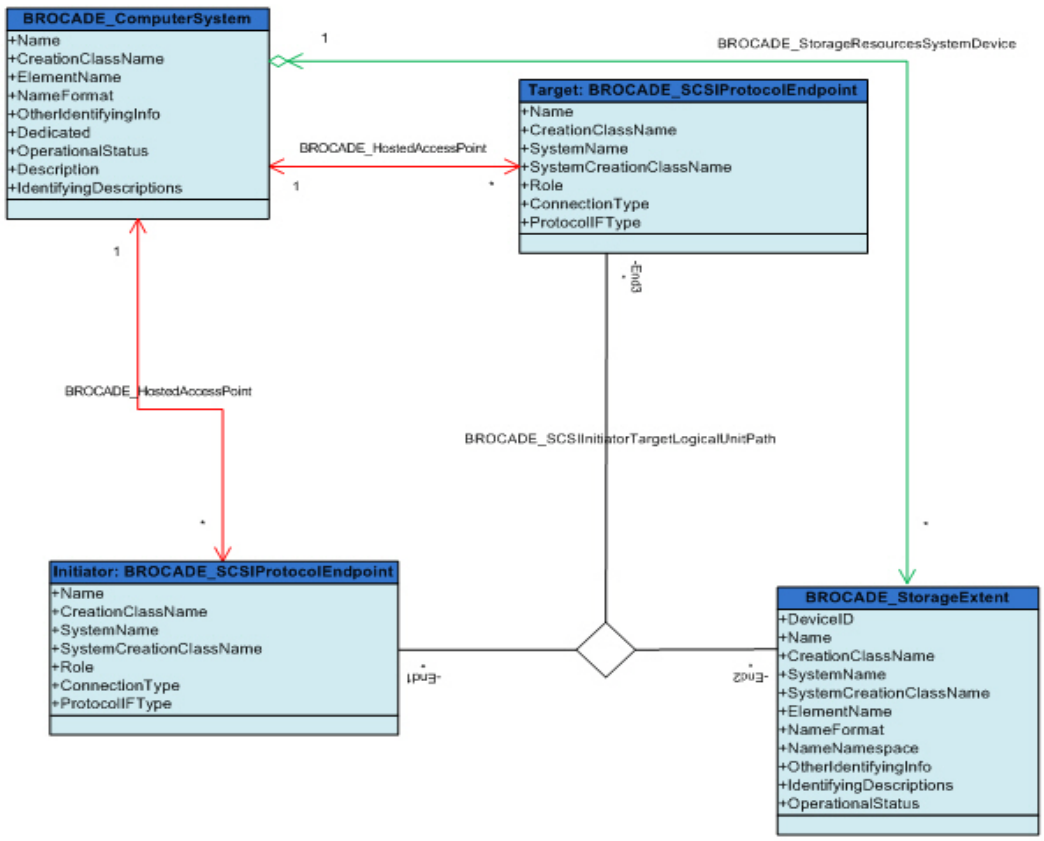

Figure 2-7. SCSIInitiatorTargetLogicalUnitPath Data Mode

NOTE

The previous association is also applicable for the **BROCADE_TapeDrive** class in place of **BROCADE_StorageExtent**.

Host Discovered Resources Profile

The Host Discovered Resources (HDR) profile allows a CIM client application to discover the storage hardware resource attached to a host system. It discovers the logical storage resource available through the OS, and the relation between the hardware and logical resources. The hardware resources include host adapters and storage devices. The logical resources include the logical and physical device. Table 2-5 lists the subprofiles of the HDR profile.

Table 2-5. Subprofiles of HDR Profile

Profile	Requirement	Supported
SCSI Multipath Management	Optional	No
Single-Byte Multipath Management	Optional	No
Disk Partition	Optional	No

Profile Registration Model

The profile registration models to advertise the implementation of the HDR profile. Figure 2-8 shows the class diagram with the objects and properties for HDR profile registration.

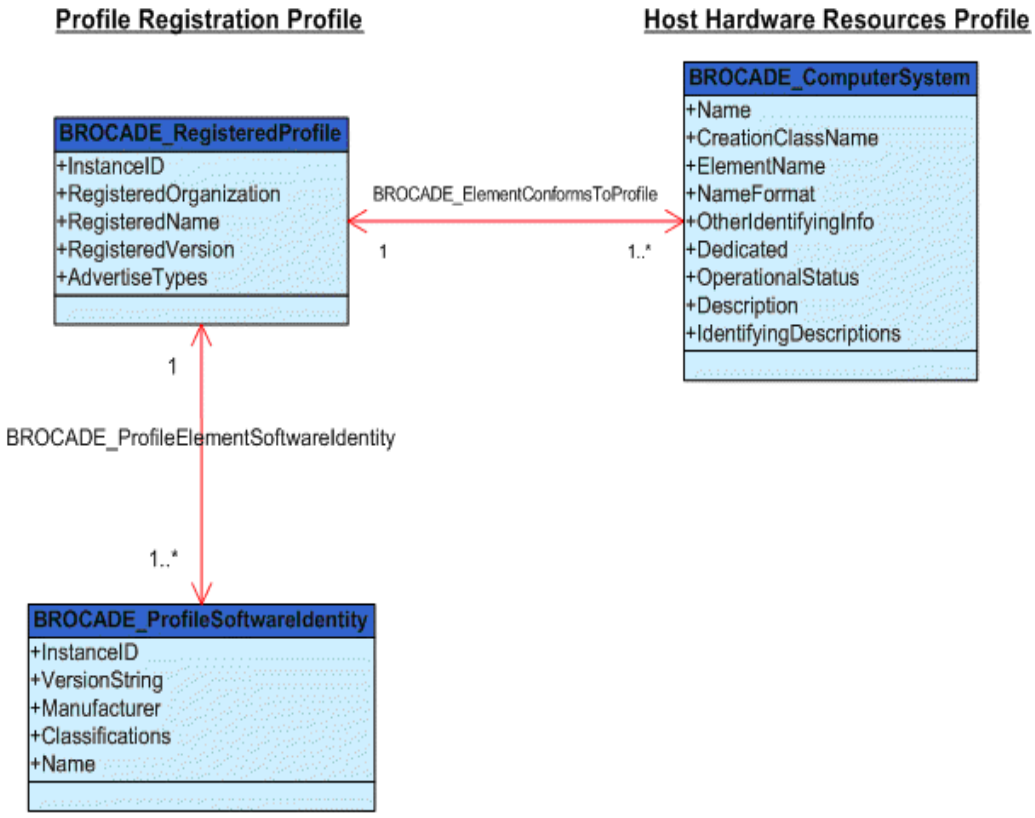

Figure 2-8. Profile Registration Model for HDR Profile

Data Model

Figure 2-9 is the data model with the classes and properties that are supported to conform to this HDR profile. Only the mandatory classes and properties are considered for this release.

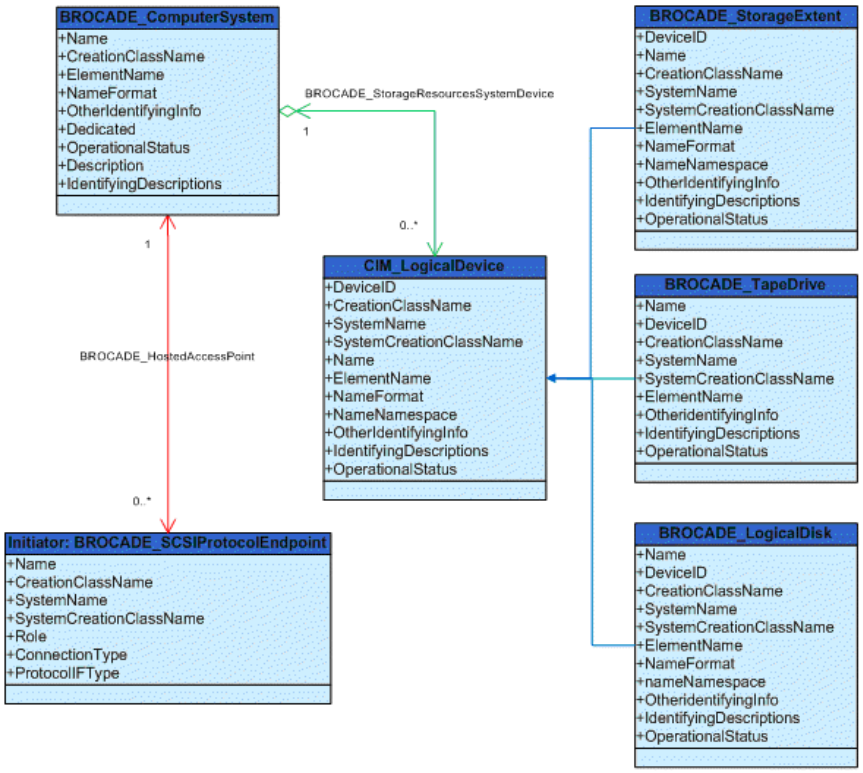

Figure 2-9. HDR Profile Data Model

Diagnostics Profile

The Diagnostics profile is based on the Common Diagnostic Model (CDM), which is an architecture and methodology for exposing system diagnostics instrumentation through the CIM standard interfaces. Standardization of clients, providers, and tests gain a certain degree of portability and in many cases the profile needs to be written only once to satisfy multiple environments and platforms.

An implementation of the Diagnostics profile allows the management application to do the following:

- Discover, configure, and execute diagnostics tests
- View progress and control test execution
- View and manage test execution results

NOTE

- All diagnostic tests are supported and only one test can be run at a time. While the first test is running, the provider does not accept any other request for a diagnostic test run and an appropriate status code is returned. The job instance is overwritten with the new job instance created for the newly requested diagnostic test run. This happens only when the existing job has already completed the execution (successful or failed).
- The provider is capable of storing only 100 **DiagnosticServiceRecord** and 100 **DiagnosticCompletionRecord** instances. Once the count reaches the maximum number, old records are cleaned up on a “first in first out” basis and the new records are added. When the provider is unloaded or the CIM Server is restarted, all the records are removed from the memory.
- The default extrinsic method is implemented with no additional parameters. The provider uses default values for parameters required for a particular diagnostic test.
- The diagnostic tests are supported only for the post-boot environment.

Table 2-6 lists the various diagnostics tests that are available for the BR-Series Adapters and the availability of the support.

Table 2-6. Supported Diagnostic Tests

Diagnostic test	Support
Memory test	Yes
Loopback test	Yes
PCI Loopback test	Yes
Eth Loopback test	Yes

The supported diagnostics tests are explained in the following subsections with the corresponding instance diagrams.

Memory Test

The memory diagnostic test is applicable for HBAs and CNAs. To avoid any damage to the adapter, the provider disables the ports and the devices in the adapter before running the test. After completing the memory test, the provider enables the adapter.

Figure 2-10 represents the instance diagram of the entire model when the memory test is executed.

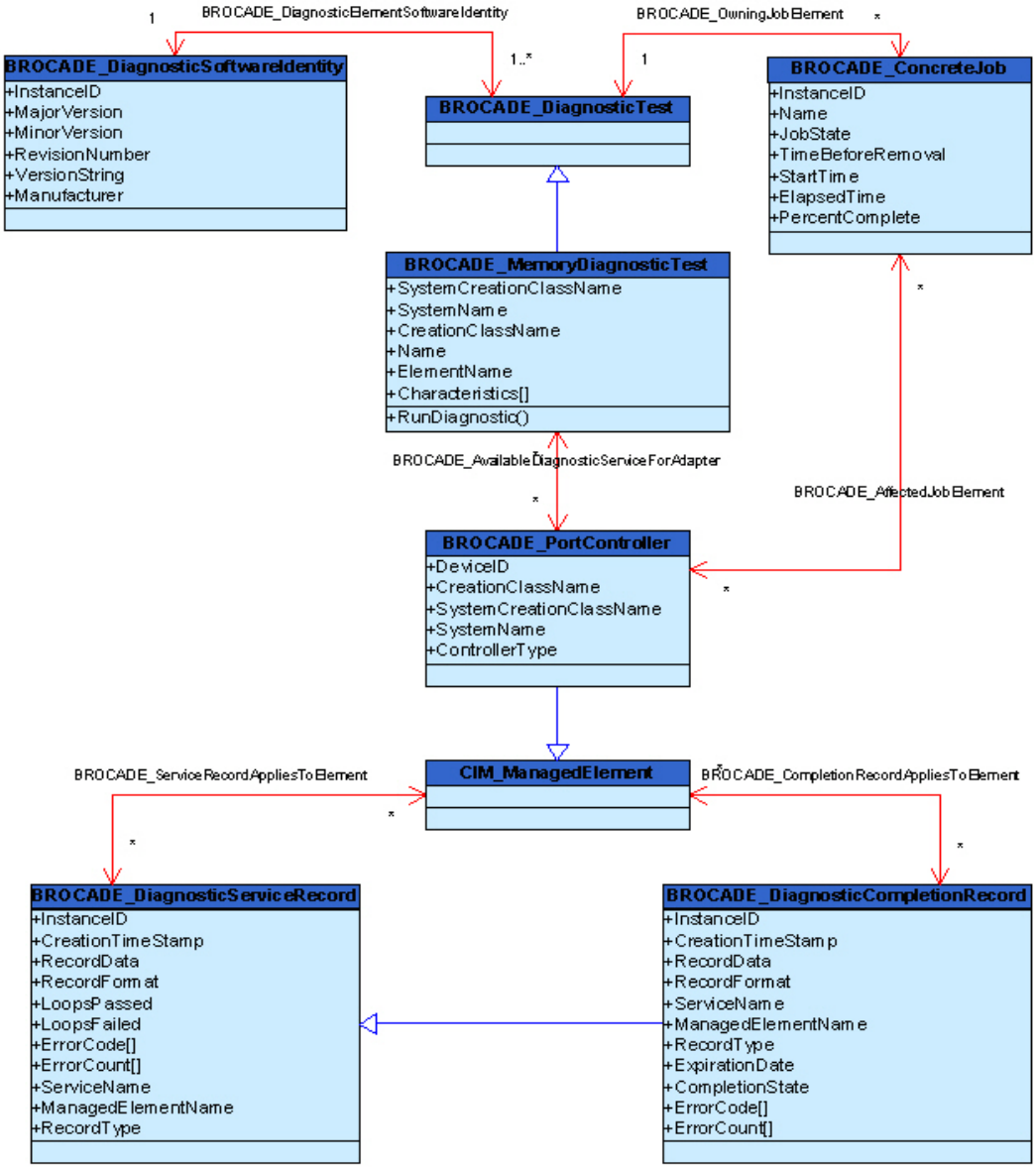

Figure 2-10. Memory Test Instance Diagram

Loopback Test

The loopback diagnostic test is applicable for the FC and FCoE ports in FC HBAs and CNAs. To avoid any damage to the adapter, the provider disables or removes all the remote targets connected to the port before running the test. After completing the loopback test, the provider enables the port.

During the loopback test, if the physical port is in the enabled state, it will be disabled and enabled internally during the test execution. If the physical port is in the disabled state, there will not be any change in the state during the execution. For a CNA, if one of the functionalities from Eth or FCoE is in the enabled state and the other is in the disabled state, the same state will not be retained after the execution. In this case, both functionalities will be enabled after the test execution.

NOTE

For running the loopback test in external mode, the loopback cable or device must be plugged into the port for which the test run is requested.

An internal loopback test is not supported for the FCoE port.

Figure 2-11 represents the instance diagram of the entire model when the loopback test is executed.

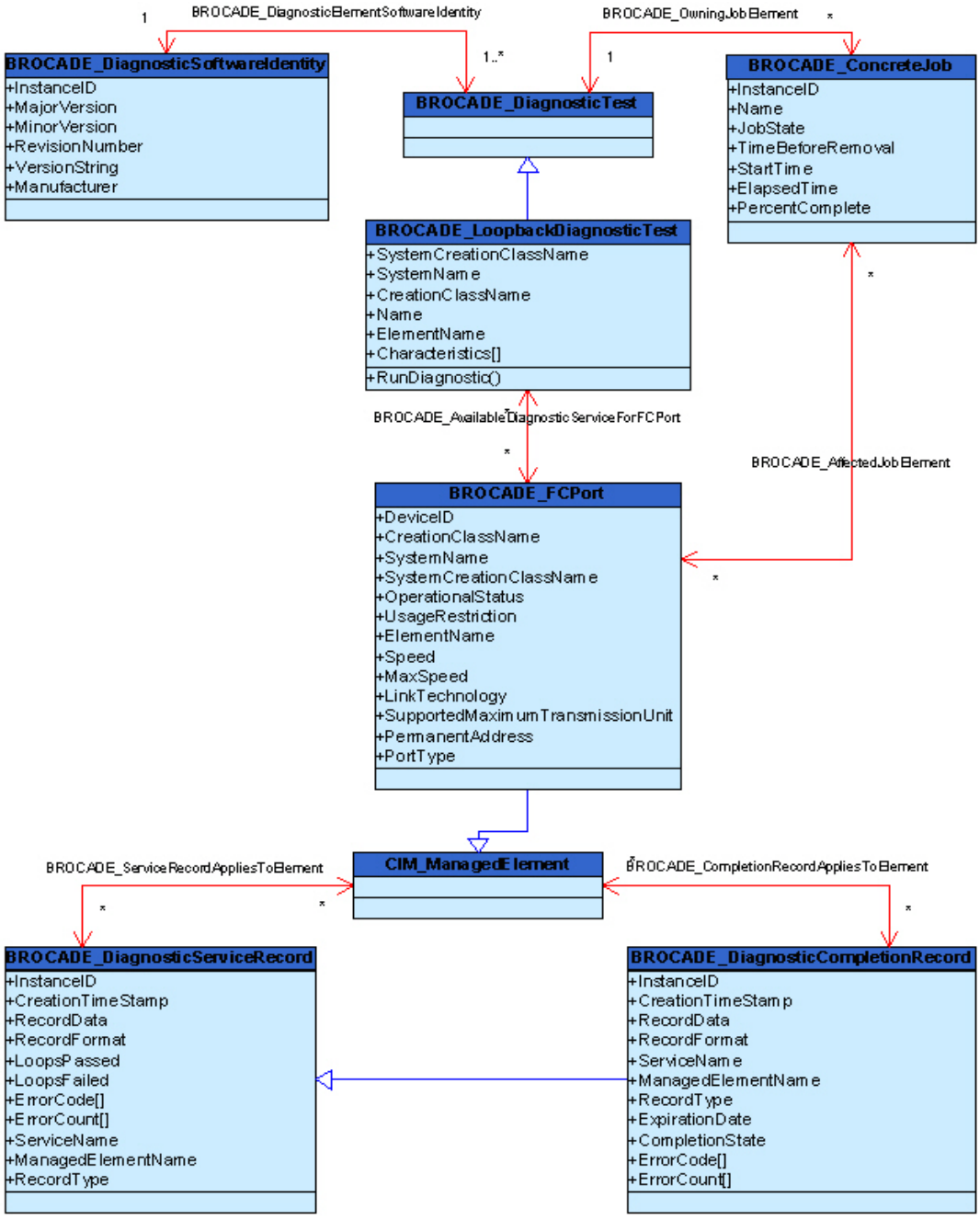

Figure 2-11. Loopback Test Instance Diagram

PCI Loopback Test

The PCI loopback diagnostic test is applicable for FC/FCoE ports and Eth ports present in both FC HBAs and CNAs.

Figure 2-12 represents the instance diagram of the entire model when the PCI loopback test is executed.

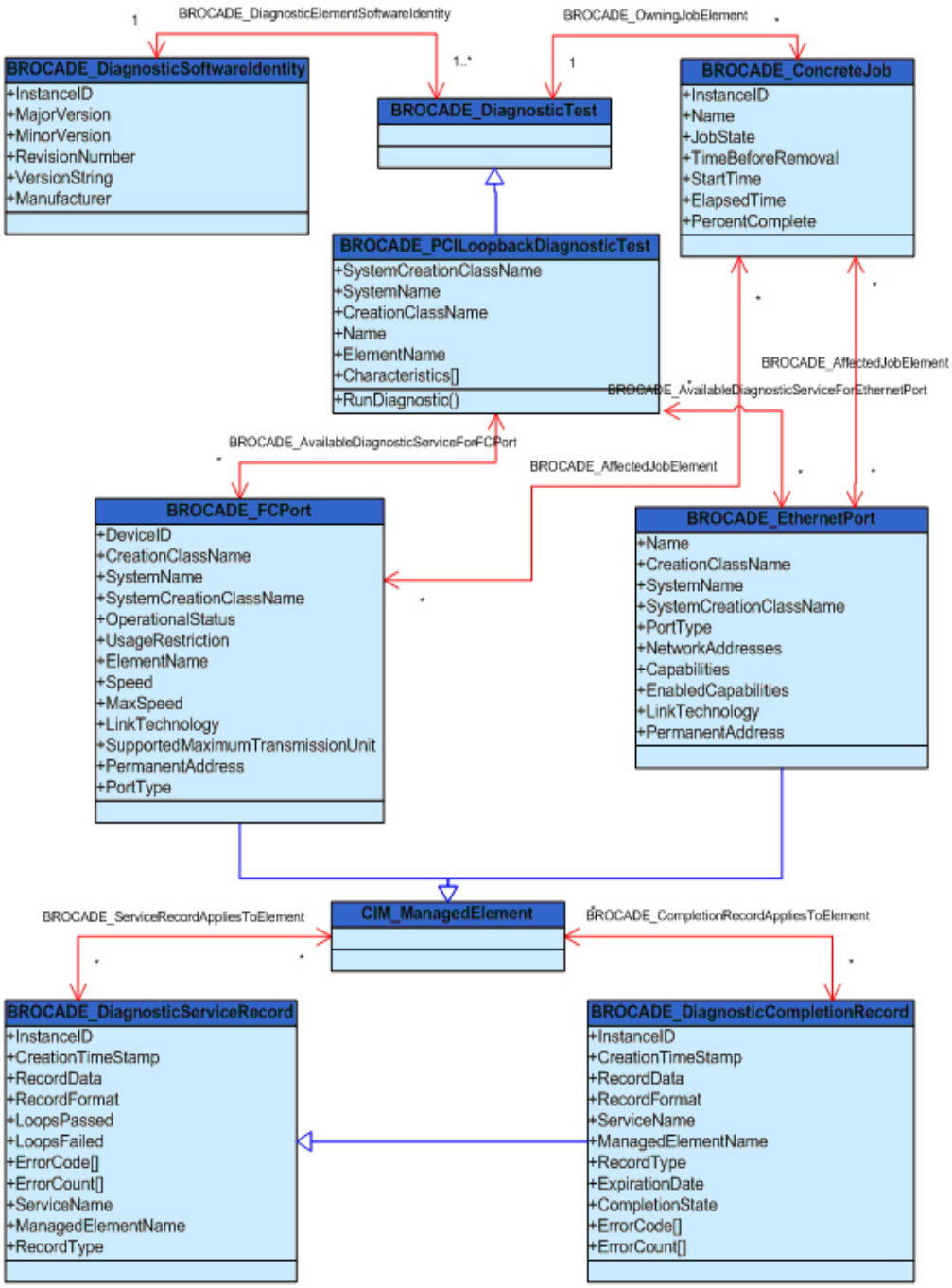

Figure 2-12. PCI Loopback Test Instance Diagram

Eth Loopback Test

The Eth loopback diagnostic test is applicable for Ethernet ports in CNAs. To avoid any damage to the BR-Series Adapter, the provider disables the Eth port, meaning the remote targets connected to the Eth port are removed. After completing the Eth loopback test, the provider enables the Eth port.

Figure 2-13 represents the instance diagram of the entire model when the Eth loopback test is executed.

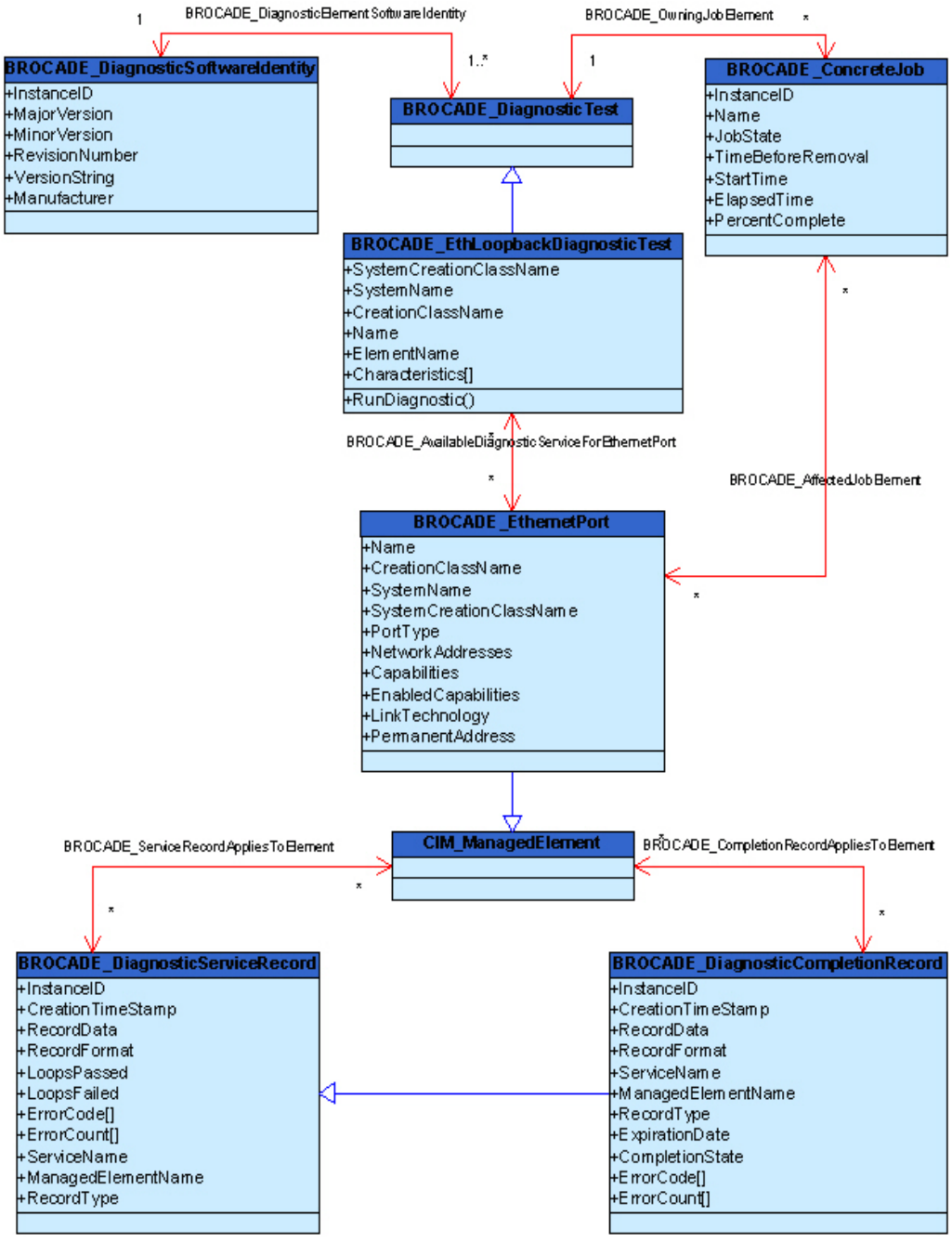

Figure 2-13. Eth Loopback Test Instance Diagram

NOTE

On the Windows platform, you must create a VLAN either through QLogic Host Connectivity Manager (HCM) or QLogic BCU CLI before running the Eth loopback tests through the CIM Provider. When you attempt to run the Eth loopback test through the CIM Provider without a VLAN configured, the request is aborted with appropriate service and completion records.

Software Update Subprofile

The Software Update subprofile describes the classes and properties used to support the installation and provides the ability to update Basic Input-Output System (BIOS), firmware, drivers, and related software on a managed element within a managed system.

This profile is supported as a subprofile for the FC HBA profile. The implementation of this subprofile enables the CIM Provider for QLogic BR Seres Adapters (CPQA) to support the BIOS update on the BR-Series Adapter.

Figure 2-14 is the data model with the classes that are supported in this subprofile. For more details on the supported classes and properties, refer to Appendix A, "Provider Schema MOF File".

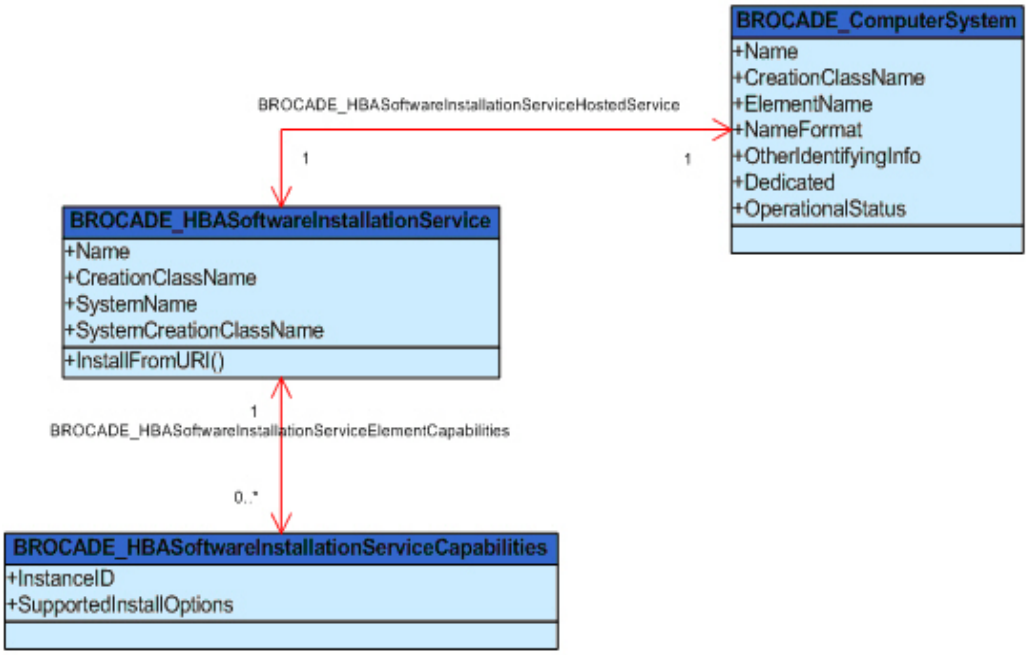

Figure 2-14. Software Update Data Model

Extrinsic Method Support

The extrinsic method **InstallFromURI()** supports updating the BIOS in the BR-Series Adapter. The supported Uniform Resource Identifier (URI) schemes include the file protocol and Trivial File Transfer Protocol (TFTP).

NOTE

The extrinsic method must be implemented in synchronous mode. The client may have to increase the timeout value accordingly, otherwise the timeout may happen from the client side before it gets the result of the actual method invocation.

Table 2-7 and Table 2-8 explain the different parameters used for the extrinsic method and the corresponding supported values.

Table 2-7. Parameters Used in File Protocol

Parameter	IN/OUT	Values	Description
InstallOptions	IN	4, 5	Any or both of the supported values can be passed.
InstallOptionsValues	IN	NULL or no values required	InstallOptionsValues is an array of strings providing additional information to InstallOptions for the method to install the software. Each entry of this array is related to the entry in InstallOptions that is located at the same index providing additional information for InstallOptions.
URI	IN	File protocol URI containing the absolute path including the file name where the boot code image is present	For example: *file:///<absolute_path_with_file_name>* **On Unix platforms:** *file:///<location of the boot file>* For example, *file:///root/brocade_adapter_boot_fw_vx-x-x-x* **On Windows platforms:** *file:///c:\\brocade_adapter_boot_fw_vx-x-x-x*
Target	IN	Object path of the BROCADE_PortController class representing the adapter to which the BIOS update or installation must apply	
Job	OUT	Not supported or used	

Table 2-8. Parameters Used in TFTP

Parameter	IN/OUT	Values	Description
InstallOptions	IN	4, 5	Any or both of the supported values can be passed.
InstallOptionsValues	IN	NULL or no values required	InstallOptionsValues is an array of strings providing additional information to InstallOptions for the method to install the software. Each entry of this array is related to the entry in InstallOptions that is located at the same index, providing additional information for InstallOptions.
URI	IN	TFTP URI consisting of host IP address and the boot image file name	Syntax: *tftp://<host_ip>/<boot_file_name>* For example: *tftp://10.32.116.207/brocade_adapter_boot_fw_vx-x-x-x* Where *brocade_adapter_boot_fw_vx-x-x-x* is the BIOS boot code file.
Target	IN	Object path of the BROCADE_PortController class representing the adapter to which the BIOS update or installation must apply	
Job	OUT	Not supported or used	

NOTE

The prerequisite is to have a TFTP client available in the host machine use the TFTP scheme for the **installfromURI()**. The TFTP client must be accessible by the CIM Server for the method invocation to succeed.

Software Inventory Subprofile

The Software Inventory subprofile models the software entities that are available or installed on the managed system.

This profile is supported as a subprofile for the FC HBA profile. Figure 2-15 is the data model with the classes that are supported in this subprofile. For more details on the supported classes and properties, refer to Appendix A, "Provider Schema MOF File".

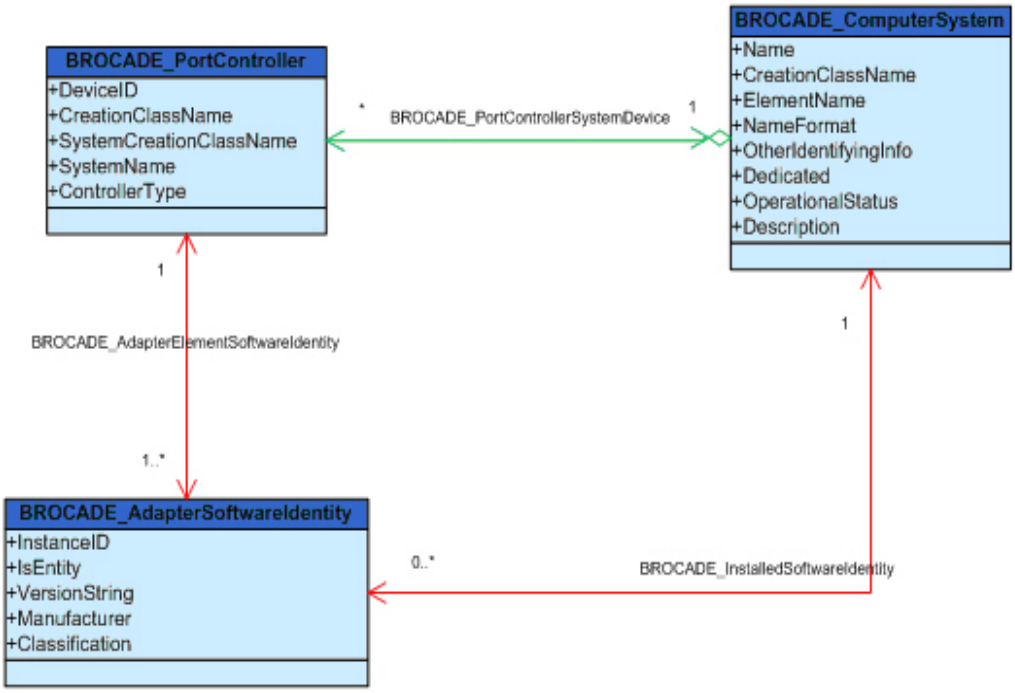

Figure 2-15. Software Inventory Subprofile Data Model

The classes **AdapterSoftwareIdentity**, **AdapterElementSoftwareIdentity**, and **InstalledSoftwareIdentity** are the only supported classes in this subprofile. The other classes (**PortController** and **ComputerSystem**) are part of the FC HBA profile and are used in this diagram for better understanding of the Software Inventory subprofile.

The support for the classes **AdapterSoftwareIdentity** and **AdapterElementSoftwareIdentity** are already in an earlier release for modeling the driver and firmware of the FC HBA. The support is enhanced in this release as well for the BR-Series Adapter.

Ethernet Port Subprofile

The Ethernet Port subprofile defines a model of a network port to use for modeling an Ethernet port. It defines the classes to represent an Ethernet port, its associated controllers, and the Ethernet interfaces.

This profile is supported as a subprofile for the FC HBA profile. Figure 2-16 is the data model with the classes that are supported in this subprofile. For more details on the supported classes and properties, refer to Appendix A, "Provider Schema MOF File".

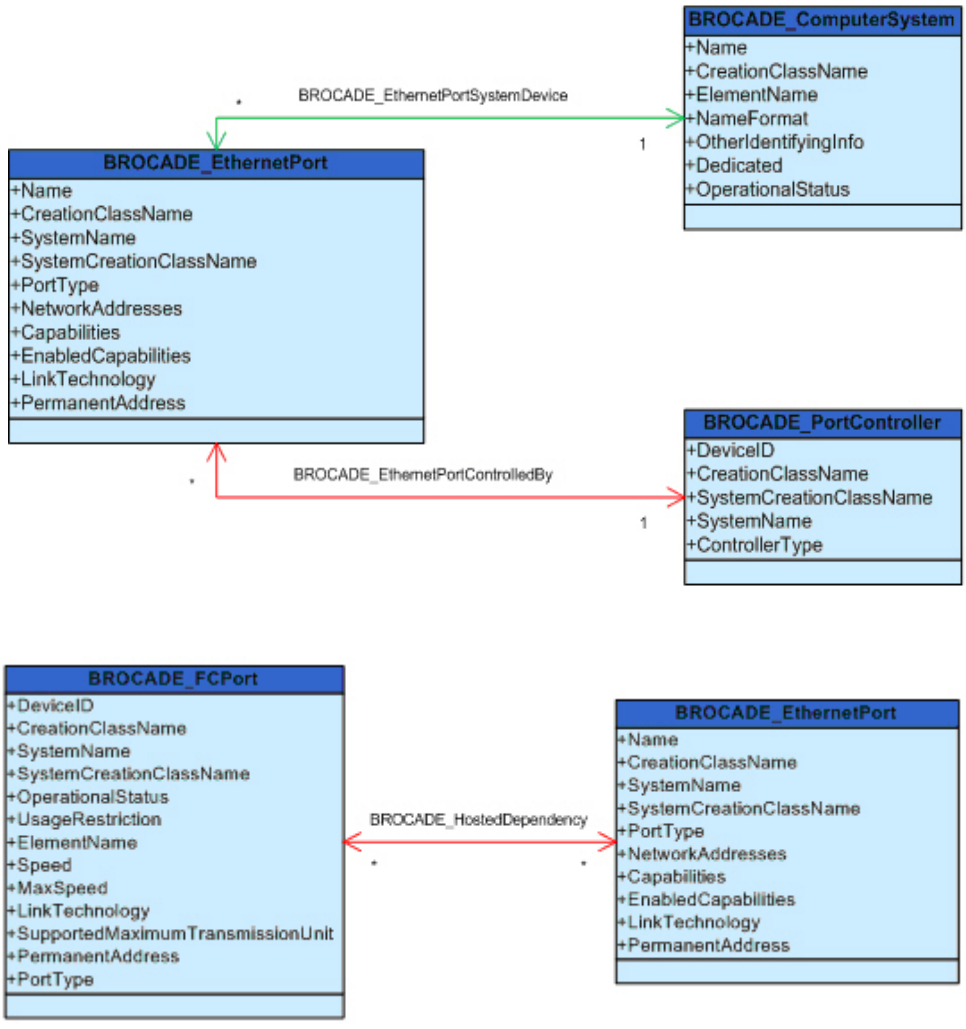

Figure 2-16. Ethernet Port Subprofile Data Model

The **FCPort** and **HostedDependency** classes are implemented as part of the (a draft version) defined by SNIA.

Access Point Subprofile

The Access Point subprofile describes the classes and properties used to provide the addresses of remote access points for management services. This subprofile provides management applications the ability to access the management services for the BR-Series Adapters.

This profile is supported as a subprofile for the FC HBA profile. Figure 2-17 is the data model with the classes that are supported in this subprofile. For more details on the supported classes and properties, refer to A, “Provider Schema MOF File”.

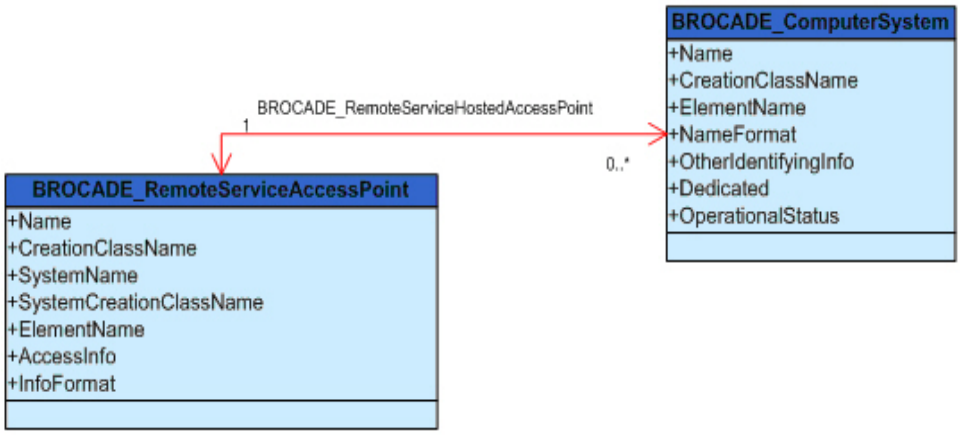

Figure 2-17. Access Point Subprofile Data Model

Physical Asset Subprofile

The Physical Asset subprofile describes the asset, inventory, and other descriptive elements necessary for the physical components in a managed domain.

This profile is supported as a subprofile for the FC HBA profile. Figure 2-18 is the data model with the classes that are supported in this subprofile. For more details on the supported classes and properties, refer to Appendix A, "Provider Schema MOF File".

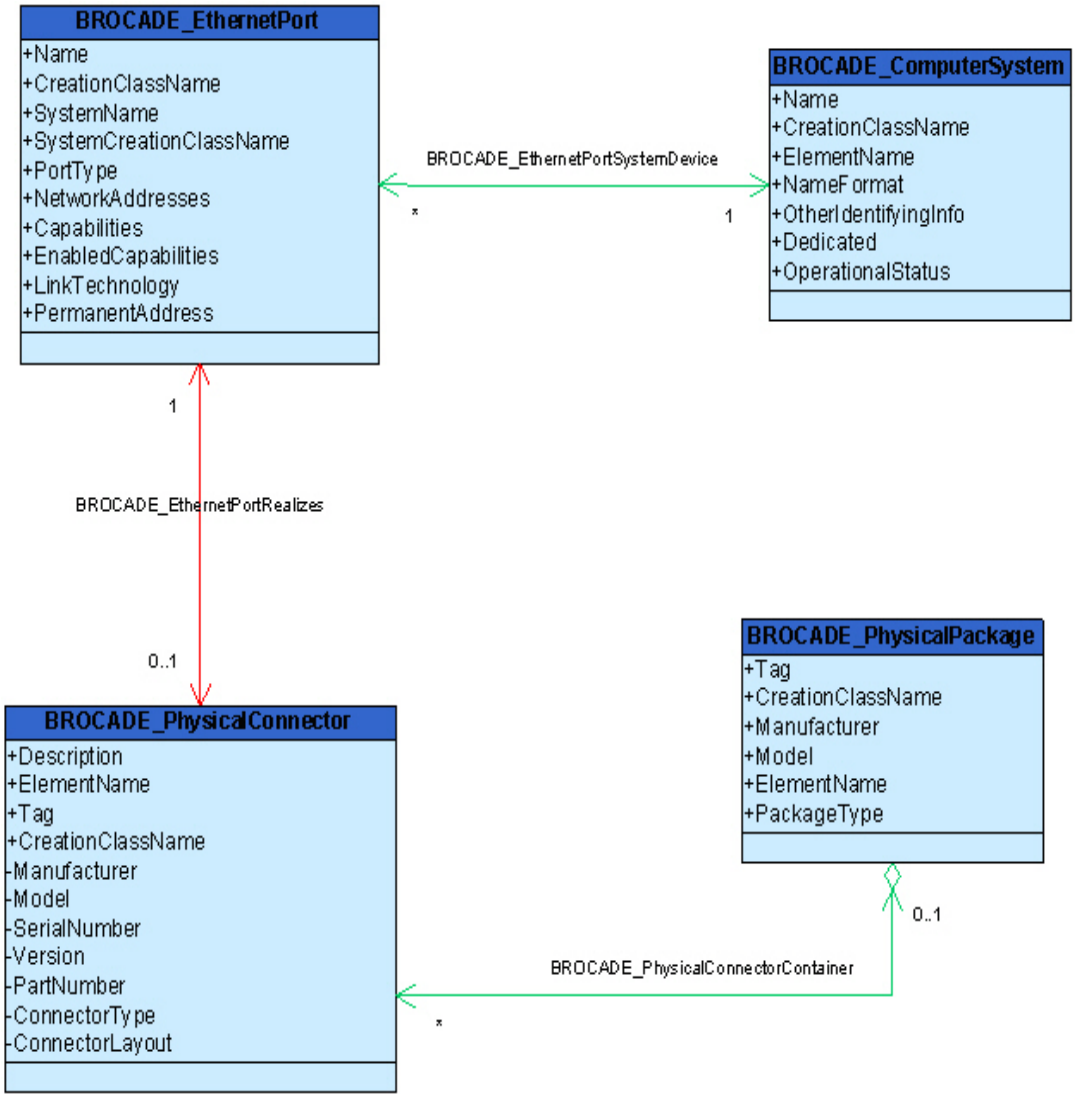

Figure 2-18. Physical Asset Subprofile Data Model

The classes **PhysicalPackage** and **EthernetPortRealizes** are the classes that make up part of the Physical Asset subprofile. The other classes are part of the FC HBA profile and are used in this data model diagram for better understanding of the Physical Asset subprofile.

Host LAN Network Port Profile

The provider supports the Distributed Management Task Force (DMTF) Host LAN Network Port (HLNP) profile, which extends the management capability of referencing profiles (Ethernet Port subprofile) by adding the capability to represent a network port that provides the LAN interface to a host system, its associated controller, and network interfaces.

Data Model

Figure 2-19 shows the data model with the classes and properties that are supported to conform to the HLNP profile. Only the mandatory classes and properties are considered for this release.

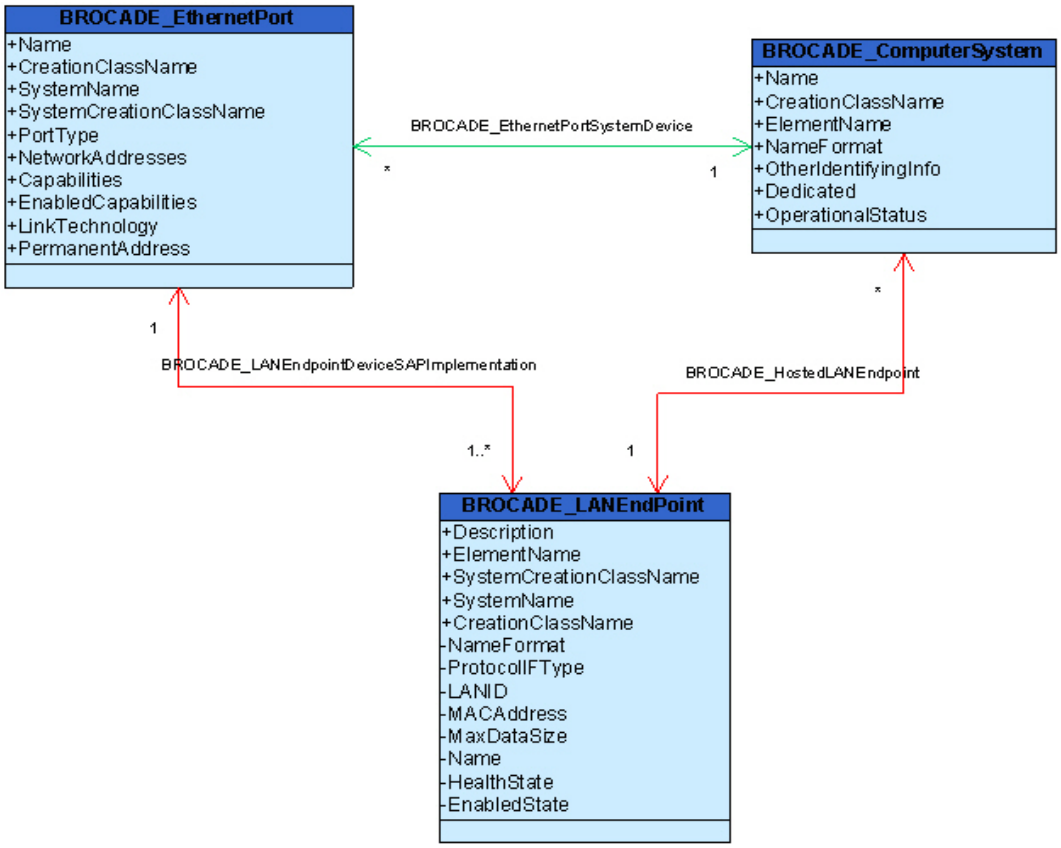

Figure 2-19. Host LAN Network Port Profile Data Model

Storage HBA Profile

The Storage HBA profile represents the manageable elements of an HBA and optionally the storage connected to it. An HBA can be connected to disks contained within a internal drive cage of the server or an external drive enclosure or array. The Storage HBA profile does not include enclosure management of storage devices connected to the HBA.

Data Model

Figure 2-20 is the data model with the classes and properties that are supported to conform to this Storage HBA profile. Only the mandatory classes and properties are considered for this release.

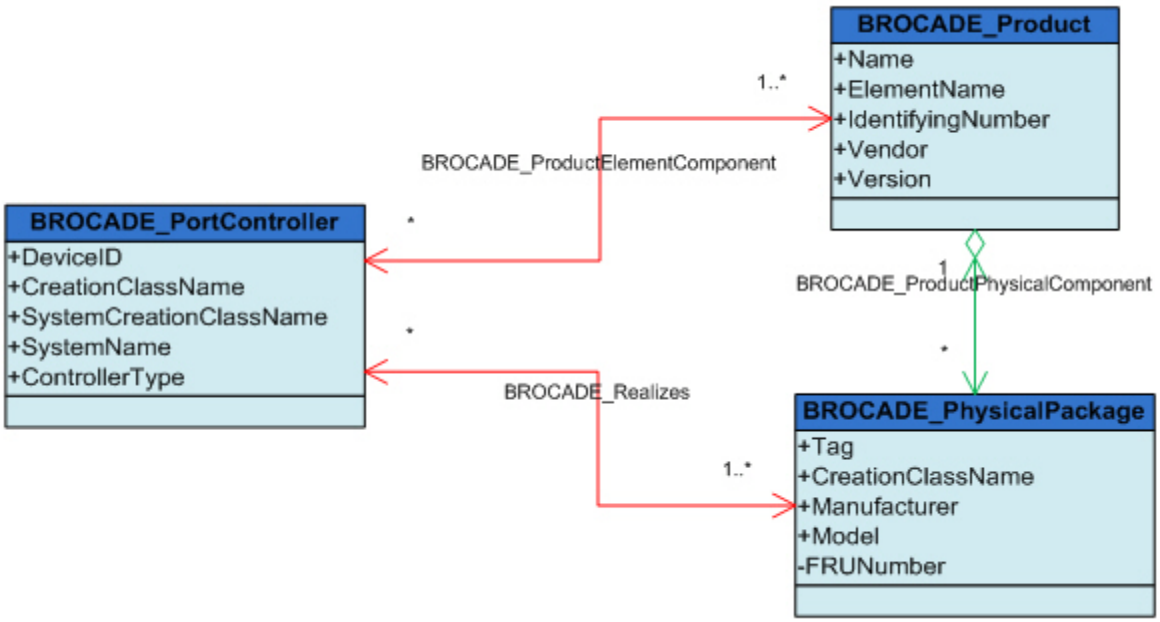

Figure 2-20. Storage HBA Profile Data Model

Profile Registration

The Storage HBA profile is an autonomous profile. Therefore, one more instance of **RegisteredProfile** will be created. This instance will be used to advertise the support for Storage HBA profile implementation in CPQA. Also, one more instance of **RegisteredSubProfile** will be created to indicate the support. This will be a subprofile of the Storage HBA profile. Service Location Protocol (SLP) templates will be updated for these two profiles.

FCoE Initiator Ports Subprofile

The FCoE Indicator Ports Subprofile is not a new subprofile added in this release. All the mandatory classes (**HostedDependency** and a few classes from other profiles, such as EthernetPort, FCPort, and so on) from this profile are already implemented in release 2.1.0.0. An instance of **RegisteredSubProfile** will be created to indicate the support of this subprofile. FCoE Initiator Ports is a subprofile of the Storage HBA profile. An instance of the association class **SubprofileRequiresProfile** has been created to indicate the association with the Storage HBA profile.

MOF Files

The ability to exchange information between management applications is fundamental to CIM. The current mechanism for exchanging management information is the Management Object Format (MOF). The MOF is a language based on the Interface Definition Language (IDL). The MOF syntax is a way to describe object definitions in textual form. Because the MOF files that make up the SMI Agent are standard text files, they can be used as reference materials for creating an SMI Agent client.

For more details on MOF, refer to the CIM standards website.

http://www.dmtf.org/standards/cim/

Using MOF Files as a Reference

The MOF files provide a list of the various classes and associations. Links to related classes and subclasses are found within each class file. The documentation for specific classes provides the following information:

- A description of the class
- Class hierarchy
- Subclasses
- Class qualifiers
- Associations
- References

MOF Files and Their Descriptions

Table 2-9 contains the list of MOF files and their profile content. For more details on MOF, refer to Appendix A, "Provider Schema MOF File".

Table 2-9. MOF Files

MOF	Content
repository.mof	Includes all MOFs
brocade_fchba.mof	FC HBA profile
brocade_fcinitport.mof	FC Initiator Ports subprofile
brocade_server.mof	Server profile
brocade_prp.mof	Profile Registration profile
brocade_hdr.mof	Host Discovered Resources profile
brocade_softwareupdate.mof	Software Update profile
brocade_accesspoint.mof	Access Point subprofile
brocade_cdm.mof	Common Diagnostic Model profile
brocade_ethernetport.mof	Ethernet Port profile
brocade_alertindication.mof	Alert Indication
brocade_hostlannetworkport.mof	Host LAN Network Port profile
brocade_physicalasset.mof	Physical Asset subprofile
brocade_storagehba.mof	Storage HBA profile
brocade_agentservice.mof	Brocade-specific extension

Namespace for CIM Providers

The namespaces are the context within which the schemas are defined. Within a specified namespace, the instances of the classes are guaranteed to be unique. Different namespaces can be created to group related information, or to define separate views of managed resources such as adapters, switches, and so on.

The namespace used for all supported profiles is **root/brocade**.

CIM Object-Naming Conventions

The classes that are extended from standard CIM classes are prefixed with BROCADE (for example, **BROCADE_XXX**).

3 Log Mechanism

Logging Mechanism

The logging is done for debugging purposes and to keep track of the execution flow between the provider's internal modules. The provider uses the logging mechanism or APIs exposed by the SimpleWBEM provider development framework. The current release supports logging for debugging purposes only.

Debug Logging

In a production environment, by default, the debug logs generated from the provider will not be logged unless you configure the log explicitly. To enable or configure logging, the following file must be created in the user home directory.

```
$HOME/.cimplerc
```

The configuration file is created for the logging facility. The environment variable *HOME* points the location of the.cimplerc configuration file. In Linux platforms, *HOME* variable points to the user home directory, by default. In Windows platforms, this variable is not set by default, so make sure that you provide the correct location for the logging configuration file.

The previous file must include a line that sets the logging level, as shown in the following example.

```
LOG_LEVEL=DBG
```

LOG_LEVEL must be set to one of the categories listed in Table 3-1.

Table 3-1. Log Levels

Log Level	Description
FATAL	Designates very severe error events that will presumably lead the provider to abort.
ERR	Designates error events that might still allow the provider or CIM Server to run.
WARN	Designates potentially harmful situations.

Table 3-1. Log Levels (Continued)

Log Level	Description
INFO	Designates informational messages that highlight the progress of the application or the execution flow at a coarse-grained level.
DBG	Designates fine-grained informational events that are most useful to debug an application.

The provider logs are always logged in the following default location with the default file name.

```
$HOME/.cimple/messages
```

In the syntax, `$HOME` is the location where the log is configured and `messages` is the log file created by the SimpleWBEM framework.

4 Client-Server Communication

About Client-Server Communication

The following are the different testing tools available for testing the provider implementation:

- The command line utility **cimcli** comes as part of the OpenPegasus distribution. It is used for unit testing the provider implementation.
- The WMI CIM studio is used for testing the provider implementation for the WMI provider.

Client Connection Establishment

The SMI-S client can establish the connection with the following details.

Protocol Scheme

The supported protocol schemes are HTTP and HTTPS.

Namespace

The namespace used for all supported profiles is **root/brocade**.

IP Address

The IP address is where the CIM Server hosting the CIM Provider for QLogic BR-Series Adapters (CPQA) is running.

Port Number

The port number represents the port on which the CIM Server is waiting for requests from the CIM clients. Table 4-1 shows the protocol schemes and the corresponding default port numbers.

Table 4-1. Port Numbers and Protocol Schemes

Protocol Scheme	Default Port Number
HTTP	5988
HTTPS	5989

NOTE

If the CIM Server is running on non default port numbers, the non default port numbers must be used while establishing the connection or while using the tools.

Authentication Parameters

If the authentication parameter is enabled, the appropriate user principal and password credential must be passed.

5 Service Location Protocol

Overview of Service Location Protocol

The Service Location Protocol (SLP) allows computers and other devices to find services in a local area network (LAN) without prior configuration. The slp.reg file is the SLP template that is required to advertise the provider or profiles supported in the CIM Server. It is recommended you use Open SLP software (version 2.0 or later) to advertise the provider or profiles supported. While using Open SLP as the Service Agent (SA), the slp.reg file has to be passed as the input for the **-r** option.

The following change must be done in the slp.reg file.

Update the following attributes with the appropriate URL or location where the CIM Server with the provider installed is running:

- **service:wbem**
- **template-url-syntax**

For example, if the provider is installed onto a CIM Server running on 10.32.116.2 and listening at port number 5988, the attributes must be as follows:

- **service:wbem:http://10.32.116.2:5988,en,65535**
- **template-url-syntax=http://10.32.116.2:5988**

NOTE

Make sure that the provider is installed successfully during SLP testing.

For more information on Open SLP and the command usage, refer to http://www.openslp.org/.

Running SLP on Windows Platforms

Run the SLP agent in one of the following modes for successful operation or advertisement of SLP attributes.

- To run in debug mode:

  c:\OpenSLP> slpd.exe -debug -c <Absolute path for slp.conf>

  -l <Absolute path for slpd.log> -r <Absolute path for slp.reg file>

- To run in service mode, perform the following steps.

  1. Open SLP, which has to be installed as a service.
  2. Execute the **slpd.exe -install** command. This SLP SA service must be started through the services property window of Open SLP in the services.msc window with the necessary parameters **-c**, **-l**, and **-r** passed in the **Start Parameters** field.

The usage of Open SLP SA has the following exceptions:

- Running Open SLP SA with the **-d** option will not make the SLP daemon run and exit.
- Running the SLP service from the command prompt will start the service, but the parameters that are passed while running from the command prompt will be ignored. Due to this, the service advertisement will not take place.

Running SLP on VMware Platforms

Before running SLP SA on VMware platforms, make sure that the standard port for SLP protocol *427* is opened in the firewall. It must be configured to open port 427 for both TCP (IN and OUT) and UDP (IN and OUT).

- To open a port in the firewall, execute the following command.

  $ esxcfg-firewall -o <*port,tcp*|*udp,in*|*out,name*>

  For example, the following command will open the firewall for the port 427 to TCP IN.

  $ esxcfg-firewall -o *427,tcp,in,slp*

  Execute the previous command with appropriate values to open the port for all the ports IN and OUT for TCP and UDP.

- To close the opened port in the firewall, execute the following command.

  $ esxcfg-firewall -c <*port,tcp*|*udp,in*|*out*>

  For example, the following command will close the opened port in the firewall.

  $ esxcfg-firewall -c *427,tcp,in*

NOTE

It is not recommended to disable the firewall only for running the SLP on VMware platforms.

For more information on the **esxcfg** command help and usage, refer to the following web page.

http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1021779

6 Windows Management Instrumentation Support

WMI-supported Classes and Methods

For the Windows platform, the provider solution is available through the BR-Series Adapter FC HBA driver. The BR-Series Adapter FC HBA driver on a Windows platform provides support for a certain number of classes through WMI calls. Table 6-1 provides the classes and support details available through the BR-Series Adapter FC HBA driver.

Table 6-1. WMI Classes and Support Details

WMI Class	Instrumented by BR-Series Adapter Driver
HBAFC3MgmtInfo	Yes
HBAFCPBindingEntry	Yes
HBAFCPBindingEntry2	No
HBAFCPID	No
HBAFCPScsiEntry	Yes
HBAScsiID	Yes
MSFC_AdapterEvent	No
MSFC_EventBuffer	No
MSFC_EventControl	No
MSFC_FC4Statistics	Yes
MSFC_FCAdapterHBAAttributes	Yes
MSFC_FibrePortHBAAttributes	Yes
MSFC_FibrePortHBAMethods	Yes
MSFC_FibrePortHBAStatistics	Yes
MSFC_HBAAdapterMethods	Yes

Table 6-1. WMI Classes and Support Details (Continued)

WMI Class	Instrumented by BR-Series Adapter Driver
MSFC_HBAFCPInfo	Yes
MSFC_HBAPortAttributesResults	Yes
MSFC_HBAPortStatistics	Yes
MSFC_LinkEvent	No
MSFC_PortEvent	No
MSFC_TargetEvent	No
MSFC_TM	No
MSFC_FibrePortNPIVAttributes	Yes
MSFC_VirtualFibrePortAttributes	Yes
MSFC_NPIVLUNMappingInformation	Yes
MSFC_FibrePortNPIVMethods	Yes

WMI support is available only at the driver level.

Table 6-2 lists the WMI methods and their support details.

Table 6-2. WMI Methods and Support Details

WMI Methods	Containing WMI class	Support
GetDiscoveredPortAttributes	MSFC_HBAAdapterMethod	Yes
GetEventBuffer	MSFC_HBAAdapterMethod	No
GetFC3MgmtInfo	MSFC_HBAAdapterMethod	Yes
GetFC4Statistics	MSFC_HBAAdapterMethod	Yes
GetFCPStatistics	MSFC_HBAAdapterMethod	Yes
GetPortAttributesByWWN	MSFC_HBAAdapterMethod	Yes
RefreshInformation	MSFC_HBAAdapterMethod	Yes
ScsiInquiry	MSFC_HBAAdapterMethod	Yes
ScsiReadCapacity	MSFC_HBAAdapterMethod	Yes
ScsiReportLuns	MSFC_HBAAdapterMethod	Yes

Table 6-2. WMI Methods and Support Details (Continued)

WMI Methods	Containing WMI class	Support
SendCTPassThru	MSFC_HBAAdapterMethod	Yes
SendLIRR	MSFC_HBAAdapterMethod	Yes
SendRLS	MSFC_HBAAdapterMethod	Yes
SendRNID	MSFC_HBAAdapterMethod	Yes
SendRNIDV2	MSFC_HBAAdapterMethod	Yes
SendRPL	MSFC_HBAAdapterMethod	No
SendRPS	MSFC_HBAAdapterMethod	No
SendSRL	MSFC_HBAAdapterMethod	No
SetFC3MgmtInfo	MSFC_HBAAdapterMethod	Yes
GetBindingCapability	MSFC_HBAFCPInfo	Yes
GetBindingSupport	MSFC_HBAFCPInfo	Yes
GetFcpPersistentBinding	MSFC_HBAFCPInfo	Yes
GetFcpTargetMapping	MSFC_HBAFCPInfo	Yes
GetPersistentBinding2	MSFC_HBAFCPInfo	No
RemovePersistentEntry	MSFC_HBAFCPInfo	No
SetBindingSupport	MSFC_HBAFCPInfo	Yes
SetPersistentEntry	MSFC_HBAFCPInfo	No
CreateVirtualPort	MSFC_FibrePortNPIVMethods	Yes
RemoveVirtualPort	MSFC_FibrePortNPIVMethods	Yes

7 Frequently Asked Questions

General Questions

- What are the supported profiles and subprofiles?
- How to verify whether the CPQA is up and running?
- What are the expansions for the commonly used acronyms?
- Does release 3.x.x.x support Indications?
- How to identify the number of BR-Series Adapters managed by CIM Provider?
- How to get the version information of the CIM Provider installed?
- Is SFCB server support available on all platforms?
- Is there multiple client support for indication subscription?

What are the supported profiles and subprofiles?

The CIM Provider supports the following profiles and subprofiles:

- Server profile
- Profile Registration profile
- FC HBA profile
- FC Initiator Ports subprofile
- Host Discovered Resources profile (partial support)
- Diagnostics profile
- Software Update subprofile
- Software Inventory subprofile
- Ethernet Port subprofile
- Access Point subprofile
- Physical Asset subprofile
- Host LAN Network Port profile

- Storage HBA profile
- FCoE Initiator Ports subprofile

How to verify whether the CPQA is up and running?

Perform **EnumerateInstances** on **Brocade_ObjectManager**. If the instances are returned, then the CIM Provider is up and running.

What are the expansions for the commonly used acronyms?

Table 7-1 lists the commonly used acronyms and their expansions.

Table 7-1. List of Acronyms and Expansions

Acronyms	Expansions
CDM	Common Diagnostic Model
CIM	Common Information Model
CIMOM	Common Information Model Object Manager
CNA	Converged Network Adapter
CPQA	CIM Provider for QLogic BR-Series Adapters
DMTF	Distributed Management Task Force
HCM	Host Connectivity Manager
HDR	Host Discovered Resources
HLNP	Host LAN Network Port
MOF	Managed Object Format
OEM	Original Equipment Manufacturer
SBLIM	Standards-Based Linux Instrumentation for Manageability
SFCB	Small FootPrint CIM Broker
SLP	Service Location Protocol
SMI-S	Storage Management Initiative Specification
SNIA	Storage Networking Industry Association
UUID	Universally Unique Identifier
WBEM	Web-Based Enterprise Management
WMI	Windows Management Instrumentation

Does release 3.x.x.x support Indications?

Yes. For more information on the supported alert indications, refer to “Alert Indications” on page 4.

How to identify the number of BR-Series Adapters managed by CIM Provider?

Perform **EnumerateInstancenames** on **CIM_PortController** under the **root/brocade** namespace**.** The total number of instances returned for the **CIM_PortController** class represents the number of BR-Series Adapters managed by CIM Provider.

How to get the version information of the CIM Provider installed?

Perform **EnumerateInstance** on **BROCADE_ProfileSoftwareIdentity** under the **root/brocade** namespace after the CIM Provider installation. The **VersionString** property gives you the version of CIM Provider installed.

Is SFCB server support available on all platforms?

No, SFCB server support is available only on the SLES 11.1, SLES 11.2, SLES 11.3, VMware ESX/ESXi 4.x, VMware ESXi 5.0, VMware ESXi 5.1, and VMware ESXi 5.5 platforms.

Is there multiple client support for indication subscription?

Yes, multiple clients can subscribe for indication simultaneously.

A Provider Schema MOF File

The following is the contents of the provider schema MOF file.

```
//repository.mof
#pragma include ("brocade_fchba.mof")
#pragma include ("brocade_fcinitport.mof")
#pragma include ("brocade_server.mof")
#pragma include ("brocade_prp.mof")
#pragma include ("brocade_hdr.mof")
#pragma include ("brocade_softwareupdate.mof")
#pragma include ("brocade_accesspoint.mof")
#pragma include ("brocade_ethernetport.mof")
#pragma include ("brocade_cdm.mof")
#pragma include ("brocade_alertindication.mof")
#pragma include ("brocade_physicalasset.mof")
#pragma include ("brocade_hostlannetworkport.mof")
#pragma include ("brocade_storagehba.mof")
#pragma include ("brocade_extension.mof")


//FC HBA Profile

// ===================================================================
// BROCADE_ComputerSystem
// ===================================================================
   [Description (
      "This represents the host computer system having the BR-Series Adapters"
      "installed." )]
class BROCADE_ComputerSystem : CIM_ComputerSystem {

      [Override ("Name"), Key, MaxLen (256),
       Description (
          "An unique identifier of for host computer system which "
          "is having the HBAs installed.")]
   string Name;

      [Override("CreationClassName"), Key, MaxLen (256),
       Description (
          "CreationClassName indicates the name of the class.  When used "
          "with the other key properties of this class, this property "
          "allows all instances of this class to be uniquely identified.")]
```

```
string CreationClassName;

   [Override("ElementName"),
    Description (
       "A user-friendly name for the host containing the HBAs "
       "installed. This property allows each instance to define a "
       "user-friendly name in addition to its key properties, identity "
       "data, and description information.")]
string ElementName;

   [Override ( "NameFormat" ),
    Description (
       "The ComputerSystem object and its derivatives are Top "
       "Level Objects of CIM. They provide the scope for "
       "numerous components. Having unique System keys is "
       "required. The NameFormat property identifies how the "
       "ComputerSystem Name is generated. The NameFormat "
       "ValueMap qualifier defines the various mechanisms for "
       "assigning the name. Note that another name can be "
       "assigned and used for the ComputerSystem that better "
       "suit a business, using the inherited ElementName "
       "property." ),
    ValueMap { "Other", "IP", "Dial", "HID", "NWA", "HWA", "X25",
       "ISDN", "IPX", "DCC", "ICD", "E.164", "SNA", "OID/OSI",
       "WWN", "NAA" }]
string NameFormat;

   [Override("OtherIdentifyingInfo"),
    Description (
       "OtherIdentifyingInfo captures additional data, beyond "
       "System Name information, that could be used to identify "
       "a ComputerSystem. One example would be to hold the Fibre "
       "Channel World-Wide Name (WWN) of a node. Note that if "
       "only the Fibre Channel name is available and is unique "
       "(able to be used as the System key), then this property "
       "would be NULL and the WWN would become the System key, "
       "its data placed in the Name property." ),
    ArrayType ( "Indexed" ),
    MaxLen ( 256 ),
    ModelCorrespondence { "CIM_System.IdentifyingDescriptions" }]
string OtherIdentifyingInfo[];

   [Override("Dedicated"),
    Description (
       "Enumeration indicating the purpose(s) to which the "
       "ComputerSystem is dedicated, if any, and what "
       "functionality is provided." ),
```

```
      ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
         "10", "11", "12", "13", "14", "15", "16", "17", "18",
         "19", "20", "21", "22", "23", "24", "25", "26", "27",
         "28", "29", "30", "31", "32", "33", "34", "35",
         "36..32567", "32568..65535" },
      Values { "Not Dedicated", "Unknown", "Other", "Storage",
         "Router", "Switch", "Layer 3 Switch",
         "Central Office Switch", "Hub", "Access Server",
         "Firewall", "Print", "I/O", "Web Caching", "Management",
         "Block Server", "File Server", "Mobile User Device",
         "Repeater", "Bridge/Extender", "Gateway",
         "Storage Virtualizer", "Media Library", "ExtenderNode",
         "NAS Head", "Self-contained NAS", "UPS", "IP Phone",
         "Management Controller", "Chassis Manager",
         "Host-based RAID controller", "Storage Device Enclosure",
         "Desktop", "Laptop", "Virtual Tape Library",
         "Virtual Library System", "DMTF Reserved",
         "Vendor Reserved" },
      ArrayType ( "Indexed" ),
      MappingStrings { "MIB.IETF|MIB-II.sysServices",
         "FC-GS.INCITS-T11 | Platform | PlatformType" },
      ModelCorrespondence {
         "CIM_ComputerSystem.OtherDedicatedDescriptions" }]
   uint16 Dedicated[];

      [Override ("OperationalStatus"),
      Description (
         "Indicates the current status of the host computer system. "
         "Many of the enumeration values are self-explanatory."),
      ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
         "10", "11", "12", "13", "14", "15", "16", "17", "18",
         "..", "0x8000.." },
      Values { "Unknown", "Other", "OK", "Degraded", "Stressed",
         "Predictive Failure", "Error", "Non-Recoverable Error",
         "Starting", "Stopping", "Stopped", "In Service",
         "No Contact", "Lost Communication", "Aborted", "Dormant",
         "Supporting Entity in Error", "Completed", "Power Mode",
         "DMTF Reserved", "Vendor Reserved" },
      ArrayType ( "Indexed" ),
      ModelCorrespondence {
         "CIM_ManagedSystemElement.StatusDescriptions" }]
   uint16 OperationalStatus[];

};
```

```
// ===================================================================
// BROCADE_PortController
// ===================================================================
   [Description (
      "This represents the Fibre Channel HBA.")]
class BROCADE_PortController : CIM_PortController {

      [Override ("DeviceID"), Key, MaxLen (256),
       Description (
          "An address or identifying information to uniquely name "
          "the adapter. This is the  unique Node WWN of the FC HBA "
          "installed.")]
   string DeviceID;

      [Override("CreationClassName"), Key, MaxLen (256),
       Description (
          "CreationClassName indicates the name of the class.  When used "
          "with the other key properties of this class, this property "
          "allows all instances of this class to be uniquely identified.")]
   string CreationClassName;

      [Override("SystemCreationClassName"), Key, MaxLen (256),
        Description (
           "The scoping system's creation class name.  The scoping "
           "system is the host in which this FC HBA is installed.")]
   string SystemCreationClassName;

      [Override("SystemName"), Key, MaxLen (256),
       Description (
          "The scoping system's Name property. This property represents "
          "the name of the host computer system.")]
   string SystemName;

      [Override("ControllerType"),
       Description (
          "The type or model of the port controller. Specific "
          "values will be enumerated in a later release of this "
          "schema. When set to 1 (\"Other\"), the related property "
          "OtherControllerType contains a string description of the "
          "type of the controller." ),
       ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8" },
       Values { "Unknown", "Other", "Ethernet", "IB", "FC", "FDDI",
                "ATM", "Token Ring", "Frame Relay" },
       ModelCorrespondence { "CIM_PortController.OtherControllerType" }]
   uint16 ControllerType = 4;

};
```

```
// ===================================================================
// BROCADE_FCPortStatistics
// ===================================================================

    [Description (
       "This represents the statistics for the FC port." )]
class BROCADE_FCPortStatistics : CIM_FCPortStatistics {

      [Override ( "BytesTransmitted" ),
       Description (
          "The total number of bytes that are transmitted, "
          "including framing characters." ),
       Units ( "Bytes" ),
       Counter, MappingStrings { "MIB.IETF|MIB-II.ifOutOctets",
          "MIF.DMTF|Network Adapter 802 Port|001.7" },
       PUnit ( "byte" )]
   uint64 BytesTransmitted;

      [Override ( "BytesReceived" ),
       Description (
          "The total number of bytes that are received, including "
          "framing characters." ),
       Units ( "Bytes" ),
       Counter, MappingStrings { "MIB.IETF|MIB-II.ifInOctets",
          "MIF.DMTF|Network Adapter 802 Port|001.9" },
       PUnit ( "byte" )]
   uint64 BytesReceived;

      [Override ( "PacketsTransmitted" ),
       Description (
          "The total number of packets that are transmitted." ),
       Counter]
   uint64 PacketsTransmitted;

      [Override ( "PacketsReceived" ),
       Description (
          "The total number of packets that are received." ),
       Counter]
   uint64 PacketsReceived;

      [Override ( "LIPCount" ),
       Description (
          "LIPCount is the number of LIP events that have occurred "
          "on an arbitrated loop." ),
       Counter]
```

```
uint64 LIPCount;

   [Override ( "NOSCount" ),
    Description (
       "NOSCount is the number of NOS events that have occurred "
       "on the switched fabric." ),
    Counter]
uint64 NOSCount;

   [Override ( "ErrorFrames" ),
    Description (
       "ErrorFrames is the number of frames that have been "
       "received in error." ),
    Counter]
uint64 ErrorFrames;

   [Override ( "DumpedFrames" ),
    Description (
       "DumpedFrames is the number of frames that were lost due "
       "to a lack of host buffers available." ),
    Counter]
uint64 DumpedFrames;

   [Override ( "LinkFailures" ),
    Description (
       "LinkFailure is the number of times that a link error has "
       "occurred. This count is part of the Link Error Status "
       "Block (LESB)." ),
    Counter]
uint64 LinkFailures;

   [Override ( "LossOfSignalCounter" ),
    Description (
       "Number of times the signal is lost on the Port since the "
       "last reset of the Device. This count is part of the Link "
       "Error Status Block (LESB)." ),
    Counter]
uint64 LossOfSignalCounter;

   [Override ( "LossOfSyncCounter" ),
    Description (
       "Number of times that synchronization is lost on the Port "
       "since the last reset of the Device. Synchronization is "
       "assumed lost after a timeout period (identified by the "
       "Receiver TransmitterTimeout property) is exceeded. This "
       "count is part of the Link Error Status Block (LESB)." ),
    Counter]
```

```
   uint64 LossOfSyncCounter;

      [Override ( "PrimitiveSeqProtocolErrCount" ),
       Description (
          "Count of primitive sequence protocol errors that are "
          "detected at this port. This count is part of the Link "
          "Error Status Block (LESB)." ),
       Counter]
   uint64 PrimitiveSeqProtocolErrCount;

      [Override ( "CRCErrors" ),
       Description (
          "Number of times that the CRC in a frame does not match "
          "the CRC that is computed by the receiver. This count is "
          "part of the Link Error Status Block (LESB)." ),
       Counter]
   uint64 CRCErrors;

      [Override ( "InvalidTransmissionWords" ),
       Description (
          "The number of transmission words that had an invalid "
          "character (8b10b code violation) in one or more of its "
          "characters, had a K28.5 (8b10b control) in its second, "
          "third, or fourth character position, or had an incorrect "
          "Beginning Running Disparity. This count is part of the "
          "Link Error Status Block (LESB)." ),
       Counter]
   uint64 InvalidTransmissionWords;

};


// ===================================================================
// BROCADE_AdapterSoftwareIdentity
// ===================================================================

   [Description (
       "SoftwareIdentity provides descriptive information about a "
       "software component for asset tracking and/or installation "
       "dependency management." )]

class BROCADE_AdapterSoftwareIdentity : CIM_SoftwareIdentity {

      [Override ( "InstanceID" ),
       Key, Description (
          "This property opaquely and uniquely identifies a software "
          "entity which could either be a driver or firmware or BIOS.")]
   string InstanceID;
```

```
      [Override ( "VersionString" ),
       Description (
          "A string representing the complete software version "
          "information." )]
   string VersionString;

      [Override ( "Manufacturer" ),
       Description (
          "Manufacturer of this software." )]
   string Manufacturer;

      [Override ( "Classifications" ),
       Description (
          "An array of enumerated integers that classify this "
          "software which MAY be instrumentation (value=5) or firmware "
          "and diagnostic software (10 and 7). The use of value 6, Firmware/BIOS, "
          "is being deprecated. Instead, either the value 10 "
          "(Firmware) and/or 11 (BIOS/FCode) SHOULD be used." ),
       ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
          "10", "11", "12", "13", "..", "0x8000..0xFFFF" },
       Values { "Unknown", "Other", "Driver",
          "Configuration Software", "Application Software",
          "Instrumentation", "Firmware/BIOS", "Diagnostic Software",
          "Operating System", "Middleware", "Firmware",
          "BIOS/FCode", "Support/Service Pack", "Software Bundle",
          "DMTF Reserved", "Vendor Reserved" },
       ArrayType ( "Indexed" ),
       ModelCorrespondence {
          "CIM_SoftwareIdentity.ClassificationDescriptions" }]
   uint16 Classifications[];

};

// ===================================================================
// BROCADE_PhysicalPackage
// ===================================================================

    [Description (
       "The PhysicalPackage class represents PhysicalElements that "
       "contain or host other components. Examples are a Rack "
       "enclosure or an adapter Card." )]

class BROCADE_PhysicalPackage : CIM_PhysicalPackage {
```

```
      [Override ( "Tag" ),
       Key, Description (
          "An arbitrary string that uniquely identifies the FC HBA "
          "and serves as the key of the Element. "
          "The Tag property can contain information such as asset "
          "tag or serial number data." ),
       MaxLen ( 256 )]
   string Tag;

      [Override ( "CreationClassName" ),
       Key, Description (
          "CreationClassName indicates the name of the class or the "
          "subclass used in the creation of an instance. When used "
          "with the other key properties of this class, this "
          "property allows all instances of this class and its "
          "subclasses to be uniquely identified." ),
       MaxLen ( 256 )]
   string CreationClassName;

      [Override ( "Manufacturer" ),
       Description (
          "The name of the organization responsible for producing "
          "the FC HBA. This organization might be the "
          "entity from whom the FC HBA is purchased, but this is "
          "not necessarily true. The latter information is "
          "contained in the Vendor property of CIM_Product." ),
       MaxLen ( 256 ),
       MappingStrings { "MIB.IETF|Entity-MIB.entPhysicalMfgName",
          "MIF.DMTF|FRU|003.4" }]
   string Manufacturer;

      [Override ( "Model" ),
       Description (
          "The name by which the FC HBA is generally known." ),
       MaxLen ( 256 ),
       MappingStrings { "MIB.IETF|Entity-MIB.entPhysicalDescr",
          "MIF.DMTF|FRU|003.5" }]
   string Model;

// Extended property
      [Description (
          "Field Replaceable Unit (FRU) number used to identify/replace "
          "the part installed or attached to your computer." ),
       MaxLen ( 256 )]
};
```

```
// ===================================================================
// BROCADE_Product
// ===================================================================

class BROCADE_Product : CIM_Product {

      [Override("ElementName"),
       Description (
          "A user-friendly name for the product which could be as "
          "same as the Name property.")]
   string ElementName;

      [Override ( "Name" ),
       Key, Description ( "The name of the product." ),
       MaxLen ( 256 ),
       MappingStrings { "MIF.DMTF|ComponentID|001.2" },
       ModelCorrespondence { "PRS_Product.ProductName" }]
   string Name;

      [Override ( "IdentifyingNumber" ),
       Key, Description (
          "The product identification number such as a serial number "
          "for the FC HBA." ),
       MaxLen ( 64 ),
       MappingStrings { "MIF.DMTF|ComponentID|001.4" }]
   string IdentifyingNumber;

      [Override ( "Vendor" ),
       Key, Description (
          "The name of the Product\'s supplier, or entity selling "
          "the Product (the manufacturer, reseller, OEM, etc.). "),
       MaxLen ( 256 ),
       MappingStrings { "MIF.DMTF|ComponentID|001.1" },
       ModelCorrespondence { "PRS_Product.Vendor" }]
   string Vendor;

      [Override ( "Version" ),
       Key, Description ( "Product version information." ),
       MaxLen ( 64 ),
       MappingStrings { "MIF.DMTF|ComponentID|001.3" },
       ModelCorrespondence { "PRS_Product.Version" }]
   string Version;

};
```

```
// ==================================================================
// BROCADE_LogicalPortGroup
// ==================================================================

    [Description (
       "A collection of one or more ports that are logically grouped "
       "for administrative and discovery or topology purposes. "
       "LogicalPortGroups define port collections for access control, "
       "or for use in routing policy or other management tasks. For "
       "example, in Fibre Channel and Infiniband, a LogicalPortGroup "
       "represents the concept of a \'node\'." )]
class BROCADE_LogicalPortGroup : CIM_LogicalPortGroup {

      [Override("InstanceID"),
       Key, Description (
          "Within the scope of the instantiating Namespace, "
          "InstanceID opaquely and uniquely identifies an instance "
          "of this class. To make sure uniqueness within the "
          "NameSpace, the value of InstanceID should be constructed "
          "using the following \'preferred\' algorithm: \n"
          "<OrgID>:<LocalID> \n"
          "Where <OrgID> and <LocalID> are separated by a colon "
          "\':\', and where <OrgID> must include a unique name. It "
          "can be a copyrighted, trademarked, or otherwise unique "
          "name that is owned by the business entity that is "
          "creating or defining the InstanceID. Or, it could be a "
          "registered ID that is assigned to the business entity by "
          "a recognized global authority.(This requirement is "
          "similar to the <Schema Name>_<Class Name> structure of "
          "Schema class names.) In addition, to make sure uniqueness "
          "<OrgID> must not contain a colon (\':\'). When using "
          "this algorithm, the first colon to appear in InstanceID "
          "must appear between <OrgID> and <LocalID>. \n"
          "<LocalID> is chosen by the business entity and should "
          "not be re-used to identify different underlying "
          "(real-world) elements. If the above \'preferred\' "
          "algorithm is not used, the defining entity must ensure "
          "that the resulting InstanceID is not re-used as any of "
          "InstanceIDs produced by this or other providers for the "
          "NameSpace of this instance. \n"
          "For DMTF-defined instances, the \'preferred\' algorithm "
          "must be used with the <OrgID> set to \'CIM\'." )]
   string InstanceID;
```

```
      [Override("Name"),
       Description (
          "The Name property defines the identity by which the "
          "LogicalPortGroup is known." ),
       MaxLen ( 256 ),
       ModelCorrespondence { "CIM_LogicalPortGroup.NameFormat" }]
   string Name;

      [Override("NameFormat"),
       Description (
          "The NameFormat property identifies how the Name of the "
          "LogicalPortGroup is generated." ),
       ValueMap { "Unknown", "Other", "WWN", "GUID" },
       MaxLen ( 64 ),
       ModelCorrespondence { "CIM_LogicalPortGroup.Name",
          "CIM_LogicalPortGroup.OtherNameFormat" }]
   string NameFormat;

      [Override("OtherNameFormat"),
       Description (
          "A string that describes how the LogicalPortGroup is "
          "identified when the NameFormat is \"Other\"." ),
       ModelCorrespondence { "CIM_LogicalPortGroup.Name" }]
   string OtherNameFormat;

      [Override("ElementName"),

Description (
          "A user-friendly name for the host containing the HBAs "
          "installed. This property allows each instance to define a "
          "user-friendly name in addition to its key properties, identity "
          "data, and description information.")]
   string ElementName;

};

// ===================================================================
// BROCADE_AlarmDevice
// ===================================================================
class BROCADE_AlarmDevice : CIM_AlermDevice {
[Override ("DeviceID"), Key, MaxLen (256),
       Description (
          "An address or identifying information to uniquely name "
          "the LED associated with the port.")]
   string DeviceID;
```

```
   [Override("CreationClassName"), Key, MaxLen (256),
    Description (
       "CreationClassName indicates the name of the class.  When used "
       "with the other key properties of this class, this property "
       "allows all instances of this class to be uniquely identified.")]
string CreationClassName;

   [Override("SystemCreationClassName"), Key, MaxLen (256),
     Description (
        "The scoping system's creation class name.  The scoping "
        "system is the host in which the adapter is installed.")]
string SystemCreationClassName;

   [Override("SystemName"), Key, MaxLen (256),
    Description (
       "The scoping system's Name property. This property represents "
       "the name of the host computer system.")]
string SystemName;

   [Description ( "Boolean indicating that the Alarm is visible." )]
boolean VisibleAlarm;

   [Description (
       "Urgency is an enumerated value that indicates the "
       "relative frequency at which the Alarm flashes, vibrates "
       "and/or emits audible tones." ),
    ValueMap { "0", "1", "2", "3", "4", "5", "6" },
    Values { "Unknown", "Other", "Not Supported",
       "Informational", "Non-Critical", "Critical",
       "Unrecoverable" }]
uint16 Urgency;

   [Override ( "SetAlarmState" ),
    Description (
       "SetAlarmState is a method for defining the current state "
       "of the Alarm. Its input parameter, RequestedAlarmState, "
       "is specified using the Values list of AlarmDevice\'s "
       "AlarmState property. SetAlarmState returns 0 if the "
       "request is successfully implemented, 1 if the specified "
       "RequestedAlarm State is not supported, and some other "
       "value if any other error occurred. In a subclass, the "
       "set of possible return codes should be specified using a "
       "ValueMap qualifier on the method. The strings to which "
       "the ValueMap contents are \'translated\' should be "
       "specified as a Values array qualifier." )]
```

```
   uint32 SetAlarmState(
         [IN, Description ( "The desired state for the alarm." ),
          ValueMap { "0", "1", "2", "3" },
          Values { "Unknown", "Off", "Steady", "Alternating" }]
      uint16 RequestedAlarmState)
};

//===========================================================================
// ASSOCIATIONS
// ===========================================================================


// ===========================================================================
// BROCADE_ElementStatisticalData
// ===========================================================================

   [Association,
    Description (
       "CIM_ElementStatisticalData is an association that relates a "
       "ManagedElement to its StatisticalData." )]

class BROCADE_ElementStatisticalData : CIM_ElementStatisticalData {

      [Override ( "ManagedElement" ),
       Key, Min ( 1 ),
       Max ( 1 ),
       Description (
          "The FC port for which statistical or metric data "
          "is defined." )]
   CIM_ManagedElement REF ManagedElement;

      [Override ( "Stats" ),
       Key, Description ( "The statistic information/object." )]
   CIM_StatisticalData REF Stats;


};
```

```
// ===================================================================
// BROCADE_ControlledBy
// ===================================================================

   [Association,
    Description (
       "The ControlledBy relationship indicates which Devices are "
       "controlled by a Port controller present in the HBA." )]

class BROCADE_ControlledBy : CIM_ControlledBy {

      [Override ( "Antecedent" ),
       Description ( "The Port Controller." )]
   CIM_Controller REF Antecedent;

      [Override ( "Dependent" ),
       Description ( "The FC port." )]
   CIM_LogicalDevice REF Dependent;

};


// ===================================================================
// BROCADE_AdapterElementSoftwareIdentity
// ===================================================================

   [Association,
    Description (
       "ElementSoftwareIdentity allows a Managed Element to report its "
       "software related asset information (firmware, drivers, "
       "configuration software, and etc.)" )]

class BROCADE_AdapterElementSoftwareIdentity : CIM_ElementSoftwareIdentity {

      [Override ( "Antecedent" ),
       Description ( "A LogicalElement\'s Software Asset." )]
   CIM_SoftwareIdentity REF Antecedent;

      [Override ( "Dependent" ),
       Description (
          "The ManagedElement that requires or uses the software." )]
   CIM_ManagedElement REF Dependent;


};
```

```
// ===================================================================
// BROCADE_InstalledSoftwareIdentity
// ===================================================================

   [Association,
    Description (
       "The InstalledSoftwareIdentity association identifies the "
       "System on which a SoftwareIdentity is installed." )]

class BROCADE_InstalledSoftwareIdentity : CIM_InstalledSoftwareIdentity {

      [Override ( "System" ),
       Key, Description (
          "The system on which the software is installed." )]
   CIM_System REF System;

      [Override ( "InstalledSoftware" ),
       Key, Description ( "The SoftwareIdentity that is installed." )]
   CIM_SoftwareIdentity REF InstalledSoftware;


};

// ===================================================================
// BROCADE_Realizes
// ===================================================================
   [Association,
    Description (
       "The association that defines the mapping "
       "between LogicalDevices and the PhysicalElements that implement "
       "them." )]
class BROCADE_Realizes : CIM_Realizes {

      [Override ( "Antecedent" ),
       Description (
          "The physical component that implements the FC HBA installed"
          " on the host." )]
   CIM_PhysicalElement REF Antecedent;

      [Override ( "Dependent" ),
       Description ( "The FC HBA installed on the host." )]
   CIM_LogicalDevice REF Dependent;
```

```
};

// ===================================================================
// BROCADE_ProductPhysicalComponent
// ===================================================================

   [Association, Aggregation, Composition,
    Description (
       "Indicates that the referenced PhysicalElement is acquired as "
       "part of a Product." )]

class BROCADE_ProductPhysicalComponent : CIM_ProductPhysicalComponent {

      [Override ( "GroupComponent" ),
       Max ( 1 ),
       Description ( "The Product." )]
   CIM_Product REF GroupComponent;

      [Override ( "PartComponent" ),
       Description (
          "The PhysicalElement which is a part of the Product." )]
   CIM_PhysicalElement REF PartComponent;

};

// ===================================================================
// BROCADE_PortControllerSystemDevice
// ===================================================================

   [Association, Aggregation, Composition,
    Description (
       "LogicalDevices can be aggregated by a System. This "
       "relationship is made explicit by the SystemDevice association." )]

class BROCADE_PortControllerSystemDevice : CIM_SystemDevice {

      [Aggregate, Override ( "GroupComponent" ),
       Min ( 1 ),
       Max ( 1 ),
       Description ( "The host computer system having the HBAs installed." )]
   CIM_System REF GroupComponent;

      [Override ( "PartComponent" ),
       Weak, Description (
          "The FC HBA installed on the host system." )]
   CIM_LogicalDevice REF PartComponent;
};
```

```
// ==================================================================
//  BROCADE_MemberOfCollection
// ==================================================================
   [Association, Aggregation,
    Description (
       "CIM_MemberOfCollection is an aggregation used to establish "
       "membership of ManagedElements in a Collection." )]
class BROCADE_MemberOfCollection : CIM_MemberOfCollection {

      [Key, Aggregate, Description (
          "The Collection that aggregates members." )]
   CIM_Collection REF Collection;

      [Key, Description ( "The aggregated member of the Collection." )]
   CIM_ManagedElement REF Member;

};

// ==================================================================
//  BROCADE_HostedCollection
// ==================================================================
   [Association,
    Description (
       "HostedCollection defines a SystemSpecificCollection in the "
       "context of a scoping System. It represents a Collection that "
       "has meaning only in the context of a System, a Collection "
       "whose elements are restricted by the definition of the System, "
       "or both of these types of Collections." )]
class BROCADE_HostedCollection : CIM_HostedCollection {

      [Override ( "Antecedent" ),
       Min ( 1 ),
       Max ( 1 ),
       Description ( "The scoping system." )]
   CIM_System REF Antecedent;

      [Override ( "Dependent" ),
       Description (
          "The collection defined in the context of a system." )]
   CIM_SystemSpecificCollection REF Dependent;

};
```

```
// ==================================================================
// BROCADE_AssociatedAlarm
// ==================================================================
   [Association,
    Description (
       "LogicalDevices may have one or more AlarmDevices associated "
       "with them, in order to indicate problem situations. This "
       "relationship is indicated by the AssociatedAlarm dependency." )]
class BROCADE_AssociatedAlarm : CIM_AssociatedAlarm {

      [Override ( "Antecedent" ),
       Description ( "The AlarmDevice." )]
   CIM_AlarmDevice REF Antecedent;

      [Override ( "Dependent" ),
       Description ( "The LogicalDevice that is alarmed." )]
   CIM_LogicalDevice REF Dependent;

};
```

//FC Initiator Ports subprofile

```
// ==================================================================
// BROCADE_FCPort
// ==================================================================

   [Description (
      "This represents a single fibre channel port on the FC "
      "HBA installed on the host computer system.")]
class BROCADE_FCPort : CIM_FCPort {

      [Override ( "DeviceID" ), Key, MaxLen (256),
       Description (
          "An address or identifying information to uniquely name "
          "the port. This is the unique Port WWN (PWWN) for the port "
          "present in the FC HBA.")]
   string DeviceID;

      [Override ( "CreationClassName" ), Key, MaxLen (256),
       Description (
          "CreationClassName indicates the name of the class.  When used "
          "with the other key properties of this class, this property "
          "allows all instances of this class to be uniquely identified.")]
   string CreationClassName;

      [Override ( "SystemCreationClassName" ), Key, MaxLen (256),
        Description (
           "The scoping system's creation class name.  The scoping "
```

```
        "system is the host in which the FC HBA containing this port "
        "is installed.")]
string SystemCreationClassName;

   [Override ( "SystemName" ), Key, MaxLen (256),
    Description (
       "The scoping system's Name property. This property represents "
       "the name of the host computer system.")]
string SystemName;

   [Override ("OperationalStatus"),
    Description (
       "Indicates the current status of the FC port. Many of the "
       "enumeration values are self-explanatory."),
    ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
       "10", "11", "12", "13", "14", "15", "16", "17", "18",
       "..", "0x8000.." },
    Values { "Unknown", "Other", "OK", "Degraded", "Stressed",
       "Predictive Failure", "Error", "Non-Recoverable Error",
       "Starting", "Stopping", "Stopped", "In Service",
       "No Contact", "Lost Communication", "Aborted", "Dormant",
       "Supporting Entity in Error", "Completed", "Power Mode",
       "DMTF Reserved", "Vendor Reserved" },
    ArrayType ( "Indexed" ),
    ModelCorrespondence {
       "CIM_ManagedSystemElement.StatusDescriptions" }]
uint16 OperationalStatus[];


   [Override ( "UsageRestriction" ),
    Description (
       "Indicates whether the port is identifiable as a front end "
       "or back end port. It shall be 3 for ports restricted to "
       "back-end (initiator) only or 4 if the port is unrestricted."),
    ValueMap { "0", "2", "3", "4" },
    Values { "Unknown", "Front-end only", "Back-end only",
       "Not restricted" }]
uint16 UsageRestriction;

   [Override("ElementName"),
    Description (
       "A user-friendly name for the port present in the HBA "
       "installed. This property allows each instance to define a "
       "user-friendly name in addition to its key properties, identity "
       "data, and description information. The format is "
       "<Node WWN:Port WWN>")]
string ElementName;
```

```
      [Override ( "Speed" ),
       Description (
          "The current bandwidth of the Port in Bits per Second. "
          "For ports that vary in bandwidth or for those where no "
          "accurate estimation can be made, this property should "
          "contain the nominal bandwidth." ),
       Units ( "Bits per Second" ),
       MappingStrings { "MIB.IETF|MIB-II.ifSpeed",
          "MIF.DMTF|Network Adapter 802 Port|001.5" },
       PUnit ( "bit / second" )]
   uint64 Speed;

      [Override ( "MaxSpeed" ),
       Description (
          "The maximum supported speed of the port in Bits per Second." ),
       Units ( "Bits per Second" ),
       PUnit ( "bit / second" )]
   uint64 MaxSpeed;

      [Override ( "LinkTechnology" ),
       Description (
          "An enumeration of the types of links. When set to 1 "
          "(\"Other\"), the related property OtherLinkTechnology "
          "contains a string description of the type of link." ),
       ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
          "10", "11" },
       Values { "Unknown", "Other", "Ethernet", "IB", "FC", "FDDI",
          "ATM", "Token Ring", "Frame Relay", "Infrared",
          "BlueTooth", "Wireless LAN" },
       ModelCorrespondence { "CIM_NetworkPort.OtherLinkTechnology" }]
   uint16 LinkTechnology;

      [Override("SupportedMaximumTransmissionUnit"),
       Description (
          "The maximum transmission unit (MTU) that can be supported."
           ),
       Units ( "Bytes" ),
       PUnit ( "byte" )]
   uint64 SupportedMaximumTransmissionUnit;

      [Override ( "PortType" ),
       Description (
          "The specific mode currently enabled for the Port. gotiated port."),
       ValueMap { "0", "1", "10", "11", "12", "13", "14", "15",
          "16", "17", "18", "16000..65535" },
       Values { "Unknown", "Other", "N", "NL", "F/NL", "Nx", "E",
          "F", "FL", "B", "G", "Vendor Reserved" }]
   uint16 PortType;
};
```

```
// ==================================================================
// BROCADE_SCSIProtocolEndpoint
// ==================================================================

   [UMLPackagePath ( "CIM::Network::ProtocolEndpoints" ),
    Description (
       "A SCSIProtocolEndpoint represents the protocol (command) "
       "aspects of a logical SCSI port, independent of the "
       "connection/transport. SCSIProtocolEndpoint is either directly "
       "or indirectly associated to one or more instances of "
       "LogicalPort (via PortImplementsEndpoint) depending on the "
       "underlying transport. Indirect associations aggregate one or "
       "more LogicalPorts using intermediate ProtocolEndpoints (iSCSI, "
       "etc). SCSIProtocolEndpoint is also associated to a "
       "SCSIProtocolController, representing the SCSI device." )]
class BROCADE_SCSIProtocolEndpoint : CIM_SCSIProtocolEndpoint {

      [Override ( "CreationClassName" ), Key, MaxLen (256),
       Description (
          "CreationClassName indicates the name of the class.  When used "
          "with the other key properties of this class, this property "
          "allows all instances of this class to be uniquely identified.")]
   string CreationClassName;

      [Override ( "SystemCreationClassName" ), Key, MaxLen (256),
        Description (
           "The scoping system's creation class name.  The scoping "
           "system is the host in which the FC HBA containing this port "
           "is installed.")]
   string SystemCreationClassName;

      [Override ( "SystemName" ), Key, MaxLen (256),
       Description (
          "The scoping system's Name property. This property represents "
          "the name of the host computer system.")]
   string SystemName;

      [Override ( "Name" ),
       Description (
          "The SCSI identifier for the target or initiator device, "
          "in the format appropriate for the ConnectionType. If a "
          "ConnectionType specific subclass is defined, the "
          "subclass may override Name to define the format. For "
          "other ConnectionTypes, the format (and content) should "
          "match that of PermamnentAddress of the corresponding "
          "LogicalPort." ),
       MaxLen ( 256 ),
       MappingStrings {
          "SPC.INCITS-T10 |Protocol Specific Parameters | Name" },
```

```
       ModelCorrespondence {
          "CIM_SCSIProtocolEndpoint.ConnectionType",
          "CIM_SCSIProtocolEndpoint.OtherConnectionType" }]
   string Name;

      [Description (
          "The supported connection type for this endpoint. The "
          "connection type may be needed before the port(s) are "
          "associated and also is used in some SCSI commands." ),
       ValueMap { "1", "2", "3", "4", "5", "6", "7", "8", "9" },
       Values { "Other", "Fibre Channel", "Parallel SCSI", "SSA",
          "IEEE 1394", "RDMA", "iSCSI", "SAS", "ADT" },
       MappingStrings {
          "SPC.INCITS-T10 | Protocol Identifier | Values" },
       ModelCorrespondence { "CIM_SCSIProtocolEndpoint.Name",
          "CIM_SCSIProtocolEndpoint.OtherConnectionType" }]
   uint16 ConnectionType;

      [Description (
          "For iSCSI, each SCSIProtocolEndpoint MUST act as either "
          "a target or an initiator endpoint. Other transports "
          "allow a SCSI PE to act as both an initiator and target "
          "endpoint. This property indicates which role this "
          "ProtocolEndpoint implements." ),
       ValueMap { "0", "2", "3", "4" },
       Values { "Unknown", "Initiator", "Target",
          "Both Initiator and Target" }]
   uint16 Role;

      [Description (
          "For ports on a target device, the port number, relative "
          "to the storage system. 0 is reserved by T10, 1 is port "
          "A, 2 is port B, etc. These numbers are used in SCSI "
          "commands that operate on target port groups." ),
       MinValue ( 1 ),
       MappingStrings {
          "SPC.INCITS-T10 | RelativeTargetPort | IdentifierFormat" }]
   uint32 TargetRelativePortNumber;

      [Description (
          "The connection type, if ConnectionType is \"Other\"." ),
       ModelCorrespondence { "CIM_SCSIProtocolEndpoint.Name",
          "CIM_SCSIProtocolEndpoint.ConnectionType" }]
   string OtherConnectionType;

};
```

```
// ==================================================================
// ASSOCIATIONS
// ==================================================================

// ==================================================================
// BROCADE_FCPortSystemDevice
// ==================================================================

   [Association, Aggregation, Composition,
    Description (
       "LogicalDevices can be aggregated by a System. This "
       "relationship is made explicit by the SystemDevice association." )]
class BROCADE_FCPortSystemDevice : CIM_SystemDevice {

      [Aggregate, Override ( "GroupComponent" ),
       Min ( 1 ),
       Max ( 1 ),
       Description ( "The host system having the FC HBAs installed." )]
   CIM_System REF GroupComponent;

      [Override ( "PartComponent" ),
       Weak, Description (
          "The FC port present in the FC HBA installed on the host"
          " system." )]
   CIM_LogicalDevice REF PartComponent;

};

// ==================================================================
// BROCADE_HostedAccessPoint
// ==================================================================

class BROCADE_HostedAccessPoint : CIM_HostedAccessPoint {
};

// ==================================================================
// BROCADE_DeviceSAPImplementation
// ==================================================================
   [Association,
    Description (
       "An association that models a host driver path to a SCSI "
       "logical unit. Each permutation of initiator and target "
       "ProtocolEndpoints and logical units is considered a separate "
       "path. This class describes end-to-end path behavior such as "
       "properties and operations commonly used in multipath "
       "management." )]
```

```
class BROCADE_SCSIInitiatorTargetLogicalUnitPath : CIM_SCSIInitiatorTargetLogicalUnitPath {

      [Override ( "Initiator" ),
       Key, Description ( "An initiator endpoint." )]
   CIM_SCSIProtocolEndpoint REF Initiator;

      [Override ( "Target" ),
       Key, Description ( "A target endpoint." )]
   CIM_SCSIProtocolEndpoint REF Target;
[Override ( "LogicalUnit" ),
       Key, Description (
          "A subclass of LogicalDevice representing a SCSI Logical "
          "Unit (such as StorageVolume or TapeDrive)." )]
   CIM_LogicalDevice REF LogicalUnit;

};
```

// Profile Registration Profile

```
// ===================================================================
// BROCADE_RegisteredProfile
// ===================================================================

   [Description (
       "A RegisteredProfile describes a set of CIM Schema classes with "
       "required properties and/or methods, necessary to manage a "
       "real-world entity or to support a usage scenario, in an "
       "interoperable fashion. RegisteredProfiles can be defined by "
       "the DMTF or other standards organizations. Note that this "
       "class should not be confused with CIM_Profile, which collects "
       "SettingData instances, to be applied as a \'configuration "
       "profile\' for an element. \n"
       "A RegisteredProfile is a named \'standard\' for CIM-based "
       "management of a particular System, subsystem, Service or other "
       "entity, for a specified set of uses. It is a complete, "
       "standalone definition, as opposed to the subclass "
       "RegisteredSubProfile, which requires a scoping profile for "
       "context. \n"
       "The uses for a RegisteredProfile or SubProfile MUST be "
       "specified in the document that defines the profile. Examples "
       "of Profiles are to manage various aspects of an Operating "
       "System, Storage Array, or Database. The name of the profile is "
       "defined and scoped by its authoring organization." )]
class BROCADE_RegisteredProfile : CIM_RegisteredProfile {

      [Override ( "InstanceID" ),
       Key, Description (
          "This property uniquely identifies an instance "
          "of this class modelling the profile implementation." )]
```

```
string InstanceID;

   [Override ( "RegisteredOrganization" ),
    Required, Description (
       "The organization that defines this profile." ),
    ValueMap { "1", "2", "3", "4", "5", "6", "7", "8", "9", "10",
       "11", "12", "13", "14", "15", "16", "17", "18", "19",
       "20", ".." },
    Values { "Other", "DMTF", "CompTIA",
       "Consortium for Service Innovation", "FAST", "GGF",
       "INTAP", "itSMF", "NAC",
       //10
       "Northwest Energy Efficiency Alliance",
       "SNIA", "TM Forum", "The Open Group", "ANSI", "IEEE",
       "IETF", "INCITS", "ISO", "W3C", "OGF", "DMTF Reserved" },
    ModelCorrespondence {
       "CIM_RegisteredProfile.OtherRegisteredOrganization" }]
uint16 RegisteredOrganization;

   [Override ( "RegisteredName" ),
    Required, Description (
       "The name of this registered profile. Since multiple "
       "versions can exist for the same RegisteredName, the "
       "combination of RegisteredName, RegisteredOrganization, "
       "and RegisteredVersion MUST uniquely identify the "
       "registered profile within the scope of the organization." ),
    MaxLen ( 256 )]
string RegisteredName;

   [Override ( "RegisteredVersion" ),
    Required, Description (
       "The version of this profile. The string representing the "
       "version MUST be in the form: \n"
       "M + \".\" + N + \".\" + U \n"
       "Where: \n"
       "M - The major version (in numeric form) describing the "
       "profile\'s creation or last modification. \n"
       "N - The minor version (in numeric form) describing the "
       "profile\'s creation or last modification. \n"
       "U - The update (e.g. errata, patch, ..., in numeric "
       "form) describing the profile\'s creation or last "
       "modification." )]
string RegisteredVersion;

   [Override ( "AdvertiseTypes" ),
    Required, Description (
       "This property signifies the advertisement for the "
       "profile information. It is used by the advertising "
       "services of the WBEM infrastructure to determine what "
```

```
          "should be advertised, via what mechanisms. The property "
          "is an array so that the profile MAY be advertised using "
          "several mechanisms. Note: If this property is "
          "null/uninitialized, this is equivalent to specifying the "
          "value 2, \"Not Advertised\"." ),
       ValueMap { "1", "2", "3" },
       Values { "Other", "Not Advertised", "SLP" },
       ArrayType ( "Indexed" ),
       ModelCorrespondence {
          "CIM_RegisteredProfile.AdvertiseTypeDescriptions" }]
   uint16 AdvertiseTypes[];

};

// ===================================================================
// BROCADE_RegisteredSubProfile
// ===================================================================

   // TODO -> Modify the descriptions

   [Description (
       "A RegisteredSubProfile subclasses RegisteredProfile to "
       "indicate that a scoping profile is required to provide "
       "context. The latter is specified by the mandatory association, "
       "SubProfileRequiresProfile." )]

class BROCADE_RegisteredSubProfile : CIM_RegisteredSubProfile {

      [Override ( "InstanceID" ),
       Key, Description (
          "This property uniquely identifies an instance "
          "of this class modelling the profile implementation." )]
   string InstanceID;

      [Override ( "RegisteredOrganization" ),
       Required, Description (
          "The organization that defines this profile." ),
       ValueMap { "1", "2", "3", "4", "5", "6", "7", "8", "9", "10",
          "11", "12", "13", "14", "15", "16", "17", "18", "19",
          "20", ".." },
       Values { "Other", "DMTF", "CompTIA",
          "Consortium for Service Innovation", "FAST", "GGF",
          "INTAP", "itSMF", "NAC",
          //10
          "Northwest Energy Efficiency Alliance",
          "SNIA", "TM Forum", "The Open Group", "ANSI", "IEEE",
          "IETF", "INCITS", "ISO", "W3C", "OGF", "DMTF Reserved" },
```

```
       ModelCorrespondence {
          "CIM_RegisteredProfile.OtherRegisteredOrganization" }]
   uint16 RegisteredOrganization;

      [Override ( "RegisteredName" ),
       Required, Description (
          "The name of this registered profile. Since multiple "
          "versions can exist for the same RegisteredName, the "
          "combination of RegisteredName, RegisteredOrganization, "
          "and RegisteredVersion MUST uniquely identify the "
          "registered profile within the scope of the organization." ),
       MaxLen ( 256 )]
   string RegisteredName;

      [Override ( "RegisteredVersion" ),
       Required, Description (
          "The version of this profile. The string representing the "
          "version MUST be in the form: \n"
          "M + \".\" + N + \".\" + U \n"
          "Where: \n"
          "M - The major version (in numeric form) describing the "
          "profile\'s creation or last modification. \n"
          "N - The minor version (in numeric form) describing the "
          "profile\'s creation or last modification. \n"
          "U - The update (e.g. errata, patch, ..., in numeric "
          "form) describing the profile\'s creation or last "
          "modification." )]
   string RegisteredVersion;

      [Override ( "AdvertiseTypes" ),
       Required, Description (
          "This property signifies the advertisement for the "
          "profile information. It is used by the advertising "
          "services of the WBEM infrastructure to determine what "
          "should be advertised, via what mechanisms. The property "
          "is an array so that the profile MAY be advertised using "
          "several mechanisms. Note: If this property is "
          "null/uninitialized, this is equivalent to specifying the "
          "value 2, \"Not Advertised\"." ),
       ValueMap { "1", "2", "3" },
       Values { "Other", "Not Advertised", "SLP" },
       ArrayType ( "Indexed" ),
       ModelCorrespondence {
          "CIM_RegisteredProfile.AdvertiseTypeDescriptions" }]
   uint16 AdvertiseTypes[];

};
```

```
// ===================================================================
// BROCADE_ProfileSoftwareIdentity
// ===================================================================

   [Description (
       "SoftwareIdentity provides descriptive information about a "
       "software component for asset tracking and/or installation "
       "dependency management." )]
class BROCADE_ProfileSoftwareIdentity : CIM_SoftwareIdentity {

      [Override ( "InstanceID" ),
       Key, Description (
          "This property opaquely and uniquely identifies a software "
          "entity which models the implementation of the profile "
          "in question." )]
   string InstanceID;

      [Override ( "VersionString" ),
       Description (
          "A string representing the complete software version "
          "information." )]
   string VersionString;

      [Override ( "Manufacturer" ),
       Description (
          "Manufacturer of this software." )]
   string Manufacturer;

      [Override ( "Classifications" ),
       Description (
          "An array of enumerated integers that classify this "
          "software which MAY be instrumentation (value=5) or firmware "
          "and diagnostic software (10 and 7). The use of value 6, Firmware/BIOS, "
          "is being deprecated. Instead, either the value 10 "
          "(Firmware) and/or 11 (BIOS/FCode) SHOULD be used." ),
       ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
          "10", "11", "12", "13", "..", "0x8000..0xFFFF" },
       Values { "Unknown", "Other", "Driver",
          "Configuration Software", "Application Software",
          "Instrumentation", "Firmware/BIOS", "Diagnostic Software",
          "Operating System", "Middleware", "Firmware",
          "BIOS/FCode", "Support/Service Pack", "Software Bundle",
          "DMTF Reserved", "Vendor Reserved" },
       ArrayType ( "Indexed" ),
       ModelCorrespondence {
          "CIM_SoftwareIdentity.ClassificationDescriptions" }]
   uint16 Classifications[];
};
```

```
// ==================================================================
// ASSOCIATIONS
// ==================================================================

// ==================================================================
// BROCADE_SubProfileRequiresProfile
// ==================================================================
   [Association,
    Description (
       "A subprofile requires another RegisteredProfile for context. "
       "This association mandates the scoping relationship between a "
       "subprofile and its scoping profile." )]
class BROCADE_SubProfileRequiresProfile : CIM_SubProfileRequiresProfile {

      [Override ( "Antecedent" ),
       Min ( 1 ),
       Description (
          "The RegisteredProfile that is referenced/required by the "
          "subprofile." )]
   CIM_RegisteredProfile REF Antecedent;

      [Override ( "Dependent" ),
       Description (
          "A RegisteredSubProfile that requires a scoping profile, "
          "for context." )]
   CIM_RegisteredSubProfile REF Dependent;

};

// ==================================================================
// BROCADE_ElementConformsToProfile
// ==================================================================

   [Association,
    Description (
       "An association which defines the RegisteredProfiles to which "
       "the referenced ManagedElement is conformant." )]

class BROCADE_ElementConformsToProfile : CIM_ElementConformsToProfile {

      [Override ( "ConformantStandard" ),
       Key, Description (
          "The RegisteredProfile to which the ManagedElement conforms."
           )]
   CIM_RegisteredProfile REF ConformantStandard;
```

```
      [Override ( "ManagedElement" ),
       Key, Description (
          "The ManagedElement that conforms to the RegisteredProfile."
           )]
   CIM_ManagedElement REF ManagedElement;

};

// ===================================================================
// BROCADE_ProfileElementSoftwareIdentity
// ===================================================================

   [Association,
    Description (
       "ElementSoftwareIdentity allows a Managed Element to report its "
       "software related asset information (firmware, drivers, "
       "configuration software, and etc.)" )]

class BROCADE_ProfileElementSoftwareIdentity : CIM_ElementSoftwareIdentity {

      [Override ( "Antecedent" ),
       Description ( "A representation of some bundle of providers "
       " and supporting software that shares a version number." )]
   CIM_SoftwareIdentity REF Antecedent;

      [Override ( "Dependent" ),
       Description (
          "The profile whose implementation is represented by the "
          "associated software instance." )]
   CIM_ManagedElement REF Dependent;

};
```

// Host Discovered Resource Profile

```
// ===================================================================
// BROCADE_LogicalDisk
// ===================================================================

   [Description (
       "A LogicalDisk is a presentation of a contiguous range of "
       "logical blocks that is identifiable by applications such as "
       "filesystems via the Name field. LogicalDisks are "
       "typically built on a DiskPartition or other LogicalDisks (for "
       "instance, those exposed by a software volume manager).")]
```

```
class BROCADE_LogicalDisk : CIM_LogicalDisk {

      [Override ("DeviceID"), Key, MaxLen (256),
       Description (
          "An address or identifying information to uniquely name "
          "the Logical Disk." )]
   string DeviceID;

      [Override("CreationClassName"), Key, MaxLen (256),
       Description (
          "CreationClassName indicates the name of the class.  When used "
          "with the other key properties of this class, this property "
          "allows all instances of this class to be uniquely identified.")]
   string CreationClassName;

      [Override("SystemCreationClassName"), Key, MaxLen (256),
        Description (
           "The scoping system's creation class name.  The scoping "
           "system is the host in which this logical disk is present.")]
   string SystemCreationClassName;

      [Override("SystemName"), Key, MaxLen (256),
       Description (
          "The scoping system's Name property. This property represents "
          "the name of the host computer system.")]
   string SystemName;

      [Override ( "Name" ),
       Description ( "The OS device name." ),
       MappingStrings {
          "SPC.INCITS-T10| VPD 83, Association 0 | Identifier" },
       ModelCorrespondence { "CIM_StorageExtent.NameFormat",
          "CIM_StorageExtent.NameNamespace" }]
   string Name;

      [Override("ElementName"),
       Description (
          "A user-friendly name for the Logical Disk." )]
   string ElementName;

      [Override ( "NameFormat" ),
       Description (
          "LogicalDisk names shall use OS Device Name format." ),
       ValueMap { "1", "12" },
       Values { "Other", "OS Device Name" }]
   uint16 NameFormat = 12;
```

```
      [Override ( "NameNamespace" ),
       Description (
          "LogicalDisk names shall use OS Device Namespace." ),
       ValueMap { "1", "8" },
       Values { "Other", "OS Device Namespace" }]
   uint16 NameNamespace = 8;

      [Override ( "OtherIdentifyingInfo" ),
       Description (
          "The correlatable ID of the underlying logical unit." ),
       ArrayType ( "Indexed" ),
       MaxLen ( 256 ),
       ModelCorrespondence {
          "CIM_LogicalDevice.IdentifyingDescriptions" }]
   string OtherIdentifyingInfo[];

      [Override ( "IdentifyingDescriptions" ),
       Description (
          "An array of free-form strings providing explanations and "
          "details behind the entries in the OtherIdentifyingInfo "
          "array. Note, each entry of this array is related to the "
          "entry in OtherIdentifyingInfo that is located at the "
          "same index." ),
       ArrayType ( "Indexed" ),
       ModelCorrespondence { "CIM_LogicalDevice.OtherIdentifyingInfo" }]
   string IdentifyingDescriptions[];

      [Override ("OperationalStatus"),
       Description (
          "Indicates the current status of the Logical Disk."
          "Many of the enumeration values are self-explanatory."),
       ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
          "10", "11", "12", "13", "14", "15", "16", "17", "18",
          "..", "0x8000.." },
       Values { "Unknown", "Other", "OK", "Degraded", "Stressed",
          "Predictive Failure", "Error", "Non-Recoverable Error",
          "Starting", "Stopping", "Stopped", "In Service",
          "No Contact", "Lost Communication", "Aborted", "Dormant",
          "Supporting Entity in Error", "Completed", "Power Mode",
          "DMTF Reserved", "Vendor Reserved" },
       ArrayType ( "Indexed" ),
       ModelCorrespondence {
          "CIM_ManagedSystemElement.StatusDescriptions" }]
   uint16 OperationalStatus[];

};
```

```
// ===================================================================
// BROCADE_StorageExtent
// ===================================================================
class BROCADE_StorageExtent : CIM_StorageExtent {

      [Override ("DeviceID"), Key, MaxLen (256),
       Description (
          "An address or identifying information to uniquely name "
          "the Storage Extent." )]
   string DeviceID;

      [Override("CreationClassName"), Key, MaxLen (256),
       Description (
          "CreationClassName indicates the name of the class.  When used "
          "with the other key properties of this class, this property "
          "allows all instances of this class to be uniquely identified.")]
   string CreationClassName;

      [Override("SystemCreationClassName"), Key, MaxLen (256),
        Description (
           "The scoping system's creation class name.  The scoping "
           "system is the one that hosts this Storage Extent.")]
   string SystemCreationClassName;

      [Override("SystemName"), Key, MaxLen (256),
       Description (
          "The scoping system's Name property. This property represents "
          "the name of the host computer system.")]
   string SystemName;

      [Override ( "Name" ),
       Description ( "A unique identifier for the Extent." ),
       MappingStrings {
          "SPC.INCITS-T10| VPD 83, Association 0 | Identifier" },
       ModelCorrespondence { "CIM_StorageExtent.NameFormat",
          "CIM_StorageExtent.NameNamespace" }]
   string Name;

      [Override("ElementName"),
       Description (
          "A user-friendly name for the Logical Disk." )]
   string ElementName;
```

```
    [Override ( "NameFormat" ),
     Description (
        "The NameFormat list defined here applies to all "
        "StorageExtent subclasses. Please look at the "
        "Description in each subclass for guidelines on the "
        "approriate values for that subclass. Note that any "
        "of these formats could apply to a CompositeExtent." ),
     ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
        "10", "11", "12" },
     Values { "Unknown", "Other", "VPD83NAA6", "VPD83NAA5",
        "VPD83Type2", "VPD83Type1", "VPD83Type0", "SNVM",
        "NodeWWN", "NAA", "EUI64", "T10VID", "OS Device Name" },
     ModelCorrespondence { "CIM_StorageExtent.Name",
        "CIM_StorageExtent.NameNamespace",
        "CIM_StorageExtent.OtherNameFormat" }]
uint16 NameFormat = 12;

    [Description (
        "The NameNamespace value." ),
     ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8" },
     Values { "Unknown", "Other", "VPD83Type3", "VPD83Type2",
        "VPD83Type1", "VPD80", "NodeWWN", "SNVM",
        "OS Device Namespace" },
     MappingStrings {
        "SPC.INCITS-T10| VPD 83, Association 0 | Identifier" },
     ModelCorrespondence { "CIM_StorageExtent.Name",
        "CIM_StorageExtent.OtherNameNamespace",
        "CIM_StorageExtent.NameFormat" }]
uint16 NameNamespace;

    [Override ( "OtherIdentifyingInfo" ),
     Description (
        "The correlatable ID of the underlying logical unit." ),
     ArrayType ( "Indexed" ),
     MaxLen ( 256 ),
     ModelCorrespondence {
        "CIM_LogicalDevice.IdentifyingDescriptions" }]
string OtherIdentifyingInfo[];

    [Override ( "IdentifyingDescriptions" ),
     Description (
        "An array of free-form strings providing explanations and "
        "details behind the entries in the OtherIdentifyingInfo "
        "array. Note, each entry of this array is related to the "
        "entry in OtherIdentifyingInfo that is located at the "
        "same index." ),
     ArrayType ( "Indexed" ),
     ModelCorrespondence { "CIM_LogicalDevice.OtherIdentifyingInfo" }]
```

```
   string IdentifyingDescriptions[];

      [Override ("OperationalStatus"),
       Description (
          "Indicates the current status of the Storage Extent."
          "Many of the enumeration values are self-explanatory."),
       ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
          "10", "11", "12", "13", "14", "15", "16", "17", "18",
          "..", "0x8000.." },
       Values { "Unknown", "Other", "OK", "Degraded", "Stressed",
          "Predictive Failure", "Error", "Non-Recoverable Error",
          "Starting", "Stopping", "Stopped", "In Service",
          "No Contact", "Lost Communication", "Aborted", "Dormant",
          "Supporting Entity in Error", "Completed", "Power Mode",
          "DMTF Reserved", "Vendor Reserved" },
       ArrayType ( "Indexed" ),
       ModelCorrespondence {
          "CIM_ManagedSystemElement.StatusDescriptions" }]
   uint16 OperationalStatus[];

};

// ===================================================================
// BROCADE_TapeDrive
// ===================================================================
class BROCADE_TapeDrive : CIM_TapeDrive {

      [Override ("DeviceID"), Key, MaxLen (256),
       Description (
          "An address or identifying information to uniquely name "
          "the Tape Drive." )]
   string DeviceID;

      [Override("CreationClassName"), Key, MaxLen (256),
       Description (
          "CreationClassName indicates the name of the class.  When used "
          "with the other key properties of this class, this property "
          "allows all instances of this class to be uniquely identified.")]
   string CreationClassName;

      [Override("SystemCreationClassName"), Key, MaxLen (256),
        Description (
           "The scoping system's creation class name.  The scoping "
           "system is the one that hosts this Tape Drive.")]
   string SystemCreationClassName;
```

```
   [Override("SystemName"), Key, MaxLen (256),
    Description (
       "The scoping system's Name property. This property represents "
       "the name of the host computer system.")]
string SystemName;

   [Override ( "Name" ),
    Description ( "A unique identifier for the Tape Drive." ),
    MappingStrings {
       "SPC.INCITS-T10| VPD 83, Association 0 | Identifier" },
    ModelCorrespondence { "CIM_StorageExtent.NameFormat",
       "CIM_StorageExtent.NameNamespace" }]
string Name;

   [Override("ElementName"),
    Description (
       "A user-friendly name for the Logical Disk." )]
string ElementName;

   [Override ( "OtherIdentifyingInfo" ),
    Description (
       "The correlatable ID of the underlying logical unit." ),
    ArrayType ( "Indexed" ),
    MaxLen ( 256 ),
    ModelCorrespondence {
       "CIM_LogicalDevice.IdentifyingDescriptions" }]
string OtherIdentifyingInfo[];

   [Override ( "IdentifyingDescriptions" ),
    Description (
       "An array of free-form strings providing explanations and "
       "details behind the entries in the OtherIdentifyingInfo "
       "array. Note, each entry of this array is related to the "
       "entry in OtherIdentifyingInfo that is located at the "
       "same index." ),
    ArrayType ( "Indexed" ),
    ModelCorrespondence { "CIM_LogicalDevice.OtherIdentifyingInfo" }]
string IdentifyingDescriptions[];

   [Override ("OperationalStatus"),
    Description (
       "Indicates the current status of the Tape Drive."
       "Many of the enumeration values are self-explanatory."),
    ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
       "10", "11", "12", "13", "14", "15", "16", "17", "18",
       "..", "0x8000.." },
    Values { "Unknown", "Other", "OK", "Degraded", "Stressed",
       "Predictive Failure", "Error", "Non-Recoverable Error",
       "Starting", "Stopping", "Stopped", "In Service",
```

```
          "No Contact", "Lost Communication", "Aborted", "Dormant",
          "Supporting Entity in Error", "Completed", "Power Mode",
          "DMTF Reserved", "Vendor Reserved" },
       ArrayType ( "Indexed" ),
       ModelCorrespondence {
          "CIM_ManagedSystemElement.StatusDescriptions" }]
   uint16 OperationalStatus[];

};

// ===================================================================
// ASSOCIATIONS
// ===================================================================

// ===================================================================
// BROCADE_StorageResourcesSystemDevice
// ===================================================================

   [Association, Aggregation, Composition,
    Description (
       "LogicalDevices can be aggregated by a System. This "
       "relationship is made explicit by the SystemDevice association." )]

class BROCADE_StorageResourcesSystemDevice : CIM_SystemDevice {

      [Aggregate, Override ( "GroupComponent" ),
       Min ( 1 ),
       Max ( 1 ),
       Description ( "The host system having the FC HBAs installed." )]
   CIM_System REF GroupComponent;

      [Override ( "PartComponent" ),
       Weak, Description (
          "The storage resources discovered through the FC HBA installed "
          "on the host system." )]
   CIM_LogicalDevice REF PartComponent;

};
```

```
// Software Update subprofile

// ===================================================================
// BROCADE_HBASoftwareInstallationService
// ===================================================================


   [Description (
       "A service which provides methods to install (or update) Software "
       "Identities in ManagedElements." )]

class BROCADE_HBASoftwareInstallationService : CIM_SoftwareInstallationService {

      [Override ("Name"), Key, MaxLen (256),
       Description (
          "An unique identifier of the software installation service available "
          "in the system.")]
   string Name;

      [Override("CreationClassName"), Key, MaxLen (256),
       Description (
          "CreationClassName indicates the name of the class.  When used "
          "with the other key properties of this class, this property "
          "allows all instances of this class to be uniquely identified.")]
   string CreationClassName;

      [Override("SystemCreationClassName"), Key, MaxLen (256),
        Description (
           "The scoping system's creation class name.  The scoping "
           "system is the host which hosts this software installation "
           "service.")]
   string SystemCreationClassName;

      [Override("SystemName"), Key, MaxLen (256),
       Description (
          "The scoping system's Name property. This property represents "
          "the name of the host computer system.")]
   string SystemName;

      [Override("InstallFromURI"),
       Description (
          "Start a job to install software from a specific URI in a "
          "ManagedElement. \n"
          "Note that this method is provided to support existing, "
          "alternative download mechanisms (such as used for "
          "firmware download). The \'normal\' mechanism will be to "
          "use the InstallFromSoftwareIdentity method.\n"
          "If 0 is returned, the function completed successfully "
          "and no ConcreteJob instance was required. If 4096/0x1000 "
```

```
        "is returned, a ConcreteJob will be started to to perform "
        "the install. The Job\'s reference will be returned in "
        "the output parameter Job." ),
     ValueMap { "0", "1", "2", "3", "4", "5", "6", "..", "4096",
        "4097", "4098", "4099", "4100", "4101", "4102", "4103",
        "4104", "4105", "4106", "4107", "4108..32767",
        "32768..65535" },
     Values { "Job Completed with No Error", "Not Supported",
        "Unspecified Error", "Timeout", "Failed",
        "Invalid Parameter", "Target In Use", "DMTF Reserved",
        "Method Parameters Checked - Job Started",
        "Unsupported TargetType",
        "Unattended/silent installation not supported",
        "Downgrade/reinstall not supported", "Not enough memory",
        "Not enough swap-space", "Unsupported version transition",
        "Not enough disk space",
        "Software and target operating system mismatch",
        "Missing dependencies", "Not applicable to target",
        "URI not accessible", "Method Reserved", "Vendor Specific" }]
  uint32 InstallFromURI(
        [IN ( false ), OUT, Description (
            "Reference to the job (may be null if job completed)."
             )]
     CIM_ConcreteJob REF Job,
        [IN, Description (
            "A URI for the software based on RFC 2079." )]
     string URI,
        [IN, Description ( "The installation target." )]
     CIM_ManagedElement REF Target,
        [IN, Description (
            "Options to control the install process. \n"
            "See the InstallOptions parameter of the "
            "SoftwareInstallationService.InstallFromSoftwareIdentity "
            "method for the description of these values." ),
         ValueMap { "2", "3", "4", "5", "6", "7", "8", "9",
            "10", "11", "12", "..", "32768..65535" },
         Values { "Defer target/system reset",
            "Force installation", "Install", "Update", "Repair",
            "Reboot", "Password", "Uninstall", "Log",
            "SilentMode", "AdministrativeMode", "DMTF Reserved",
            "Vendor Specific" },
         ArrayType ( "Indexed" ),
         ModelCorrespondence {
            "CIM_SoftwareInstallationService.InstallFromURI.InstallOptionsValues[]",
            "CIM_SoftwareInstallationServiceCapabilities.SupportedInstallOptions[]" }]
     uint16 InstallOptions[],
        [IN, Description (
            "InstallOptionsValues is an array of strings "
            "providing additionalinformation to InstallOptions "
```

```
            "for the method to install the software. Each entry "
            "of this array is related to the entry in "
            "InstallOptions that is located at the same index "
            "providing additional information for "
            "InstallOptions. \n"
            "For further information on the use of "
            "InstallOptionsValues parameter, see the "
            "description of the InstallOptionsValues parameter "
            "of the "
            "SoftwareInstallationService.InstallFromSoftwareIdentity "
            "method." ),
         ArrayType ( "Indexed" ),
         ModelCorrespondence {
            "CIM_SoftwareInstallationService.InstallFromByteStream.InstallOptions[]" }]
      string InstallOptionsValues[]);

};

// ===================================================================
// BROCADE_HBASoftwareInstallationServiceCapabilities
// ===================================================================

   [Description (
       "The capabilities of the HBA software installation service hosted in "
       "the system.")]
class BROCADE_HBASoftwareInstallationServiceCapabilities :
CIM_SoftwareInstallationServiceCapabilities {

      [Override ( "InstanceID" ),
       Key, Description (
          "This property opaquely and uniquely identifies the capabilities"
          " of te software installation service available in the host." )]
   string InstanceID;

      [Override ( "SupportedInstallOptions" ),
       Description (
          "An enumeration indicating the specific install related "
          "options supported by this service. Since this is an "
          "array, multiple values may be specified. See the "
          "InstallOptions parameter of "
          "theSoftwareInstallationService.InstallFromSoftwareIdentity "
          "method for the description of these values." ),
       ValueMap { "2", "3", "4", "5", "6", "7", "8", "9", "10",
          "11", "12", "..", "32768..65535" },
       Values { "Defer target/system reset", "Force installation",
          "Install", "Update", "Repair", "Reboot", "Password",
          "Uninstall", "Log", "SilentMode", "AdministrativeMode",
          "DMTF Reserved", "Vendor Specific" },
```

```
       ModelCorrespondence {
          "CIM_SoftwareInstallationService.InstallFromSoftwareIdentity" }]
   uint16 SupportedInstallOptions[];

};

// ===================================================================
// ASSOCIATIONS
// ===================================================================


// ===================================================================
// BROCADE_HBASoftwareInstallationServiceHostedService
// ===================================================================

   [Association,
    Description (
       "An association between the software installation service and the "
       "System on which hosts the same serive.")]

class BROCADE_HBASoftwareInstallationServiceHostedService : CIM_HostedService {

      [Override ( "Antecedent" ),
       Min ( 1 ),
       Max ( 1 ),
       Description ( "The System hosting the software installation service." )]
   BROCADE_ComputerSystem REF Antecedent;

      [Override ( "Dependent" ),
       Weak, Description ( "The software installation service hosted on the "
                           "System." )]
   BROCADE_HBASoftwareInstallationService REF Dependent;

};

// ===================================================================
// BROCADE_HBASoftwareInstallationServiceElementCapabilities
// ===================================================================

   [Association,
    Description (
       "The association between Software Installation Service and its "
       "Capabilities. Note that the cardinality of the ManagedElement "
       "reference is Min(1), Max(1). This cardinality mandates the "
       "instantiation of the ElementCapabilities association for the "
       "referenced instance of Capabilities. ElementCapabilities "
       "describes the existence requirements and context for the "
       "referenced instance of ManagedElement. Specifically, the "
       "ManagedElement MUST exist and provides the context for the "
```

```
       "Capabilities." )]

class BROCADE_HBASoftwareInstallationServiceElementCapabilities : CIM_ElementCapabilities {

      [Override ( "ManagedElement" ),
       Key, Min ( 1 ),
       Max ( 1 ),
       Description ( "The Software Installation Service." )]
    BROCADE_HBASoftwareInstallationService REF ManagedElement;

      [Override ( "Capabilities" ),
       Key, Description (
          "The Capabilities of the associated service." )]
    BROCADE_HBASoftwareInstallationServiceCapabilities REF Capabilities;

};
```

// Access Point subprofile

```
// Classes

// ===================================================================
// BROCADE_RemoteServiceAccessPoint
// ===================================================================

   [Description (
       "RemoteServiceAccessPoint describes access or addressing "
       "information or a combination of this information for a remote "
       "connection that is known to a local network element. This "
       "provides the address information as to where the management "
       "tools could be accessed from." )]

class BROCADE_RemoteServiceAccessPoint : CIM_RemoteServiceAccessPoint {

      [Override ("Name"), Key, MaxLen (256),
       Description (
          "An unique identifier of for the remote access point for the"
          " management tools that are available remotely for the "
          "clients.") ]
   string Name;

      [Override("CreationClassName"), Key, MaxLen (256),
       Description (
          "CreationClassName indicates the name of the class.  When used "
          "with the other key properties of this class, this property "
          "allows all instances of this class to be uniquely identified.")]
   string CreationClassName;
```

```
      [Override("SystemCreationClassName"), Key, MaxLen (256),
        Description (
           "The scoping system's creation class name.  The scoping "
           "system is the host which hosts the management tools.")]
   string SystemCreationClassName;

      [Override("SystemName"), Key, MaxLen (256),
       Description (
          "The scoping system's Name property. This property represents "
          "the name of the host computer system.")]
   string SystemName;

      [Override ( "AccessInfo" ),
       Description (
          "Access or addressing information or a combination of "
          "this information for a remote connection. This "
          "information can be a host name, network address, or "
          "similar information." ),
       ModelCorrespondence {
          "CIM_RemoteServiceAccessPoint.InfoFormat" }]
   string AccessInfo;

      [Override ( "InfoFormat" ),
       Description (
          "An enumerated integer that describes the format and "
          "interpretation of the AccessInfo property." ),
       ValueMap { "1", "2", "3", "4", "5", "6", "7", "8", "9", "10",
          "11", "12", "13", "100", "101", "102", "103", "104",
          "200", "201", "202", "203", "204", "205", "..",
          "32768..65535" },
       Values { "Other", "Host Name", "IPv4 Address",
          "IPv6 Address", "IPX Address", "DECnet Address",
          "SNA Address", "Autonomous System Number", "MPLS Label",
          "IPv4 Subnet Address", "IPv6 Subnet Address",
          "IPv4 Address Range", "IPv6 Address Range", "Dial String",
          "Ethernet Address", "Token Ring Address", "ATM Address",
          "Frame Relay Address", "URL", "FQDN", "User FQDN",
          "DER ASN1 DN", "DER ASN1 GN", "Key ID", "DMTF Reserved",
          "Vendor Reserved" },
       ModelCorrespondence {
          "CIM_RemoteServiceAccessPoint.OtherInfoFormatDescription" }]
   uint16 InfoFormat;

};
```

```
// ==================================================================
// ASSOCIATIONS
// ==================================================================

// ==================================================================
// BROCADE_RemoteServiceHostedAccessPoint
// ==================================================================
   [Association,
    Description (
       "An association which associate the RemoteServiceAccessPoint to"
       " the System on which it is hosted.")]

class BROCADE_RemoteServiceHostedAccessPoint : CIM_HostedAccessPoint {

      [Override ( "Antecedent" ),
       Min ( 1 ),
       Max ( 1 ),
       Description ( "The hosting System." )]
   BROCADE_ComputerSystem REF Antecedent;

      [Override ( "Dependent" ),
       Weak, Description (
          "The remote service access points that are hosted on this "
          "system." )]
    BROCADE_RemoteServiceAccessPoint REF Dependent;

};
```

// Ethernet Port subprofile

```
// ==================================================================
// BROCADE_EthernetPort
// ==================================================================

   [Description ( "Capabilities and management of an EthernetPort." )]

class BROCADE_EthernetPort : CIM_EthernetPort {

      [Override ("DeviceID"), Key, MaxLen (64),
       Description (
          "An unique identifier of for the ethernet port.") ]
   string DeviceID;
```

```
   [Override("CreationClassName"), Key, MaxLen (256),
    Description (
       "CreationClassName indicates the name of the class.  When used "
       "with the other key properties of this class, this property "
       "allows all instances of this class to be uniquely identified.")]
string CreationClassName;

   [Override("SystemCreationClassName"), Key, MaxLen (256),
     Description (
        "The scoping system's creation class name.  The scoping "
        "system is the host in which hosts this ethernet port is "
        "present.")]
string SystemCreationClassName;

   [Override("SystemName"), Key, MaxLen (256),
    Description (
       "The scoping system's Name property. This property represents "
       "the name of the host computer system.")]
string SystemName;

   [Override ( "PortType" ),
    Description (
       "The specific mode that is currently enabled for the "
       "Port. When set to 1 (\"Other\"), the related property "
       "OtherPortType contains a string description of the type "
       "of port." ),
    ValueMap { "0", "1", "50", "51", "52", "53", "54", "55",
       "56", "100", "101", "102", "103", "104", "105", "106",
       "107", "108", "109", "110", "111", "16000..65535" },
    Values { "Unknown", "Other",
       //50 Copper
       "10BaseT", "10-100BaseT",
       "100BaseT", "1000BaseT", "2500BaseT", "10GBaseT",
       "10GBase-CX4", //100 Fiber
       "100Base-FX",
       "100Base-SX", "1000Base-SX", "1000Base-LX", "1000Base-CX",
       "10GBase-SR", "10GBase-SW", "10GBase-LX4", "10GBase-LR",
       "10GBase-LW", "10GBase-ER", "10GBase-EW", "Vendor Reserved" }]
uint16 PortType;

   [Override ( "NetworkAddresses" ),
    Description (
       "Ethernet/802.3 MAC addresses formatted as twelve "
       "hexadecimal digits (for example, \"010203040506\"), with "
       "each pair representing one of the six octets of the MAC "
       "address in \"canonical\" bit order. (Therefore, the "
       "Group address bit is found in the low order bit of the "
       "first character of the string.)" )]
string NetworkAddresses[];
```

```
    [Override ( "Capabilities" ),
     Description (
        "Capabilities of the EthernetPort. For example, the "
        "Device might support AlertOnLan, WakeOnLan, Load "
        "Balancing, or FailOver. If failover or load balancing "
        "capabilities are listed, a SpareGroup (failover) or "
        "ExtraCapacityGroup (load balancing) should also be "
        "defined to completely describe the capability." ),
     ValueMap { "0", "1", "2", "3", "4", "5" },
     Values { "Unknown", "Other", "AlertOnLan", "WakeOnLan",
        "FailOver", "LoadBalancing" },
     ArrayType ( "Indexed" ),
     ModelCorrespondence {
        "CIM_EthernetPort.CapabilityDescriptions" }]
uint16 Capabilities[];

    [Override ( "EnabledCapabilities" ),
     Description (
        "Specifies which capabilities are enabled from the list "
        "of all supported ones, which are defined in the "
        "Capabilities array." ),
     ValueMap { "0", "1", "2", "3", "4", "5" },
     Values { "Unknown", "Other", "AlertOnLan", "WakeOnLan",
        "FailOver", "LoadBalancing" },
     ArrayType ( "Indexed" ),
     ModelCorrespondence { "CIM_EthernetPort.Capabilities",
        "CIM_EthernetPort.OtherEnabledCapabilities" }]
uint16 EnabledCapabilities[];

    [Override ( "LinkTechnology" ),
     Description (
        "An enumeration of the types of links. When set to 1 "
        "(\"Other\"), the related property OtherLinkTechnology "
        "contains a string description of the type of link." ),
     ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
        "10", "11" },
     Values { "Unknown", "Other", "Ethernet", "IB", "FC", "FDDI",
        "ATM", "Token Ring", "Frame Relay", "Infrared",
        "BlueTooth", "Wireless LAN" },
     ModelCorrespondence { "CIM_NetworkPort.OtherLinkTechnology" }]
uint16 LinkTechnology;

    [Override ( "PermanentAddress" ),
     Description (
        "PermanentAddress defines the network address that is "
        "hardcoded into a port. This \'hardcoded\' address can be "
        "changed using a firmware upgrade or a software "
        "configuration. When this change is made, the field "
```

```
          "should be updated at the same time. PermanentAddress "
          "should be left blank if no \'hardcoded\' address exists "
          "for the NetworkAdapter." ),
       MaxLen ( 64 ),
       MappingStrings { "MIF.DMTF|Network Adapter 802 Port|001.2" }]
   string PermanentAddress;
};
// ===================================================================
// ASSOCIATIONS
// ===================================================================


// ===================================================================
// BROCADE_EthernetPortSystemDevice
// ===================================================================

   [Association, Aggregation, Composition,
    Description (
       "LogicalDevices can be aggregated by a System. This "
       "relationship is made explicit by the SystemDevice association." )]

class BROCADE_EthernetPortSystemDevice : CIM_SystemDevice {

      [Aggregate, Override ( "GroupComponent" ),
       Min ( 1 ),
       Max ( 1 ),
       Description ( "The host system having the FC HBAs installed." )]
   CIM_System REF GroupComponent;

      [Override ( "PartComponent" ),
       Weak, Description (
          "The ethernet port present in the FC HBA installed on the host"
          " system." )]
   CIM_LogicalDevice REF PartComponent;

};

// ===================================================================
// BROCADE_EthernetPortControlledBy
// ===================================================================

   [Association,
    Description (
       "The EthernetPortControlledBy relationship indicates which "
       "Devices are (Ethernet Port in this case) controlled by a Port "
       "controller present in the HBA." )]
class BROCADE_EthernetPortControlledBy : CIM_ControlledBy {
```

```
      [Override ( "Antecedent" ),
       Description ( "The Port Controller." )]
   CIM_Controller REF Antecedent;

      [Override ( "Dependent" ),
       Description ( "The Ethernet port." )]
   CIM_LogicalDevice REF Dependent;

};


//============================================================
// BROCADE_AlertIndication
//============================================================

   [Description (
      "This represents the indication class which models the events "
      "generated on BR-Series Adapters.")]
class BROCADE_AlertIndication : CIM_AlertIndication {

      [Override ( "IndicationIdentifier" ),
       Description (
          "An address or identifying information to uniquely name "
          "indication generated.")]
   string IndicationIdentifier;

      [Override( "IndicationTime" ),
       Description (
          "The time and date of creation of the Indication. The "
          "property may be set to NULL if the entity creating the "
          "Indication is not capable of determining this "
          "information. Note that IndicationTime may be the same "
          "for two Indications that are generated in rapid "
          "succession." )]
   datetime IndicationTime;

      [Override ( "AlertingManagedElement" ),
       Description (
          "The identifying information of the entity (ie, the "
          "instance) for which this Indication is generated. The "
          "property contains the path of an instance, encoded as a "
          "string parameter - if the instance is modeled in the CIM "
          "Schema. If not a CIM instance, the property contains "
          "some identifying string that names the entity for which "
          "the Alert is generated. The path or identifying string "
          "is formatted per the AlertingElementFormat property." ),
       ModelCorrespondence {
          "CIM_AlertIndication.AlertingElementFormat" }]
   string AlertingManagedElement;
```

```
    [Override ( "AlertingElementFormat" ),
     Description (
        "The format of the AlertingManagedElement property is "
        "interpretable based upon the value of this property. "
        "Values are defined as: \n"
        "0 - Unknown. The format is unknown or not meaningfully "
        "interpretable by a CIM client application. \n"
        "1 - Other. The format is defined by the value of the "
        "OtherAlertingElementFormat property. \n"
        "2 - CIMObjectPath. The format is a CIMObjectPath, with "
        "format <NamespacePath>:<ClassName>.<Prop1>=\"<Value1>\", "
        "<Prop2>=\"<Value2>\", . . . specifying an instance in "
        "the CIM Schema." ),
     ValueMap { "0", "1", "2" },
     Values { "Unknown", "Other", "CIMObjectPath" },
     ModelCorrespondence {
        "CIM_AlertIndication.AlertingManagedElement",
        "CIM_AlertIndication.OtherAlertingElementFormat" }]
uint16 AlertingElementFormat = 0;

    [Override ( "AlertType" ),
     Required, Description (
        "Primary classification of the Indication. The following "
        "values are defined: \n"
        "1 - Other. The Indication\'s OtherAlertType property "
        "conveys its classification. Use of \"Other\" in an "
        "enumeration is a standard CIM convention. It means that "
        "the current Indication does not fit into the categories "
        "described by this enumeration. \n"
        "2 - Communications Alert. An Indication of this type is "
        "principally associated with the procedures and/or "
        "processes required to convey information from one point "
        "to another. \n"
        "3 - Quality of Service Alert. An Indication of this type "
        "is principally associated with a degradation or errors "
        "in the performance or function of an entity. \n"
        "4 - Processing Error. An Indication of this type is "
        "principally associated with a software or processing "
        "fault. \n"
        "5 - Device Alert. An Indication of this type is "
        "principally associated with an equipment or hardware "
        "fault. \n"
        "6 - Environmental Alert. An Indication of this type is "
        "principally associated with a condition relating to an "
        "enclosure in which the hardware resides, or other "
        "environmental considerations. \n"
        "7 - Model Change. The Indication addresses changes in "
        "the Information Model. For example, it may embed a "
```

```
        "Lifecycle Indication to convey the specific model change "
        "being alerted. \n"
        "8 - Security Alert. An Indication of this type is "
        "associated with security violations, detection of "
        "viruses, and similar issues." ),
    ValueMap { "1", "2", "3", "4", "5", "6", "7", "8" },
    Values { "Other", "Communications Alert",
        "Quality of Service Alert", "Processing Error",
        "Device Alert", "Environmental Alert", "Model Change",
        "Security Alert" },
    MappingStrings { "Recommendation.ITU|X733.Event type" }]
uint16 AlertType;

   [Required, Override ( "PerceivedSeverity" ),
    Description (
        "An enumerated value that describes the severity of the "
        "Alert Indication from the notifier\'s point of view: \n"
        "1 - Other, by CIM convention, is used to indicate that "
        "the Severity\'s value can be found in the OtherSeverity "
        "property. \n"
        "3 - Degraded/Warning should be used when its appropriate "
        "to let the user decide if action is needed. \n"
        "4 - Minor should be used to indicate action is needed, "
        "but the situation is not serious at this time. \n"
        "5 - Major should be used to indicate action is needed "
        "NOW. \n"
        "6 - Critical should be used to indicate action is needed "
        "NOW and the scope is broad (perhaps an imminent outage "
        "to a critical resource will result). \n"
        "7 - Fatal/NonRecoverable should be used to indicate an "
        "error occurred, but it\'s too late to take remedial "
        "action. \n"
        "2 and 0 - Information and Unknown (respectively) follow "
        "common usage. Literally, the AlertIndication is purely "
        "informational or its severity is simply unknown." ),
    ValueMap { "0", "1", "2", "3", "4", "5", "6", "7" },
    Values { "Unknown", "Other", "Information",
        "Degraded/Warning", "Minor", "Major", "Critical",
        "Fatal/NonRecoverable" },
    MappingStrings { "Recommendation.ITU|X733.Perceived severity" }]
uint16 PerceivedSeverity;

   [Override ( "ProbableCause" ),
    Required, Description (
        "An enumerated value that describes the probable cause of "
        "the situation which resulted in the AlertIndication." ),
    ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
        "10", "11", "12", "13", "14", "15", "16", "17", "18",
        "19", "20", "21", "22", "23", "24", "25", "26", "27",
```

```
    "28", "29", "30", "31", "32", "33", "34", "35", "36",
    "37", "38", "39", "40", "41", "42", "43", "44", "45",
    "46", "47", "48", "49", "50", "51", "52", "53", "54",
    "55", "56", "57", "58", "59", "60", "61", "62", "63",
    "64", "65", "66", "67", "68", "69", "70", "71", "72",
    "73", "74", "75", "76", "77", "78", "79", "80", "81",
    "82", "83", "84", "85", "86", "87", "88", "89", "90",
    "91", "92", "93", "94", "95", "96", "97", "98", "99",
    "100", "101", "102", "103", "104", "105", "106", "107",
    "108", "109", "110", "111", "112", "113", "114", "115",
    "116", "117", "118", "119", "120", "121", "122", "123",
    "124", "125", "126", "127", "128", "129", "130" },
Values { "Unknown", "Other", "Adapter/Card Error",
    "Application Subsystem Failure", "Bandwidth Reduced",
    "Connection Establishment Error",
    "Communications Protocol Error",
    "Communications Subsystem Failure",
    "Configuration/Customization Error", "Congestion",
    "Corrupt Data", "CPU Cycles Limit Exceeded",
    "Dataset/Modem Error", "Degraded Signal",
    "DTE-DCE Interface Error", "Enclosure Door Open",
    "Equipment Malfunction", "Excessive Vibration",
    "File Format Error", "Fire Detected", "Flood Detected",
    "Framing Error", "HVAC Problem", "Humidity Unacceptable",
    "I/O Device Error", "Input Device Error", "LAN Error",
    "Non-Toxic Leak Detected",
    "Local Node Transmission Error", "Loss of Frame",
    "Loss of Signal",
    //31
    "Material Supply Exhausted",
    "Multiplexer Problem", "Out of Memory",
    "Output Device Error", "Performance Degraded",
    "Power Problem", "Pressure Unacceptable",
    "Processor Problem (Internal Machine Error)",
    "Pump Failure", "Queue Size Exceeded", "Receive Failure",
    "Receiver Failure", "Remote Node Transmission Error",
    "Resource at or Nearing Capacity",
    "Response Time Excessive",
    "Retransmission Rate Excessive", "Software Error",
    "Software Program Abnormally Terminated",
    "Software Program Error (Incorrect Results)",
    "Storage Capacity Problem", "Temperature Unacceptable",
    "Threshold Crossed", "Timing Problem",
    "Toxic Leak Detected", "Transmit Failure",
    "Transmitter Failure", "Underlying Resource Unavailable",
    "Version MisMatch", "Previous Alert Cleared",
    //60
    "Login Attempts Failed",
    "Software Virus Detected", "Hardware Security Breached",
```

```
        "Denial of Service Detected",
        "Security Credential MisMatch", "Unauthorized Access",
        "Alarm Received", "Loss of Pointer", "Payload Mismatch",
        "Transmission Error", "Excessive Error Rate",
        "Trace Problem", "Element Unavailable", "Element Missing",
        "Loss of Multi Frame", "Broadcast Channel Failure",
        "Invalid Message Received", "Routing Failure",
        "Backplane Failure", "Identifier Duplication",
        "Protection Path Failure", "Sync Loss or Mismatch",
        "Terminal Problem", "Real Time Clock Failure",
        "Antenna Failure", "Battery Charging Failure",
        "Disk Failure", "Frequency Hopping Failure",
        "Loss of Redundancy", "Power Supply Failure",
        "Signal Quality Problem",
        //91
        "Battery Discharging", "Battery Failure",
        "Commercial Power Problem", "Fan Failure",
        "Engine Failure", "Sensor Failure", "Fuse Failure",
        "Generator Failure", "Low Battery", "Low Fuel",
        "Low Water", "Explosive Gas", "High Winds", "Ice Buildup",
        "Smoke", "Memory Mismatch", "Out of CPU Cycles",
        "Software Environment Problem",
        "Software Download Failure", "Element Reinitialized",
        "Timeout", "Logging Problems", "Leak Detected",
        "Protection Mechanism Failure",
        //115
        "Protecting Resource Failure",
        "Database Inconsistency", "Authentication Failure",
        "Breach of Confidentiality", "Cable Tamper",
        "Delayed Information", "Duplicate Information",
        "Information Missing", "Information Modification",
        "Information Out of Sequence", "Key Expired",
        "Non-Repudiation Failure", "Out of Hours Activity",
        "Out of Service", "Procedural Error",
        "Unexpected Information" },
    MappingStrings { "Recommendation.ITU|X733.Probable cause",
        "Recommendation.ITU|M3100.probableCause",
        "ITU-IANA-ALARM-TC" },
    ModelCorrespondence {
        "CIM_AlertIndication.ProbableCauseDescription",
        "CIM_AlertIndication.EventID",
        "CIM_AlertIndication.EventTime" }]
uint16 ProbableCause;

   [Override ( "SystemCreationClassName" ),
    Description (
        "The scoping System\'s CreationClassName for the Provider "
        "generating this Indication." ),
    MaxLen ( 256 )]
```

```
string SystemCreationClassName;

   [Override ( "SystemName" ),
    Description (
       "The scoping System\'s Name for the Provider generating "
       "this Indication." ),
    MaxLen ( 256 )]
string SystemName;

   [Override ( "ProviderName" ),
    Description (
       "The name of the Provider generating this Indication." ),
    MaxLen ( 256 )]
string ProviderName;

   [Override ( "CorrelatedIndications" ),
    Description (
       "A list of IndicationIdentifiers whose notifications are "
       "correlated with (related to) this one." ),
    MappingStrings {
       "Recommendation.ITU|X733.Correlated notifications" },
    ModelCorrespondence { "CIM_Indication.IndicationIdentifier" }]
string CorrelatedIndications[];

   [Override ( "Description" ),
    Description ( "A short description of the Indication." ),
    MappingStrings { "Recommendation.ITU|X733.Additional text" }]
string Description;

   [Override ( "OtherAlertType" ),
    Description (
       "A string describing the Alert type - used when the "
       "AlertType property is set to 1, \"Other State Change\"." ),
    Valuemap {"Adapter", "Port", "Audit"},
    ModelCorrespondence { "CIM_AlertIndication.AlertType" }]
string OtherAlertType;

   [Override ( "OtherSeverity" ),
    Description (
       "Holds the value of the user defined severity value when "
       "\'PerceivedSeverity\' is 1 (\"Other\")." ),
    ModelCorrespondence { "CIM_AlertIndication.PerceivedSeverity" }]
string OtherSeverity;

   [Override ( "ProbableCauseDescription" ),
    Description (
       "Provides additional information related to the ProbableCause."
        ),
    ModelCorrespondence { "CIM_AlertIndication.ProbableCause" }]
```

```
string ProbableCauseDescription;

   [Override ( "EventID" ),
    Description (
       "An instrumentation or provider specific value that "
       "describes the underlying \"real-world\" event "
       "represented by the Indication. Two Indications with the "
       "same, non NULL EventID value are considered, by the "
       "creating entity, to represent the same event. The "
       "comparison of two EventID values is only defined for "
       "Alert Indications with identical, non NULL values of "
       "SystemCreateClassName, SystemName and ProviderName." ),
    ModelCorrespondence { "CIM_AlertIndication.ProbableCause" }]
string EventID;

   [Override ( "OwningEntity" ),
    Experimental, Description (
       "A string that uniquely identifies the entity that owns "
       "the definition of the format of the Message described in "
       "this instance. OwningEntity MUST include a copyrighted, "
       "trademarked or otherwise unique name that is owned by "
       "the business entity or standards body defining the "
       "format." )]
string OwningEntity;

   [Override ( "MessageID" ),
    Experimental, Description (
       "A string that uniquely identifies, within the scope of "
       "the OwningEntity, the format of the Message." ),
    ModelCorrespondence { "CIM_AlertIndication.Message",
       "CIM_AlertIndication.MessageArguments" }]
string MessageID;

   [Override ( "Message" ),
    Experimental, Description (
       "The formatted message. This message is constructed by "
       "combining some or all of the dynamic elements specified "
       "in the MessageArguments property with the static "
       "elements uniquely identified by the MessageID in a "
       "message registry or other catalog associated with the "
       "OwningEntity." ),
    ModelCorrespondence { "CIM_AlertIndication.MessageID",
       "CIM_AlertIndication.MessageArguments" }]
string Message;

   [Override ( "MessageArguments" ),
    Experimental, Description (
       "An array containing the dynamic content of the message." ),
```

```
    ModelCorrespondence { "CIM_AlertIndication.Message",
       "CIM_AlertIndication.MessageID" }]
string MessageArguments[];

   [Override ( "OtherAlertingElementFormat" ),
    Description (
       "A string defining \"Other\" values for "
       "AlertingElementFormat. This value MUST be set to a non "
       "NULL value when AlertingElementFormat is set to a value "
       "of 1 (\"Other\"). For all other values of "
       "AlertingElementFormat, the value of this string must be "
       "set to NULL." ),
    ModelCorrespondence {
       "CIM_AlertIndication.AlertingElementFormat" }]
string OtherAlertingElementFormat;

   [Override ( "Trending" ),
    Description (
       "Provides information on trending - trending up, down or no change."
        ),
    ValueMap { "0", "1", "2", "3", "4" },
    Values { "Unknown", "Not Applicable", "Trending Up",
       "Trending Down", "No Change" },
    MappingStrings { "Recommendation.ITU|X733.TrendIndication" }]
uint16 Trending;

   [Override ( "RecommendedActions" ),
    Description (
       "Free form descriptions of the recommended actions to "
       "take to resolve the cause of the notification." ),
    MappingStrings {
       "Recommendation.ITU|X733.Proposed repair actions" }]
string RecommendedActions[];

   [Override ( "EventTime" ),
    Description (
       "The time and date the underlying event was first "
       "detected. If specified, this property MUST be set to "
       "NULL if the creating entity is not capable of providing "
       "this information. This value is based on the notion of "
       "local date and time of the Managed System Element "
       "generating the Indication." ),
    ModelCorrespondence { "CIM_AlertIndication.ProbableCause" }]
datetime EventTime;

   [Description (
       "A string that represents the category of the generated event." ),
    Valuemap {"Adapter", "Port", "Audit"},
```

```
       ModelCorrespondence { "BROCADE_AlertIndication.AlertType",
          "BROCADE_AlertIndication.OtherAlertType" }]
   string Category;
};
```

//CDM Profile

```
// ===================================================================
// BROCADE_DiagnosticTest
// ===================================================================
   [Description (
      "The CIM_DiagnosticTest class represents the framework for "
       "running diagnostic tests. Specific diagnostic tests may be "
       "defined by subclassing and/or instantiating this object. To "
       "provide more detail for a type of test(s) (i.e, additional "
       "properties and methods), subclassing is appropriate. \n"
       "When a DiagnosticTest can be simultaneously executed against "
       "several elements, then DiagnosticTest may launch a ConcreteJob "
       "to represent each execution." )]
class BROCADE_DiagnosticTest : CIM_DiagnosticTest {

};


// ===================================================================
// BROCADE_MemoryDiagnosticTest
// ===================================================================

   [Description (
      "The BROCADE_MemoryDiagnosticTest class represents the memory "
       "diagnostic test. " )]
class BROCADE_MemoryDiagnosticTest : BROCADE_DiagnosticTest {

      [Override("SystemCreationClassName"), Key, MaxLen (256),
        Description (
           "The scoping system's creation class name.  The scoping "
           "system is the one that hosts this Tape Drive.")]
   string SystemCreationClassName;

      [Override ( "SystemName" ),
       Key, Description ( "The Name of the scoping System." ),
       MaxLen ( 256 ),
       Propagated ( "CIM_System.Name" )]
   string SystemName;
```

```
   [Override("CreationClassName"), Key, MaxLen (256),
    Description (
       "CreationClassName indicates the name of the class.  When used "
       "with the other key properties of this class, this property "
       "allows all instances of this class to be uniquely identified.")]
string CreationClassName;

   [Override ("Name"), Key, MaxLen (256),
    Description (
       "The Name property uniquely identifies the diagnostic "
       "test under consideration.")]
string Name;

   [Override("ElementName"),
    Description (
       "A user-friendly name for the diagnostic test under consideration.")]
string ElementName;

   [Override("Characteristics"),
    Description (
       "The descriptions for each Characteristic are below: \n"
       "\n"
       "* \"Is Exclusive\" (value=2) is specified for the test "
       "module only if the diagnostic cannot run more than one "
       "test at a time, regardless of how many SystemElements "
       "are supported. Typically, this occurs when hardware or "
       "software constraints prevent the test from running as "
       "multiple, concurrent instances. If the diagnostic can be "
       "run against multiple SystemElements, but only once per "
       "Element, then set the IsExclusiveForMSE boolean property "
       "on the appropriate instances of DiagnosticTestForMSE. \n"
       "\n"
       "* If \"Is Interactive\" (value=3) is set, then the "
       "diagnostic displays a message either before, during or "
       "after testing. \n"
       "\n"
       "* Set \"Is Destructive\" (value=4) if the diagnostic "
       "will destroy data, or reconfigure the Element that is "
       "being tested. \n"
       "\n"
       "* \"Is Risky\" (value=5) indicates that data loss may "
       "occur if the test is interrupted. Some tests make copies "
       "of data, perform the test, and restore the data "
       "returning the tested entity to its previous "
       "configuration. If the test is interrupted, then loss of "
       "data or reconfiguration of the tested "
       "ManagedSystemElement may occur. \n"
       "\n"
       "* If \"Is Package\" (value=6) is set, this test is "
```

```
        "actually a set of lower level diagnostics, that are "
        "packaged together by the test. This packaging is "
        "implemented by the diagnostic test, not aggregated by "
        "CIM. Information and results associated with the "
        "individual tests in the package may be requested by "
        "using the \"Subtests\" value in the "
        "DiagnosticSetting.LogOptions array. \n"
        "\n"
        "(value=7) was \"Supports PercentOfTestCoverage\" in "
        "Version 2.6. Value = 7 is being deprecated. Instead, it "
        "should be described in DiagnosticServiceCapabilities. \n"
        "\n"
        "\"Is Synchronous\" (value=8) indicates that this "
        "diagnostic service will complete before the "
        "RunDiagnostic method returns to the caller. A Job is "
        "still created that can be accessed by the client for "
        "accounting purposes, but the ability to track progress "
        "and status of the Job are lost. Additionally, in certain "
        "environments, the client may be \"blocked\" from further "
        "action until the service completes. \n"
        "\"Media Required\" (value=9) indicates that this "
        "diagnostic service requires that media be inserted into "
        "the device in order to perform the service. \"Additional "
        "Hardware Required\" (value=10) indicates that this "
        "diagnostic service requires that some additional "
        "hardware is installed (e.g., wrap plug) in order to "
        "perform the service." ),
    ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
        "10" },
    Values { "Unknown", "Other", "Is Exclusive",
        "Is Interactive", "Is Destructive", "Is Risky",
        "Is Package", "Reserved", "Is Synchronous",
        "Media Required", "Additional Hardware Required" },
    ModelCorrespondence {
        "CIM_DiagnosticTest.OtherCharacteristicsDescriptions" }]
uint16 Characteristics[];

   [Override("RunDiagnostic"),
    Description (
        "The RunDiagnostic method executes this test for the "
        "specified ManagedSystemElement (defined using the "
        "SystemElement input parameter). The capabilities for the "
        "diagnostic service indicate where the results from the "
        "test job are stored. How the test should execute, i.e. "
        "its settings, is defined in a DiagnosticSetting object "
        "(or by a subclass of DiagnosticSetting). A reference to "
        "a Setting object is specified using the Setting input "
        "parameter. If a reference is not passed into the method, "
        "then a default DiagnosticSetting SHALL be used. \n"
```

```
          "When RunDiagnostic starts execution, the settings, which "
          "are time sensitive, SHOULD be evaluated and captured. "
          "This is suggested since the DiagnosticSetting object MAY "
          "be modified at any time, and therefore the current test "
          "settings could be lost. \n"
          "If 0 is returned, the function completed successfully "
          "and no ConcreteJob instance is created. If 0x1000 a "
          "ConcreteJob will be started." ),
       ValueMap { "0", "1", "2", "3", "4", "5", "..", "0x1000",
          "..", "0x8000.." },
       Values { "Job completed with no error", "Not Supported",
          "Unknown", "Timeout", "Failed", "Invalid Parameter",
          "DMTF Reserved",
          "Method parameters checked - job started",
          "Method Reserved", "Vendor Specific" }]
   uint32 RunDiagnostic(
         [IN, Description (
             "Specifies the element upon which the "
             "DiagnosticService SHOULD be run." )]
      CIM_ManagedElement REF ManagedElement,
         [IN, Description (
             "Specifies the desired settings that SHOULD be "
             "applied to the Diagnostic. If null, then the "
             "Diagnostic\'s defaults MAY be used." )]
      CIM_DiagnosticSetting REF DiagSetting,
         [IN, Description (
             "Specifies the desired settings that SHOULD be "
             "applied to the resulting Job. If null and a "
             "resulting Job is required (i.e., the Diagnostic is "
             "long running), then the test\'s defaults MAY be "
             "used." )]
      CIM_JobSettingData REF JobSetting,
         [IN ( false ), OUT, Description (
             "Returns a handle to the resulting Job." )]
      CIM_ConcreteJob REF Job);

};

// ===================================================================
// BROCADE_LoopbackDiagnosticTest
// ===================================================================
   [Description (
      "The BROCADE_LoopbackDiagnosticTest class represents the loopback "
       "diagnostic test. " )]
class BROCADE_LoopbackDiagnosticTest : BROCADE_DiagnosticTest {
```

```
   [Override("SystemCreationClassName"), Key, MaxLen (256),
     Description (
        "The scoping system's creation class name.  The scoping "
        "system is the one that hosts this Tape Drive.")]
string SystemCreationClassName;

   [Override ( "SystemName" ),
    Key, Description ( "The Name of the scoping System." ),
    MaxLen ( 256 ),
    Propagated ( "CIM_System.Name" )]
string SystemName;

   [Override("CreationClassName"), Key, MaxLen (256),
    Description (
       "CreationClassName indicates the name of the class.  When used "
       "with the other key properties of this class, this property "
       "allows all instances of this class to be uniquely identified.")]
string CreationClassName;

   [Override ("Name"), Key, MaxLen (256),
    Description (
       "The Name property uniquely identifies the diagnostic "
       "test under consideration.")]
string Name;

   [Override("ElementName"),
    Description (
       "A user-friendly name for the diagnostic test under consideration.")]
string ElementName;

   [Override("Characteristics"),
    Description (
       "The descriptions for each Characteristic are below: \n"
       "\n"
       "* \"Is Exclusive\" (value=2) is specified for the test "
       "module only if the diagnostic cannot run more than one "
       "test at a time, regardless of how many SystemElements "
       "are supported. Typically, this occurs when hardware or "
       "software constraints prevent the test from running as "
       "multiple, concurrent instances. If the diagnostic can be "
       "run against multiple SystemElements, but only once per "
       "Element, then set the IsExclusiveForMSE boolean property "
       "on the appropriate instances of DiagnosticTestForMSE. \n"
       "\n"
       "* If \"Is Interactive\" (value=3) is set, then the "
       "diagnostic displays a message either before, during or "
       "after testing. \n"
       "\n"
       "* Set \"Is Destructive\" (value=4) if the diagnostic "
```

```
        "will destroy data, or reconfigure the Element that is "
        "being tested. \n"
        "\n"
        "* \"Is Risky\" (value=5) indicates that data loss may "
        "occur if the test is interrupted. Some tests make copies "
        "of data, perform the test, and restore the data "
        "returning the tested entity to its previous "
        "configuration. If the test is interrupted, then loss of "
        "data or reconfiguration of the tested "
        "ManagedSystemElement may occur. \n"
        "\n"
        "* If \"Is Package\" (value=6) is set, this test is "
        "actually a set of lower level diagnostics, that are "
        "packaged together by the test. This packaging is "
        "implemented by the diagnostic test, not aggregated by "
        "CIM. Information and results associated with the "
        "individual tests in the package may be requested by "
        "using the \"Subtests\" value in the "
        "DiagnosticSetting.LogOptions array. \n"
        "\n"
        "(value=7) was \"Supports PercentOfTestCoverage\" in "
        "Version 2.6. Value = 7 is being deprecated. Instead, it "
        "should be described in DiagnosticServiceCapabilities. \n"
        "\n"
        "\"Is Synchronous\" (value=8) indicates that this "
        "diagnostic service will complete before the "
        "RunDiagnostic method returns to the caller. A Job is "
        "still created that can be accessed by the client for "
        "accounting purposes, but the ability to track progress "
        "and status of the Job are lost. Additionally, in certain "
        "environments, the client may be \"blocked\" from further "
        "action until the service completes. \n"
        "\"Media Required\" (value=9) indicates that this "
        "diagnostic service requires that media be inserted into "
        "the device in order to perform the service. \"Additional "
        "Hardware Required\" (value=10) indicates that this "
        "diagnostic service requires that some additional "
        "hardware is installed (e.g., wrap plug) in order to "
        "perform the service." ),
    ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
        "10" },
    Values { "Unknown", "Other", "Is Exclusive",
        "Is Interactive", "Is Destructive", "Is Risky",
        "Is Package", "Reserved", "Is Synchronous",
        "Media Required", "Additional Hardware Required" },
    ModelCorrespondence {
        "CIM_DiagnosticTest.OtherCharacteristicsDescriptions" }]
uint16 Characteristics[];
```

```
      [Override("RunDiagnostic"),
       Description (
          "The RunDiagnostic method executes this test for the "
          "specified ManagedSystemElement (defined using the "
          "SystemElement input parameter). The capabilities for the "
          "diagnostic service indicate where the results from the "
          "test job are stored. How the test should execute, i.e. "
          "its settings, is defined in a DiagnosticSetting object "
          "(or by a subclass of DiagnosticSetting). A reference to "
          "a Setting object is specified using the Setting input "
          "parameter. If a reference is not passed into the method, "
          "then a default DiagnosticSetting SHALL be used. \n"
          "When RunDiagnostic starts execution, the settings, which "
          "are time sensitive, SHOULD be evaluated and captured. "
          "This is suggested since the DiagnosticSetting object MAY "
          "be modified at any time, and therefore the current test "
          "settings could be lost. \n"
          "If 0 is returned, the function completed successfully "
          "and no ConcreteJob instance is created. If 0x1000 a "
          "ConcreteJob will be started." ),
       ValueMap { "0", "1", "2", "3", "4", "5", "..", "0x1000",
          "..", "0x8000.." },
       Values { "Job completed with no error", "Not Supported",
          "Unknown", "Timeout", "Failed", "Invalid Parameter",
          "DMTF Reserved",
          "Method parameters checked - job started",
          "Method Reserved", "Vendor Specific" }]
   uint32 RunDiagnostic(
         [IN, Description (
             "Specifies the element upon which the "
             "DiagnosticService SHOULD be run." )]
      CIM_ManagedElement REF ManagedElement,
         [IN, Description (
             "Specifies the desired settings that SHOULD be "
             "applied to the Diagnostic. If null, then the "
             "Diagnostic\'s defaults MAY be used." )]
      CIM_DiagnosticSetting REF DiagSetting,
         [IN, Description (
             "Specifies the desired settings that SHOULD be "
             "applied to the resulting Job. If null and a "
             "resulting Job is required (i.e., the Diagnostic is "
             "long running), then the test\'s defaults MAY be "
             "used." )]
      CIM_JobSettingData REF JobSetting,
         [IN ( false ), OUT, Description (
             "Returns a handle to the resulting Job." )]
      CIM_ConcreteJob REF Job);

};
```

```
// ===================================================================
// BROCADE_PCILoopbackDiagnosticTest
// ===================================================================
   [Description (
      "The BROCADE_PCILoopbackDiagnosticTest class represents the PCI "
       "loopback diagnostic test. " )]
class BROCADE_PCILoopbackDiagnosticTest : BROCADE_DiagnosticTest {

      [Override("SystemCreationClassName"), Key, MaxLen (256),
        Description (
           "The scoping system's creation class name.  The scoping "
           "system is the one that hosts this Tape Drive.")]
   string SystemCreationClassName;

      [Override ( "SystemName" ),
       Key, Description ( "The Name of the scoping System." ),
       MaxLen ( 256 ),
       Propagated ( "CIM_System.Name" )]
   string SystemName;

      [Override("CreationClassName"), Key, MaxLen (256),
       Description (
          "CreationClassName indicates the name of the class.  When used "
          "with the other key properties of this class, this property "
          "allows all instances of this class to be uniquely identified.")]
   string CreationClassName;

      [Override ("Name"), Key, MaxLen (256),
       Description (
          "The Name property uniquely identifies the diagnostic "
          "test under consideration.")]
   string Name;

      [Override("ElementName"),
       Description (
          "A user-friendly name for the diagnostic test under consideration.")]
   string ElementName;

      [Override("Characteristics"),
       Description (
          "The descriptions for each Characteristic are below: \n"
          "\n"
          "* \"Is Exclusive\" (value=2) is specified for the test "
          "module only if the diagnostic cannot run more than one "
          "test at a time, regardless of how many SystemElements "
          "are supported. Typically, this occurs when hardware or "
          "software constraints prevent the test from running as "
          "multiple, concurrent instances. If the diagnostic can be "
```

```
"run against multiple SystemElements, but only once per "
"Element, then set the IsExclusiveForMSE boolean property "
"on the appropriate instances of DiagnosticTestForMSE. \n"
"\n"
"* If \"Is Interactive\" (value=3) is set, then the "
"diagnostic displays a message either before, during or "
"after testing. \n"
"\n"
"* Set \"Is Destructive\" (value=4) if the diagnostic "
"will destroy data, or reconfigure the Element that is "
"being tested. \n"
"\n"
"* \"Is Risky\" (value=5) indicates that data loss may "
"occur if the test is interrupted. Some tests make copies "
"of data, perform the test, and restore the data "
"returning the tested entity to its previous "
"configuration. If the test is interrupted, then loss of "
"data or reconfiguration of the tested "
"ManagedSystemElement may occur. \n"
"\n"
"* If \"Is Package\" (value=6) is set, this test is "
"actually a set of lower level diagnostics, that are "
"packaged together by the test. This packaging is "
"implemented by the diagnostic test, not aggregated by "
"CIM. Information and results associated with the "
"individual tests in the package may be requested by "
"using the \"Subtests\" value in the "
"DiagnosticSetting.LogOptions array. \n"
"\n"
"(value=7) was \"Supports PercentOfTestCoverage\" in "
"Version 2.6. Value = 7 is being deprecated. Instead, it "
"should be described in DiagnosticServiceCapabilities. \n"
"\n"
"\"Is Synchronous\" (value=8) indicates that this "
"diagnostic service will complete before the "
"RunDiagnostic method returns to the caller. A Job is "
"still created that can be accessed by the client for "
"accounting purposes, but the ability to track progress "
"and status of the Job are lost. Additionally, in certain "
"environments, the client may be \"blocked\" from further "
"action until the service completes. \n"
"\"Media Required\" (value=9) indicates that this "
"diagnostic service requires that media be inserted into "
"the device in order to perform the service. \"Additional "
"Hardware Required\" (value=10) indicates that this "
"diagnostic service requires that some additional "
"hardware is installed (e.g., wrap plug) in order to "
"perform the service." ),
```

```
     ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
        "10" },
     Values { "Unknown", "Other", "Is Exclusive",
        "Is Interactive", "Is Destructive", "Is Risky",
        "Is Package", "Reserved", "Is Synchronous",
        "Media Required", "Additional Hardware Required" },
     ModelCorrespondence {
        "CIM_DiagnosticTest.OtherCharacteristicsDescriptions" }]
uint16 Characteristics[];

   [Override("RunDiagnostic"),
    Description (
       "The RunDiagnostic method executes this test for the "
       "specified ManagedSystemElement (defined using the "
       "SystemElement input parameter). The capabilities for the "
       "diagnostic service indicate where the results from the "
       "test job are stored. How the test should execute, i.e. "
       "its settings, is defined in a DiagnosticSetting object "
       "(or by a subclass of DiagnosticSetting). A reference to "
       "a Setting object is specified using the Setting input "
       "parameter. If a reference is not passed into the method, "
       "then a default DiagnosticSetting SHALL be used. \n"
       "When RunDiagnostic starts execution, the settings, which "
       "are time sensitive, SHOULD be evaluated and captured. "
       "This is suggested since the DiagnosticSetting object MAY "
       "be modified at any time, and therefore the current test "
       "settings could be lost. \n"
       "If 0 is returned, the function completed successfully "
       "and no ConcreteJob instance is created. If 0x1000 a "
       "ConcreteJob will be started." ),
    ValueMap { "0", "1", "2", "3", "4", "5", "..", "0x1000",
       "..", "0x8000.." },
    Values { "Job completed with no error", "Not Supported",
       "Unknown", "Timeout", "Failed", "Invalid Parameter",
       "DMTF Reserved",
       "Method parameters checked - job started",
       "Method Reserved", "Vendor Specific" }]
uint32 RunDiagnostic(
      [IN, Description (
          "Specifies the element upon which the "
          "DiagnosticService SHOULD be run." )]
   CIM_ManagedElement REF ManagedElement,
      [IN, Description (
          "Specifies the desired settings that SHOULD be "
          "applied to the Diagnostic. If null, then the "
          "Diagnostic\'s defaults MAY be used." )]
   CIM_DiagnosticSetting REF DiagSetting,
      [IN, Description (
          "Specifies the desired settings that SHOULD be "
```

```
            "applied to the resulting Job. If null and a "
            "resulting Job is required (i.e., the Diagnostic is "
            "long running), then the test\'s defaults MAY be "
            "used." )]
      CIM_JobSettingData REF JobSetting,
         [IN ( false ), OUT, Description (
            "Returns a handle to the resulting Job." )]
      CIM_ConcreteJob REF Job);


};

// ===================================================================
// BROCADE_EthLoopbackDiagnosticTest
// ===================================================================
   [Description (
      "The BROCADE_EthLoopbackDiagnosticTest class represents the eth "
       "loopback diagnostic test." )]
class BROCADE_EthLoopbackDiagnosticTest : BROCADE_DiagnosticTest {

      [Override("SystemCreationClassName"), Key, MaxLen (256),
        Description (
           "The scoping system's creation class name.  The scoping "
           "system is the one that hosts this Tape Drive.")]
   string SystemCreationClassName;

      [Override ( "SystemName" ),
       Key, Description ( "The Name of the scoping System." ),
       MaxLen ( 256 ),
       Propagated ( "CIM_System.Name" )]
   string SystemName;

      [Override("CreationClassName"), Key, MaxLen (256),
       Description (
          "CreationClassName indicates the name of the class.  When used "
          "with the other key properties of this class, this property "
          "allows all instances of this class to be uniquely identified.")]
   string CreationClassName;

      [Override ("Name"), Key, MaxLen (256),
       Description (
          "The Name property uniquely identifies the diagnostic "
          "test under consideration.")]
   string Name;

      [Override("ElementName"),
       Description (
          "A user-friendly name for the diagnostic test under consideration.")]
   string ElementName;
```

```
[Override("Characteristics"),
 Description (
    "The descriptions for each Characteristic are below: \n"
    "\n"
    "* \"Is Exclusive\" (value=2) is specified for the test "
    "module only if the diagnostic cannot run more than one "
    "test at a time, regardless of how many SystemElements "
    "are supported. Typically, this occurs when hardware or "
    "software constraints prevent the test from running as "
    "multiple, concurrent instances. If the diagnostic can be "
    "run against multiple SystemElements, but only once per "
    "Element, then set the IsExclusiveForMSE boolean property "
    "on the appropriate instances of DiagnosticTestForMSE. \n"
    "\n"
    "* If \"Is Interactive\" (value=3) is set, then the "
    "diagnostic displays a message either before, during or "
    "after testing. \n"
    "\n"
    "* Set \"Is Destructive\" (value=4) if the diagnostic "
    "will destroy data, or reconfigure the Element that is "
    "being tested. \n"
    "\n"
    "* \"Is Risky\" (value=5) indicates that data loss may "
    "occur if the test is interrupted. Some tests make copies "
    "of data, perform the test, and restore the data "
    "returning the tested entity to its previous "
    "configuration. If the test is interrupted, then loss of "
    "data or reconfiguration of the tested "
    "ManagedSystemElement may occur. \n"
    "\n"
    "* If \"Is Package\" (value=6) is set, this test is "
    "actually a set of lower level diagnostics, that are "
    "packaged together by the test. This packaging is "
    "implemented by the diagnostic test, not aggregated by "
    "CIM. Information and results associated with the "
    "individual tests in the package may be requested by "
    "using the \"Subtests\" value in the "
    "DiagnosticSetting.LogOptions array. \n"
    "\n"
    "(value=7) was \"Supports PercentOfTestCoverage\" in "
    "Version 2.6. Value = 7 is being deprecated. Instead, it "
    "should be described in DiagnosticServiceCapabilities. \n"
    "\n"
    "\"Is Synchronous\" (value=8) indicates that this "
    "diagnostic service will complete before the "
    "RunDiagnostic method returns to the caller. A Job is "
    "still created that can be accessed by the client for "
    "accounting purposes, but the ability to track progress "
```

```
        "and status of the Job are lost. Additionally, in certain "
        "environments, the client may be \"blocked\" from further "
        "action until the service completes. \n"
        "\"Media Required\" (value=9) indicates that this "
        "diagnostic service requires that media be inserted into "
        "the device in order to perform the service. \"Additional "
        "Hardware Required\" (value=10) indicates that this "
        "diagnostic service requires that some additional "
        "hardware is installed (e.g., wrap plug) in order to "
        "perform the service." ),
    ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
        "10" },
    Values { "Unknown", "Other", "Is Exclusive",
        "Is Interactive", "Is Destructive", "Is Risky",
        "Is Package", "Reserved", "Is Synchronous",
        "Media Required", "Additional Hardware Required" },
    ModelCorrespondence {
        "CIM_DiagnosticTest.OtherCharacteristicsDescriptions" }]
uint16 Characteristics[];

   [Override("RunDiagnostic"),
    Description (
        "The RunDiagnostic method executes this test for the "
        "specified ManagedSystemElement (defined using the "
        "SystemElement input parameter). The capabilities for the "
        "diagnostic service indicate where the results from the "
        "test job are stored. How the test should execute, i.e. "
        "its settings, is defined in a DiagnosticSetting object "
        "(or by a subclass of DiagnosticSetting). A reference to "
        "a Setting object is specified using the Setting input "
        "parameter. If a reference is not passed into the method, "
        "then a default DiagnosticSetting SHALL be used. \n"
        "When RunDiagnostic starts execution, the settings, which "
        "are time sensitive, SHOULD be evaluated and captured. "
        "This is suggested since the DiagnosticSetting object MAY "
        "be modified at any time, and therefore the current test "
        "settings could be lost. \n"
        "If 0 is returned, the function completed successfully "
        "and no ConcreteJob instance is created. If 0x1000 a "
        "ConcreteJob will be started." ),
    ValueMap { "0", "1", "2", "3", "4", "5", "..", "0x1000",
        "..", "0x8000.." },
    Values { "Job completed with no error", "Not Supported",
        "Unknown", "Timeout", "Failed", "Invalid Parameter",
        "DMTF Reserved",
        "Method parameters checked - job started",
        "Method Reserved", "Vendor Specific" }]
uint32 RunDiagnostic(
      [IN, Description (
```

```
            "Specifies the element upon which the "
            "DiagnosticService SHOULD be run." )]
      CIM_ManagedElement REF ManagedElement,
         [IN, Description (
            "Specifies the desired settings that SHOULD be "
            "applied to the Diagnostic. If null, then the "
            "Diagnostic\'s defaults MAY be used." )]
      CIM_DiagnosticSetting REF DiagSetting,
         [IN, Description (
            "Specifies the desired settings that SHOULD be "
            "applied to the resulting Job. If null and a "
            "resulting Job is required (i.e., the Diagnostic is "
            "long running), then the test\'s defaults MAY be "
            "used." )]
      CIM_JobSettingData REF JobSetting,
         [IN ( false ), OUT, Description (
            "Returns a handle to the resulting Job." )]
      CIM_ConcreteJob REF Job);
};

// ===================================================================
// BROCADE_DiagnosticSoftwareIdentity
// ===================================================================

   [Description (
       "SoftwareIdentity provides descriptive information about a "
       "software component for asset tracking and/or installation "
       "dependency management." )]

class BROCADE_DiagnosticSoftwareIdentity : CIM_SoftwareIdentity {

      [Override ( "InstanceID" ),
       Key, Description (
          "This property opaquely and uniquely identifies a software "
          "entity which could either be a driver or firmware or BIOS.")]
   string InstanceID;

      [Override ( "VersionString" ),
       Description (
          "A string representing the complete software version "
          "information." )]
   string VersionString;

      [Override ( "Manufacturer" ),
       Description (
          "Manufacturer of this software." )]
   string Manufacturer;
```

```
      [Override ( "Classifications" ),
       Description (
          "An array of enumerated integers that classify this "
          "software which MAY be instrumentation (value=5) or firmware "
          "and diagnostic software (10 and 7). The use of value 6, Firmware/BIOS, "
          "is being deprecated. Instead, either the value 10 "
          "(Firmware) and/or 11 (BIOS/FCode) SHOULD be used." ),
       ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
          "10", "11", "12", "13", "..", "0x8000..0xFFFF" },
       Values { "Unknown", "Other", "Driver",
          "Configuration Software", "Application Software",
          "Instrumentation", "Firmware/BIOS", "Diagnostic Software",
          "Operating System", "Middleware", "Firmware",
          "BIOS/FCode", "Support/Service Pack", "Software Bundle",
          "DMTF Reserved", "Vendor Reserved" },
       ArrayType ( "Indexed" ),
       ModelCorrespondence {
          "CIM_SoftwareIdentity.ClassificationDescriptions" }]
   uint16 Classifications[];

};

// ===================================================================
// BROCADE_ConcreteJob
// ===================================================================
   [Description (
      "A concrete version of Job. This class represents a generic and "
       "instantiable unit of work, such as a batch or a print job." )]
class BROCADE_ConcreteJob: CIM_ConcreteJob {

      [Override ( "InstanceID" ),
       Description (
          "This property uniquely identifies the particular"
          " diagnostic test job instance ." )]
   string InstanceID;

      [Override ("Name"), MaxLen (256),
       Description (
          "The Name property uniquely identifies the diagnostic "
          "test job instance under consideration.")]
   string Name;

      [Override("JobState"),
       Description (
          "JobState is an integer enumeration that indicates the "
          "operational state of a Job. It can also indicate "
          "transitions between these states, for example, \'Shutting "
          "Down\' and \'Starting\'. Following is a brief "
          "description of the states: \n"
```

```
        "New (2) indicates that the job has never been started. \n"
        "Starting (3) indicates that the job is moving from the "
        "\'New\', \'Suspended\', or \'Service\' states into the "
        "\'Running\' state. \n"
        "Running (4) indicates that the Job is running. \n"
        "Suspended (5) indicates that the Job is stopped, but can "
        "be restarted in a seamless manner. \n"
        "Shutting Down (6) indicates that the job is moving to a "
        "\'Completed\', \'Terminated\', or \'Killed\' state. \n"
        "Completed (7) indicates that the job has completed "
        "normally. \n"
        "Terminated (8) indicates that the job has been stopped "
        "by a \'Terminate\' state change request. The job and all "
        "its underlying processes are ended and can be restarted "
        "(this is job-specific) only as a new job. \n"
        "Killed (9) indicates that the job has been stopped by a "
        "\'Kill\' state change request. Underlying processes "
        "might have been left running, and cleanup might be "
        "required to free up resources. \n"
        "Exception (10) indicates that the Job is in an abnormal "
        "state that might be indicative of an error condition. "
        "Actual status might be displayed though job-specific "
        "objects. \n"
        "Service (11) indicates that the Job is in a "
        "vendor-specific state that supports problem discovery, "
        "or resolution, or both.\n"
        "Query pending (12) waiting for a client to resolve a "
        "query" ),
    ValueMap { "2", "3", "4", "5", "6", "7", "8", "9", "10",
        "11", "12", "13..32767", "32768..65535" },
    Values { "New", "Starting", "Running", "Suspended",
        "Shutting Down", "Completed", "Terminated", "Killed",
        "Exception", "Service", "Query Pending", "DMTF Reserved",
        "Vendor Reserved" }]
uint16 JobState;

   [Override ("TimeBeforeRemoval"),
    Required, Write, Description (
        "The amount of time that the Job is retained after it has "
        "finished executing, either succeeding or failing in that "
        "execution. The job must remain in existence for some "
        "period of time regardless of the value of the "
        "DeleteOnCompletion property. \n"
        "The default is five minutes." )]
datetime TimeBeforeRemoval = "00000000000500.000000:000";
```

```
    [Override ("StartTime"),
    Description (
        "The time that the Job was actually started. This time "
        "can be represented by an actual date and time, or by an "
        "interval relative to the time that this property is "
        "requested. Note that this property is also present in "
        "the JobProcessingStatistics class. This class is "
        "necessary to capture the processing information for "
        "recurring Jobs, because only the \'last\' run time can "
        "be stored in this single-valued property." )]
datetime StartTime;

    [Override ("ElapsedTime"),
    Description (
        "The time interval that the Job has been executing or the "
        "total execution time if the Job is complete. Note that "
        "this property is also present in the "
        "JobProcessingStatistics class. This class is necessary "
        "to capture the processing information for recurring "
        "Jobs, because only the \'last\' run time can be stored "
        "in this single-valued property." )]
datetime ElapsedTime;

    [Override ("PercentComplete"),
    Description (
        "The percentage of the job that has completed at the time "
        "that this value is requested. Note that this property is "
        "also present in the JobProcessingStatistics class. This "
        "class is necessary to capture the processing information "
        "for recurring Jobs, because only the \'last\' run data "
        "can be stored in this single-valued property. \n"
        "Note that the value 101 is undefined and will be not be "
        "allowed in the next major revision of the specification." ),
     Units ( "Percent" ),
     MinValue ( 0 ),
     MaxValue ( 101 )]
uint16 PercentComplete;

    [Description (
        "Requests that the state of the job be changed to the "
        "value specified in the RequestedState parameter. "
        "Invoking the RequestStateChange method multiple times "
        "could result in earlier requests being overwritten or "
        "lost. \n"
        "If 0 is returned, then the task completed successfully. "
        "Any other return code indicates an error condition." ),
     ValueMap { "0", "1", "2", "3", "4", "5", "6", "..", "4096",
        "4097", "4098", "4099", "4100..32767", "32768..65535" },
     Values { "Completed with No Error", "Not Supported",
```

```
          "Unknown/Unspecified Error",
          "Can NOT complete within Timeout Period", "Failed",
          "Invalid Parameter", "In Use", "DMTF Reserved",
          "Method Parameters Checked - Transition Started",
          "Invalid State Transition",
          "Use of Timeout Parameter Not Supported", "Busy",
          "Method Reserved", "Vendor Specific" }]
   uint32 RequestStateChange(
         [IN, Description (
             "RequestStateChange changes the state of a job. The "
             "possible values are as follows: \n"
             "Start (2) changes the state to \'Running\'. \n"
             "Suspend (3) stops the job temporarily. The "
             "intention is to subsequently restart the job with "
             "\'Start\'. It might be possible to enter the "
             "\'Service\' state while suspended. (This is "
             "job-specific.) \n"
             "Terminate (4) stops the job cleanly, saving data, "
             "preserving the state, and shutting down all "
             "underlying processes in an orderly manner. \n"
             "Kill (5) terminates the job immediately with no "
             "requirement to save data or preserve the state. \n"
             "Service (6) puts the job into a vendor-specific "
             "service state. It might be possible to restart the "
             "job." ),
          ValueMap { "2", "3", "4", "5", "6", "7..32767",
             "32768..65535" },
          Values { "Start", "Suspend", "Terminate", "Kill",
             "Service", "DMTF Reserved", "Vendor Reserved" }]
      uint16 RequestedState,
         [IN, Description (
             "A timeout period that specifies the maximum amount "
             "of time that the client expects the transition to "
             "the new state to take. The interval format must be "
             "used to specify the TimeoutPeriod. A value of 0 or "
             "a null parameter indicates that the client has no "
             "time requirements for the transition. \n"
             "If this property does not contain 0 or null and "
             "the implementation does not support this "
             "parameter, a return code of \'Use Of Timeout "
             "Parameter Not Supported\' must be returned." )]
      datetime TimeoutPeriod);
};
```

```
// ===================================================================
// BROCADE_DiagnosticServiceRecord
// ===================================================================

[Description (
       "While a DiagnosticService is running, data generated by the "
       "service may be recorded in DiagnosticServiceRecord objects. A "
       "DiagnosticServiceRecord is related to its MessageLog via an "
       "instance of the RecordInLog aggregation class." )]
class BROCADE_DiagnosticServiceRecord : CIM_DiagnosticServiceRecord {

      [Override ( "InstanceID" ),
       Key, Description (
          "This property opaquely and uniquely identifies a Service Record.")]
   string InstanceID;

      [Override ( " CreationTimeStamp" ),
       Description (
          "A timestamp indicating when the record was created." )]
   datetime CreationTimeStamp;
      [Override ( "RecordData" ),
       Description (
          "A string containing LogRecord data. \n"
          "If the corresponding RecordFormat property is <empty>, "
          "or cannot be parsed according to the recommended format, "
          "RecordData should be interpreted as a free-form string. "
          "If the RecordFormat property contains parseable format "
          "information (as recommended in the RecordFormat "
          "Description qualifier), the RecordData string SHOULD be "
          "parsed in accordance with this format. In this case, "
          "RecordData SHOULD begin with the delimiter character and "
          "this character SHOULD be used to separate substrings in "
          "the manner described. The RecordData string can then be "
          "parsed by the data consumer and appropriately typed." ),
       ModelCorrespondence { "CIM_RecordForLog.RecordFormat" }]
   string RecordData;

      [Override ( "RecordFormat" ),
       Description (
          "A string describing the data structure of the "
          "information in the property, RecordData. If the "
          "RecordFormat string is <empty>, RecordData should be "
          "interpreted as a free-form string. \n"
          "\n"
          "To describe the data structure of RecordData, the "
          "RecordFormat string should be constructed as follows: \n"
          "- The first character is a delimiter character and is "
          "used to parse the remainder of the string into "
          "sub-strings. \n"
```

```
        "- Each sub-string is separated by the delimiter "
        "character and should be in the form of a CIM property "
        "declaration (i.e., datatype and property name). This set "
        "of declarations may be used to interpret the similarly "
        "delimited RecordData property. \n"
        "For example, using a \'*\' delimiter, RecordFormat = "
        "\"*string ThisDay*uint32 ThisYear*datetime SomeTime\" \n"
        "may be used to interpret: RecordData = \"*This is "
        "Friday*2002*20020807141000.000000-300\"." ),
    ModelCorrespondence { "CIM_RecordForLog.RecordData" }]
string RecordFormat;

   [Override ( "LoopsPassed" ),
    Description (
       "Since some tests may be looped, it is useful to report "
       "how many iterations passed and failed. This is relevant "
       "in analyzing transitory failures. For example if all the "
       "errors occurred in just one of 100 iterations, the "
       "device may be viewed as OK or marginal, to be monitored "
       "further rather then failed. Note: LoopsPassed & "
       "LoopsFailed should add up to the loops completed. \n"
       "A value for this property would likely be reported with "
       "a DiagnosticServiceRecord.RecordType value = "
       "\"ResultSummary\", which contains a summary result "
       "covering all iterations of a looped service." )]
uint32 LoopsPassed;

   [Override ( "LoopsFailed" ),
    Description (
       "Since some tests may be looped, it is useful to report "
       "how many iterations passed and failed. This is relevant "
       "in analyzing transitory failures. For example, if all "
       "the errors occurred in just one of 100 iterations, the "
       "device may be viewed as OK or marginal, to be monitored "
       "further rather then failed. Note: LoopsPassed & "
       "LoopsFailed should add up to the loops completed. \n"
       "A value for this property would likely be reported with "
       "a DiagnosticServiceRecord.RecordType value = "
       "\"ResultSummary\", which contains a summary result "
       "covering all iterations of a looped service." )]
uint32 LoopsFailed;


   [Override ( "ErrorCode" ),
    Description (
       "If applicable, this string should contain one or more "
       "vendor specific error codes that the diagnostic service "
       "detected. These error codes may be used by the vendor "
       "for variety of purposes such as: fault data base "
```

```
        "indexing, field service trouble ticketing, product "
        "quality tracking, part failure history, etc. Since these "
        "codes are for vendor purposes they may assume any form. "
        "Details on suggested use cases will be left to white "
        "papers. The array of error codes has model "
        "correspondence with an ErrorCount array so the number of "
        "errors reported can be analyzed by individual error "
        "code." ),
    ArrayType ( "Indexed" ),
    ModelCorrespondence { "CIM_DiagnosticServiceRecord.ErrorCount" }]
string ErrorCode[];

   [Override ( "ErrorCount" ),
    Description (
        "Since some tests may detect transient and correctable "
        "errors such as a network diagnostic or memory test, an "
        "error count is useful to indicate the severity of the "
        "failure. This field contains an integer value of the "
        "number of errors detected by the test. The ErrorCount is "
        "an array with model correspondence to ErrorCode so that "
        "the test can report an ErrorCount on each type of error "
        "encountered. It is recommended that hard errors and "
        "correctable or recoverable errors be given different "
        "codes so that clients with knowledge of the error codes "
        "can evaluate correctable, recoverable, and hard errors "
        "independently." ),
    ArrayType ( "Indexed" ),
    ModelCorrespondence { "CIM_DiagnosticServiceRecord.ErrorCode" }]
uint32 ErrorCount[];

   [Override ( "ServiceName" ),
    Required, Description (
        "This property should reflect the value of the underlying "
        "DiagnosticService.Name property." ),
    ModelCorrespondence { "CIM_DiagnosticService.Name" }]
string ServiceName;


   [Override ( "ManagedElementName" ),
    Required, Description (
        "This property SHOULD reflect the value of the underlying "
        "ManagedElement.ElementName property." ),
    ModelCorrespondence { "CIM_ManagedElement.ElementName" }]
string ManagedElementName;

   [Override ( "RecordType" ),
    Description (
        "The RecordType property specifies the nature of the data "
        "being entered into the ServiceRecord. The value in this "
```

```
          "property should match one of the values indicated by the "
          "DiagnosticSetting.LogOptions property. A brief summary "
          "of the various log options can be found in "
          "CIM_DiagnosticSetting.LogOptions." ),
       ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
          "10", "11", "12", "13", "14" },
       Values { "Unknown", "Other", "Results", "Subtests",
          "Actions", "Warnings", "Status", "Device Errors",
          "Service Errors", "Setting Data", "Statistics",
          "Hardware Configuration", "Software Configuration",
          "References", "Debug" },
       ModelCorrespondence { "CIM_DiagnosticSetting.LogOptions",
          "CIM_DiagnosticRecord.OtherRecordTypeDescription" }]
   uint16 RecordType;

      [Override ( "ExpirationDate" ),
       Description (
          "The date and time that the record instance should be "
          "deleted. The expiration datetime SHOULD be set when the "
          "record is fully populated with record data. The value "
          "SHOULD be calculated using the ResultPersistence "
          "property of the DiagnosticSetting class. Once the "
          "Expiration Date has been reached, record instances "
          "SHOULD be deleted as soon as possible.\n"
          "If a ResultPersistence value is not provided, records "
          "MAY be deleted at any time." ),
       ModelCorrespondence {
          "CIM_DiagnosticSetting.ResultPersistence" }]
   datetime ExpirationDate;

};


// ===================================================================
// BROCADE_DiagnosticCompletionRecord
// ===================================================================

    [Description (
       "When a DiagnosticService has completed, results generated by "
       "the service will be recorded in a DiagnosticCompletionRecord "
       "object. This class is used when a DiagnosticRecord.RecordType "
       "value = \"Results\", to contain completion information." )]
class BROCADE_DiagnosticCompletionRecord : CIM_DiagnosticCompletionRecord {

      [Override ( "InstanceID" ),
       Key, Description (
          "This property opaquely and uniquely identifies a Service Record.")]
   string InstanceID;
```

```
   [Override ( " CreationTimeStamp" ),
    Description (
       "A timestamp indicating when the record was created." )]
datetime CreationTimeStamp;

   [Override ( "RecordData" ),
    Description (
       "A string containing LogRecord data. \n"
       "If the corresponding RecordFormat property is <empty>, "
       "or cannot be parsed according to the recommended format, "
       "RecordData should be interpreted as a free-form string. "
       "If the RecordFormat property contains parseable format "
       "information (as recommended in the RecordFormat "
       "Description qualifier), the RecordData string SHOULD be "
       "parsed in accordance with this format. In this case, "
       "RecordData SHOULD begin with the delimiter character and "
       "this character SHOULD be used to separate substrings in "
       "the manner described. The RecordData string can then be "
       "parsed by the data consumer and appropriately typed." ),
    ModelCorrespondence { "CIM_RecordForLog.RecordFormat" }]
string RecordData;

   [Override ( "RecordFormat" ),
    Description (
       "A string describing the data structure of the "
       "information in the property, RecordData. If the "
       "RecordFormat string is <empty>, RecordData should be "
       "interpreted as a free-form string. \n"
       "\n"
       "To describe the data structure of RecordData, the "
       "RecordFormat string should be constructed as follows: \n"
       "- The first character is a delimiter character and is "
       "used to parse the remainder of the string into "
       "sub-strings. \n"
       "- Each sub-string is separated by the delimiter "
       "character and should be in the form of a CIM property "
       "declaration (i.e., datatype and property name). This set "
       "of declarations may be used to interpret the similarly "
       "delimited RecordData property. \n"
       "For example, using a \'*\' delimiter, RecordFormat = "
       "\"*string ThisDay*uint32 ThisYear*datetime SomeTime\" \n"
       "may be used to interpret: RecordData = \"*This is "
       "Friday*2002*20020807141000.000000-300\"." ),
    ModelCorrespondence { "CIM_RecordForLog.RecordData" }]
string RecordFormat;
```

```
    [Override ( "ServiceName" ),
     Required, Description (
        "This property should reflect the value of the underlying "
        "DiagnosticService.Name property." ),
     ModelCorrespondence { "CIM_DiagnosticService.Name" }]
string ServiceName;

    [Override ( "ManagedElementName" ),
     Required, Description (
        "This property SHOULD reflect the value of the underlying "
        "ManagedElement.ElementName property." ),
     ModelCorrespondence { "CIM_ManagedElement.ElementName" }]
string ManagedElementName;

    [Override ( "RecordType" ),
     Description (
        "The RecordType property specifies the nature of the data "
        "being entered into the ServiceRecord. The value in this "
        "property should match one of the values indicated by the "
        "DiagnosticSetting.LogOptions property. A brief summary "
        "of the various log options can be found in "
        "CIM_DiagnosticSetting.LogOptions." ),
     ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
        "10", "11", "12", "13", "14" },
     Values { "Unknown", "Other", "Results", "Subtests",
        "Actions", "Warnings", "Status", "Device Errors",
        "Service Errors", "Setting Data", "Statistics",
        "Hardware Configuration", "Software Configuration",
        "References", "Debug" },
     ModelCorrespondence { "CIM_DiagnosticSetting.LogOptions",
        "CIM_DiagnosticRecord.OtherRecordTypeDescription" }]
uint16 RecordType;

    [Override ( "ExpirationDate" ),
     Description (
        "The date and time that the record instance should be "
        "deleted. The expiration datetime SHOULD be set when the "
        "record is fully populated with record data. The value "
        "SHOULD be calculated using the ResultPersistence "
        "property of the DiagnosticSetting class. Once the "
        "Expiration Date has been reached, record instances "
        "SHOULD be deleted as soon as possible.\n"
        "If a ResultPersistence value is not provided, records "
        "MAY be deleted at any time." ),
     ModelCorrespondence {
        "CIM_DiagnosticSetting.ResultPersistence" }]
datetime ExpirationDate;
```

```
    [Override ( "CompletionState" ),
     Description (
        "This property is used when a DiagnosticRecord.RecordType "
        "value = \"Results\", to record how the test has "
        "completed. It is expected that additional "
        "DiagnosticServiceRecords of RecordType \"Service "
        "Errors\", \"Warning\" or \"Device Errors\" would be "
        "created by the test to describe the details of a "
        "\"Warning\", \"Incomplete\" or \"Failed\" "
        "CompletionState, respectively. \n"
        "\" Stopped\" and \"Aborted\" are similar, although the "
        "former implies a clean and orderly stop, while the "
        "latter implies an abrupt stop where the element\'s state "
        "and configuration may need to be updated. \n"
        "\"Warning\" means the element had a problem but did not "
        "fail the test. \n"
        "\"Failed\" and \"Incomplete\" are similar, although the "
        "former means the test on the element failed, while the "
        "latter means the test itself had a problem and could not "
        "complete execution." ),
     ValueMap { "0", "1", "2", "3", "4", "5", "6", "7" },
     Values { "Unknown", "Other", "OK", "Warning", "Incomplete",
        "Failed", "Aborted", "Stopped" },
     ModelCorrespondence {
        "CIM_DiagnosticCompletionRecord.OtherCompletionStateDescription" }]
uint16 CompletionState;

    [Override ( "ErrorCode" ),
     Description (
        "If applicable, this string should contain one or more "
        "vendor specific error codes that the diagnostic service "
        "detected. These error codes may be used by the vendor "
        "for variety of purposes such as: fault data base "
        "indexing, field service trouble ticketing, product "
        "quality tracking, part failure history, etc. Since these "
        "codes are for vendor purposes they may assume any form. "
        "Details on suggested use cases will be left to white "
        "papers. The array of error codes has model "
        "correspondence with an ErrorCount array so the number of "
        "errors reported can be analyzed by individual error "
        "code." ),
     ArrayType ( "Indexed" ),
     ModelCorrespondence { "CIM_DiagnosticServiceRecord.ErrorCount" }]
string ErrorCode[];
```

```
      [Override ( "ErrorCount" ),
       Description (
          "Since some tests may detect transient and correctable "
          "errors such as a network diagnostic or memory test, an "
          "error count is useful to indicate the severity of the "
          "failure. This field contains an integer value of the "
          "number of errors detected by the test. The ErrorCount is "
          "an array with model correspondence to ErrorCode so that "
          "the test can report an ErrorCount on each type of error "
          "encountered. It is recommended that hard errors and "
          "correctable or recoverable errors be given different "
          "codes so that clients with knowledge of the error codes "
          "can evaluate correctable, recoverable, and hard errors "
          "independently." ),
       ArrayType ( "Indexed" ),
       ModelCorrespondence { "CIM_DiagnosticServiceRecord.ErrorCode" }]
   uint32 ErrorCount[];

};

// ===================================================================
// ASSOCIATIONS
// ===================================================================

// ===================================================================
// BROCADE_AvailableDiagnosticServiceForAdapter
// ===================================================================
   [Association,
    Description (
       "This is an association class that relates a DiagnosticService "
       "to an adapter. Consumers wishing to \'diagnose\' a particular "
       "Element could query this association to determine what services"
       " are available." )]
class BROCADE_AvailableDiagnosticServiceForAdapter : CIM_AvailableDiagnosticService {

      [Override ( "ServiceProvided" ),
       Key, Description ( "The Service that is available." )]
   BROCADE_DiagnosticTest REF ServiceProvided;

      [Override ( "UserOfService" ),
       Key, Description (
          "The adapter that can use the Service." )]
   BROCADE_PortController REF UserOfService;
      [Override ( "EstimatedDurationOfService" ),
       Description (
          "Estimated magnitude of time to perform the referenced "
          "DiagnosticService on the referenced ManagedElement. \n"
          "Since the processing speed of a system can vary "
          "immensely due to a variety of factors (e.g., processor "
```

```
          "speed), this property takes on values that are a "
          "statement of magnitude, not absolute time. If greater "
          "accuracy can be provided, a quantification may be "
          "specified in the corresponding integer property, "
          "EstimatedDurationQualifier. \n"
          "Since execution times could vary by Element, this "
          "property is located in the association between the two "
          "entities." ),
       ValueMap { "0", "2", "3", "4", "5", "6" },
       Values { "Unknown", "Milliseconds", "Seconds", "Minutes",
          "Hours", "Days" },
       ModelCorrespondence {
          "CIM_AvailableDiagnosticService.EstimatedDurationQualifier" }]
   uint16 EstimatedDurationOfService;

      [Override ( "EstimatedDurationQualifier" ),
       Description (
          "EstimatedDurationQualifier can be used to further "
          "quantify the magnitude of time to perform the service." ),
       ModelCorrespondence {
          "CIM_AvailableDiagnosticService.EstimatedDurationOfService" }]
   uint32 EstimatedDurationQualifier;
};


// ===================================================================
// BROCADE_AvailableDiagnosticServiceForFCPort
// ===================================================================

   [Association,
    Description (
       "This is an association class that relates a DiagnosticService "
       "to a FC Port. Consumers wishing to \'diagnose\' a particular "
       "Element could query this association to determine what services"
       " are available." )]
class BROCADE_AvailableDiagnosticServiceForFCPort : CIM_AvailableDiagnosticService {

      [Override ( "ServiceProvided" ),
       Key, Description ( "The Service that is available." )]
   BROCADE_DiagnosticTest REF ServiceProvided;

      [Override ( "UserOfService" ),
       Key, Description (
          "The FC port that can use the Service." )]
   BROCADE_FCPort REF UserOfService;
      [Override ( "EstimatedDurationOfService" ),
       Description (
          "Estimated magnitude of time to perform the referenced "
          "DiagnosticService on the referenced ManagedElement. \n"
```

```
          "Since the processing speed of a system can vary "
          "immensely due to a variety of factors (e.g., processor "
          "speed), this property takes on values that are a "
          "statement of magnitude, not absolute time. If greater "
          "accuracy can be provided, a quantification may be "
          "specified in the corresponding integer property, "
          "EstimatedDurationQualifier. \n"
          "Since execution times could vary by Element, this "
          "property is located in the association between the two "
          "entities." ),
       ValueMap { "0", "2", "3", "4", "5", "6" },
       Values { "Unknown", "Milliseconds", "Seconds", "Minutes",
          "Hours", "Days" },
       ModelCorrespondence {
          "CIM_AvailableDiagnosticService.EstimatedDurationQualifier" }]
   uint16 EstimatedDurationOfService;

      [Override ( "EstimatedDurationQualifier" ),
       Description (
          "EstimatedDurationQualifier can be used to further "
          "quantify the magnitude of time to perform the service." ),
       ModelCorrespondence {
          "CIM_AvailableDiagnosticService.EstimatedDurationOfService" }]
   uint32 EstimatedDurationQualifier;
};

// ===================================================================
// BROCADE_AvailableDiagnosticServiceForEthernetPort
// ===================================================================
   [Association,
    Description (
       "This is an association class that relates a DiagnosticService "
       "to an Ethernet Port. Consumers wishing to \'diagnose\' a "
       "particular Element could query this association to determine "
       "what services are available." )]
class BROCADE_AvailableDiagnosticServiceForEthernetPort : CIM_AvailableDiagnosticService {

      [Override ( "ServiceProvided" ),
       Key, Description ( "The Service that is available." )]
   BROCADE_DiagnosticTest REF ServiceProvided;

      [Override ( "UserOfService" ),
       Key, Description (
          "The Ethernet port that can use the Service." )]
   BROCADE_EthernetPort REF UserOfService;
      [Override ( "EstimatedDurationOfService" ),
       Description (
          "Estimated magnitude of time to perform the referenced "
          "DiagnosticService on the referenced ManagedElement. \n"
```

```
          "Since the processing speed of a system can vary "
          "immensely due to a variety of factors (e.g., processor "
          "speed), this property takes on values that are a "
          "statement of magnitude, not absolute time. If greater "
          "accuracy can be provided, a quantification may be "
          "specified in the corresponding integer property, "
          "EstimatedDurationQualifier. \n"
          "Since execution times could vary by Element, this "
          "property is located in the association between the two "
          "entities." ),
       ValueMap { "0", "2", "3", "4", "5", "6" },
       Values { "Unknown", "Milliseconds", "Seconds", "Minutes",
          "Hours", "Days" },
       ModelCorrespondence {
          "CIM_AvailableDiagnosticService.EstimatedDurationQualifier" }]
   uint16 EstimatedDurationOfService;

      [Override ( "EstimatedDurationQualifier" ),
       Description (
          "EstimatedDurationQualifier can be used to further "
          "quantify the magnitude of time to perform the service." ),
       ModelCorrespondence {
          "CIM_AvailableDiagnosticService.EstimatedDurationOfService" }]
   uint32 EstimatedDurationQualifier;
};

// ===================================================================
// BROCADE_DiagnosticElementSoftwareIdentity
// ===================================================================

   [Association,
    Description (
       "ElementSoftwareIdentity allows a Managed Element to report its "
       "software related asset information (firmware, drivers, "
       "configuration software, and etc.)" )]

class BROCADE_DiagnosticElementSoftwareIdentity : CIM_ElementSoftwareIdentity {

      [Override ( "Antecedent" ),
       Description ( "A LogicalElement\'s Software Asset." )]
   BROCADE_DiagnosticSoftwareIdentity REF Antecedent;

      [Override ( "Dependent" ),
       Description (
          "The ManagedElement that requires or uses the software." )]
   BROCADE_DiagnosticTest REF Dependent;


};
```

```
// ==================================================================
//  BROCADE_OwningJobElement
// ==================================================================
   [Association,
    Description (
       "OwningJobElement represents an association between a Job and "
       "the ManagedElement responsible for the creation of the Job. "
       "This association may not be possible, given that the execution "
       "of jobs can move between systems and that the lifecycle of the "
       "creating entity may not persist for the total duration of the "
       "job. However, this can be very useful information when "
       "available. This association defines a more specific \'owner\' "
       "than is provided by the CIM_Job.Owner string." ),
    ModelCorrespondence { "CIM_Job.Owner" }]
class BROCADE_OwningJobElement : CIM_OwningJobElement {

      [Override ( "OwningElement" ),
       Key, Max ( 1 ),
       Description (
          "The ManagedElement responsible for the creation of the Job."
           )]
   BROCADE_DiagnosticTest REF OwningElement;

      [Override ( "OwnedElement" ),
       Key, Description ( "The Job created by the ManagedElement." )]
   BROCADE_ConcreteJob REF OwnedElement;

};

// ==================================================================
//  BROCADE_AffectedJobElement
// ==================================================================
[Association,
    Description (
       "AffectedJobElement represents an association between a Job and "
       "the ManagedElement(s) that may be affected by its execution. "
       "It may not be feasible for the Job to describe all of the "
       "affected elements. The main purpose of this association is to "
       "provide information when a Job requires exclusive use of the "
       "\'affected\' ManagedElment(s) or when describing that side "
       "effects may result." )]
class BROCADE_AffectedJobElement : CIM_AffectedJobElement {

      [Override ("AffectedElement"),
       Key, Description (
          "The ManagedElement affected by the execution of the Job." )]
   CIM_ManagedElement REF AffectedElement;
```

```
      [Override ("AffectingElement"),
       Key, Description (
          "The Job that is affecting the ManagedElement." )]
   CIM_Job REF AffectingElement;

};

// ===================================================================
//  BROCADE_ServiceRecordAppliesToElement
// ===================================================================
   [Association,
    Description (
       "ManagedSystemElements may create RecordForLog objects to "
       "record their event, error or informational data within Logs. "
       "The relationship between these managed elements and the "
       "records they create is described by this association." )]
class BROCADE_ServiceRecordAppliesToElement : CIM_RecordAppliesToElement {

      [Override ( "Antecedent" ),
       Description ( "The Service Record." )]
   CIM_RecordForLog REF Antecedent;

      [Override ( "Dependent" ),
       Description (
          "The ManagedSystemElement that participated in the "
          "creation of the Record." )]
   CIM_ManagedElement REF Dependent;

};

// ===================================================================
//  BROCADE_CompletionRecordAppliesToElement
// ===================================================================
   [Association,
    Description (
       "ManagedSystemElements may create RecordForLog objects to "
       "record their event, error or informational data within Logs. "
       "The relationship between these managed elements and the "
       "records they create is described by this association." )]
class BROCADE_CompletionRecordAppliesToElement : CIM_RecordAppliesToElement {

      [Override ( "Antecedent" ),
       Description ( "The Completion Record." )]
   CIM_RecordForLog REF Antecedent;

      [Override ( "Dependent" ),
       Description (
          "The ManagedSystemElement that participated in the "
          "creation of the Record." )]
```

```
   CIM_ManagedElement REF Dependent;

};
```

//Server Profile

```
// ==================================================================
// BROCADE_ObjectManager
// ==================================================================

   [Description (
       "Represents the capabilities of the CIM Server in which this "
       "ObjectManager class resides." )]

class BROCADE_ObjectManager : CIM_ObjectManager {

      [Override ( "SystemCreationClassName" ),
       Key, Description (
          "The CreationClassName of the scoping System." ),
       MaxLen ( 256 ),
       Propagated ( "CIM_System.CreationClassName" )]
   string SystemCreationClassName;

      [Override ( "SystemName" ),
       Key, Description (
          "The Name of the scoping System." ),
       MaxLen ( 256 ),
       Propagated ( "CIM_System.Name" )]
   string SystemName;

      [Override ( "CreationClassName" ),
       Key, Description (
          "CreationClassName indicates the name of the class or the "
          "subclass that is used in the creation of an instance. "
          "When used with the other key properties of this class, "
          "this property allows all instances of this class and its "
          "subclasses to be uniquely identified." ),
       MaxLen ( 256 )]
   string CreationClassName;

      [Override ( "Name" ),
       Description (
          "The Name property is used to uniquely identify a CIM "
          "Server." )]
   string Name;

      [Override ( "ElementName" ),
       Description (
```

```
         "The ElmentName property is used as a name of the CIM "
         "Server for human interfaces." )]
   string ElementName;

      [Override ( "Description" ),
       Description (
         "The description property is used as a description of the "
         "CIM Server for human interfaces." )]
   string Description;

      [Override ( "Started" ),
       Description (
         "A boolean that indicates whether the Service has been started "
         "(TRUE), or stopped (FALSE)." )]
   boolean Started;

      [Override ("OperationalStatus"),
       Description (
         "Indicates the current status of the object manager service."),
       ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
         "10", "11", "12", "13", "14", "15", "16", "17", "18",
         "..", "0x8000.." },
       Values { "Unknown", "Other", "OK", "Degraded", "Stressed",
         "Predictive Failure", "Error", "Non-Recoverable Error",
         "Starting", "Stopping", "Stopped", "In Service",
         "No Contact", "Lost Communication", "Aborted", "Dormant",
         "Supporting Entity in Error", "Completed", "Power Mode",
         "DMTF Reserved", "Vendor Reserved" },
       ArrayType ( "Indexed" ),
       ModelCorrespondence {
         "CIM_ManagedSystemElement.StatusDescriptions" }]
   uint16 OperationalStatus[];

};


// ===================================================================
// BROCADE_Namespace
// ===================================================================

    [Description (
       "Namespace provides a domain (in other words, a container), in "
       "which the instances of a class are guaranteed to be unique "
       "per the KEY qualifier definitions. It is named relative to the "
       "CIM_ObjectManager implementation that provides such a domain." )]
class BROCADE_Namespace : CIM_Namespace {

      [Override ( "SystemCreationClassName" ),
       Key, Description ( "The scoping System\'s CreationClassName." ),
```

```
    MaxLen ( 256 ),
    Propagated ( "CIM_ObjectManager.SystemCreationClassName" )]
string SystemCreationClassName;

   [Override ( "SystemName" ),
    Key, Description ( "The scoping System\'s Name." ),
    MaxLen ( 256 ),
    Propagated ( "CIM_ObjectManager.SystemName" )]
string SystemName;

   [Override ( "ObjectManagerCreationClassName" ),
    Key, Description (
       "The scoping ObjectManager\'s CreationClassName." ),
    MaxLen ( 256 ),
    Propagated ( "CIM_ObjectManager.CreationClassName" )]
string ObjectManagerCreationClassName;

   [Override ( "ObjectManagerName" ),
    Key, Description ( "The scoping ObjectManager\'s Name." ),
    MaxLen ( 256 ),
    Propagated ( "CIM_ObjectManager.Name" )]
string ObjectManagerName;

   [Override ( "CreationClassName" ),
    Key, Description (
       "CreationClassName indicates the name of the class or the "
       "subclass used in the creation of an instance. When used "
       "with the other key properties of this class, this "
       "property allows all instances of this class and its "
       "subclasses to be uniquely identified." ),
    MaxLen ( 256 )]
string CreationClassName;

   [Override ( "Name" ),
    Key, Description (
       "A string to uniquely identify the Namespace within the "
       "ObjectManager." ),
    MaxLen ( 256 )]
string Name;

   [Override ( "ClassType" ),
    Write, Description (
       "Enumeration indicating the schema of the Namespace\'s "
       "objects. For example, they may be instances of classes "
       "of a specific CIM version or a mapping from another "
       "standard, such as SNMP. If \'Other\' is selected, the "
       "DescriptionOfClassType property MUST be populated." ),
    ValueMap { "0", "1", "2", "200", "201", "202" },
    Values { "Unknown", "Other", "CIM", "DMI Recast",
```

```
          "SNMP Recast", "CMIP Recast" },
       ModelCorrespondence { "CIM_Namespace.DescriptionOfClassType",
          "CIM_Namespace.ClassTypeVersion" }]
   uint16 ClassType;


};

// ===================================================================
// BROCADE_CIMXMLCommunicationMechanism
// ===================================================================

    [Description (
       "This describes access to an ObjectManager. It describes a "
       "protocol and data encoding that can be used for communication"
       " by adding roperties specific to the CIM-XML protocol (XML "
       "encoding and CIM Operations)." )]
class BROCADE_CIMXMLCommunicationMechanism : CIM_CIMXMLCommunicationMechanism {

      [Override ( "SystemCreationClassName" ),
       Key, Description (
          "The CreationClassName of the scoping System." ),
       MaxLen ( 256 ),
       Propagated ( "CIM_System.CreationClassName" )]
   string SystemCreationClassName;

      [Override ( "SystemName" ),
       Key, Description ( "The Name of the scoping System." ),
       MaxLen ( 256 ),
       Propagated ( "CIM_System.Name" )]
   string SystemName;

      [Override ( "CreationClassName" ),
       Key, Description (
          "CreationClassName indicates the name of the class or the "
          "subclass used in the creation of an instance. When used "
          "with the other key properties of this class, this "
          "property allows all instances of this class and its "
          "subclasses to be uniquely identified." ),
       MaxLen ( 256 )]
   string CreationClassName;

      [Key, Override ( "Name" ),
       Description (
          "The Name property uniquely identifies the protocol and encoding"
          "mechanism used." ),
       MaxLen ( 256 )]
   string Name;
```

```
    [Override ( "Version" ),
     Required, Description (
        "The version of the protocol/encoding mechanism used." )]
string Version;

    [Override ( "AuthenticationMechanismsSupported" ),
     Required, Description (
        "Enumerated array describing the types of authentication "
        "supported by the ObjectManager, using the "
        "encoding/protocol. specified in the property, "
        "CommunicationMechanism. The defined values represent the "
        "authentication defined in the DMTF document, "
        "Specification for CIM Operations over HTTP." ),
     ValueMap { "0", "1", "2", "3", "4" },
     Values { "Unknown", "Other", "None", "Basic", "Digest" },
     ArrayType ( "Indexed" ),
     ModelCorrespondence {
        "CIM_ObjectManagerCommunicationMechanism.AuthenticationMechanismDescriptions" }]
uint16 AuthenticationMechanismsSupported[];

    [Override ( "MultipleOperationsSupported" ),
     Required, Description (
        "Boolean indicating whether the ObjectManager supports "
        "multiple operation requests (TRUE) or only simple "
        "requests (FALSE)." )]
boolean MultipleOperationsSupported;

    [Override ( "FunctionalProfilesSupported" ),
     Required, Description (
        "Enumerated array describing the types of operations "
        "supported by the ObjectManager, using this "
        "encoding/protocol. The enumeration is based on the "
        "Functional Profiles defined for conformance in the DMTF "
        "document, Specification for CIM Operations over HTTP." ),
     ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
        "10", "11", "12" },
     Values { "Unknown", "Other", "Basic Read", "Basic Write",
        "Schema Manipulation", "Instance Manipulation",
        "Association Traversal", "Query Execution",
        "Qualifier Declaration", "Indications", "Pulled Read",
        "Pulled Read Count", "Pulled Query Execution" },
     ArrayType ( "Indexed" ),
     ModelCorrespondence {
        "CIM_ObjectManagerCommunicationMechanism.FunctionalProfileDescriptions" }]
uint16 FunctionalProfilesSupported[];
```

```
      [Required, Override ( "CommunicationMechanism" ),
       Description (
          "CommunicationMechanism describes an encoding and protocol which "
          "can be used to communicate with the server. The only valid "
          "CommunicationMechanism for this subclass is CIM-XML." ),
       ValueMap { "2" },
       Values { "CIM-XML" }]
   uint16 CommunicationMechanism = 2;

      [Override ( "CIMValidated" ),
       Required, Description (
          "Describes whether the CIM Server is strictly validating "
          "(validates the XML document against the DTD) or not "
          "(loosely validating)." )]
   boolean CIMValidated;

};


// ===================================================================
// ASSOCIATIONS
// ===================================================================


// ===================================================================
// BROCADE_CommMechanismForManager
// ===================================================================

   [Association,
    Description (
       "CommMechanismForManager is an association between an "
       "ObjectManager and an ObjectManagerCommunicationMechanism "
       "class. The latter describes a possible encoding/protocol/ set "
       "of operations for accessing the referenced ObjectManager." )]

class BROCADE_CommMechanismForManager : CIM_CommMechanismForManager {

      [Override ( "Antecedent" ),
       Min ( 1 ),
       Max ( 1 ),
       Description (
          "The specific ObjectManager whose communication mechanism "
          "is described." )]
   BROCADE_ObjectManager REF Antecedent;
```

```
      [Override ( "Dependent" ),
       Min ( 1 ),
       Description (
          "The encoding/protocol/set of operations that may be used "
          "to communicate with the referenced ObjectManager." )]
   BROCADE_CIMXMLCommunicationMechanism REF Dependent;

};

// ===================================================================
// BROCADE_NamespaceInManager
// ===================================================================

   [Association,
    Description (
       "NamespaceInManager is an association describing the Namespaces "
       "hosted by a CIM ObjectManager." )]

class BROCADE_NamespaceInManager : CIM_NamespaceInManager {

      [Override ( "Antecedent" ),
       Min ( 1 ),
       Max ( 1 ),
       Description ( "The ObjectManager containing a Namespace." )]
   BROCADE_ObjectManager REF Antecedent;

      [Override ( "Dependent" ),
       Weak, Description ( "The Namespace in an ObjectManager." )]
   BROCADE_Namespace REF Dependent;
};


// ===================================================================
// BROCADE_ObjectManagerHostedService
// ===================================================================

   [Association,
    Description (
       "An association between the Object Manager Service and the "
       "System on which the CIM server is running.")]

class BROCADE_ObjectManagerHostedService : CIM_HostedService {

      [Override ( "Antecedent" ),
       Min ( 1 ),
       Max ( 1 ),
       Description ( "The System hosting the Object Manager service." )]
   BROCADE_ComputerSystem REF Antecedent;
```

```
      [Override ( "Dependent" ),
       Weak, Description ( "The Object Manager Service hosted on the System." )]
   BROCADE_ObjectManager REF Dependent;
};

// ===================================================================
// BROCADE_CommMechHostedAccessPoint
// ===================================================================

   [Association,
    Description (
       "An association between the communication mechanisms or Service"
       " Access Point (SAP) and the hosting system.")]
class BROCADE_CommMechHostedAccessPoint : CIM_HostedAccessPoint {

      [Override ( "Antecedent" ),
       Min ( 1 ),
       Max ( 1 ),
       Description ( "The hosting System." )]
   BROCADE_ComputerSystem REF Antecedent;

      [Override ( "Dependent" ),
       Weak, Description (
          "The communication mechanism (SAP) that is hosted on this "
          "System." )]
   BROCADE_CIMXMLCommunicationMechanism REF Dependent;

};
```

//Physical Asset subprofile

```
// ===================================================================
// BROCADE_PhysicalPackage
// ===================================================================

   [Description (
       "The PhysicalConnector class represents any PhysicalElement "
       "that is used to connect to other Elements. Any object that can "
       "be used to connect and transmit signals or power between two "
       "or more PhysicalElements is a descendant (or member) of this "
       "class. For example, Slots and D-shell connectors are types of "
       "PhysicalConnectors." )]
class BROCADE_PhysicalConnector : CIM_PhysicalConnector {

      [Override ( "Description" ),
       Description (
          "The description about the physical connector." )]
   string Description;
```

```
   [Override ( "Tag" ),
    Key, Description (
       "An arbitrary string that uniquely identifies the connector "
       "and serves as the key of the Element. "
       "The Tag property can contain information such as asset "
       "tag or serial number data." ),
    MaxLen ( 256 )]
string Tag;

   [Override ( "CreationClassName" ),
    Key, Description (
       "CreationClassName indicates the name of the class or the "
       "subclass used in the creation of an instance. When used "
       "with the other key properties of this class, this "
       "property allows all instances of this class and its "
       "subclasses to be uniquely identified." ),
    MaxLen ( 256 )]
string CreationClassName;

   [Override ( "ConnectorLayout" ),
    Description (
       "Describes the type of packaging normally associated with "
       "this type of connector." ),
    ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
       "10", "11", "12", "13", "14", "15", "17..32567",
       "32568..65535" },
    Values { "Unknown", "Other", "RS232", "BNC", "RJ11", "RJ45",
       "DB9", "Slot", "SCSI High Density", "SCSI Low Density",
       "Ribbon", "AUI", "Fiber SC", "Fiber ST", "FDDI-MIC",
       "Fiber-RTMJ", "DMTF Reserved", "Vendor Reserved" },
    ModelCorrespondence {
       "CIM_PhysicalConnector.ConnectorDescription" }]
uint16 ConnectorLayout;

   [Override ( "ConnectorDescription" ),
    Description (
       "A string describing the Connector - used when the "
       "ConnectorLayout property is set to 1 (\"Other\"). "
       "Connector Description should be set to NULL when "
       "ConnectorLayout is any value other than 1." ),
    MappingStrings { "MIF.DMTF|Bus Port|004.11" },
    ModelCorrespondence { "CIM_PhysicalConnector.ConnectorLayout" }]
string ConnectorDescription;

   [Override ( "Manufacturer" ),
    Description (
       "The name of the organization responsible for producing "
       "the connector."),
```

```
     MaxLen ( 256 ),
     MappingStrings { "MIB.IETF|Entity-MIB.entPhysicalMfgName",
        "MIF.DMTF|FRU|003.4" }]
string Manufacturer;

    [Override ( "Model" ),
     Description (
        "The name by which the physical connector is generally known." ),
     MaxLen ( 256 ),
     MappingStrings { "MIB.IETF|Entity-MIB.entPhysicalDescr",
        "MIF.DMTF|FRU|003.5" }]
string Model;

    [Override("ElementName"),
     Description (
        "A user-friendly name for the physical connector installed. "
        "This property allows each instance to define a "
        "user-friendly name in addition to its key properties, identity "
        "data, and description information.")]
string ElementName;

    [Override ( "ConnectorType" ),
     Description (
        "An array of integers defining the type of "
        "PhysicalConnector. An array is specified to allow the "
        "description of \'combinations\' of Connector "
        "information. For example, one array entry could specify "
        "RS-232 (value=25), another DB-25 (value=23) and a third "
        "entry define the Connector as \"Male\" (value=2). \n"
        "This single property is being deprecated in lieu of "
        "using separate properties to describe the various "
        "aspects of the connector. The separation allows for a "
        "more generic means of describing the connectors. "
        "Obsolete connectors were intentionally removed from the "
        "new list." ),
     ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
        "10", "11", "12", "13", "14", "15", "16", "17", "18",
        "19", "20", "21", "22", "23", "24", "25", "26", "27",
        "28", "29", "30", "31", "32", "33", "34", "35", "36",
        "37", "38", "39", "40", "41", "42", "43", "44", "45",
        "46", "47", "48", "49", "50", "51", "52", "53", "54",
        "55", "56", "57", "58", "59", "60", "61", "62", "63",
        "64", "65", "66", "67", "68", "69", "70", "71", "72",
        "73", "74", "75", "76", "77", "78", "79", "80", "81",
        "82", "83", "84", "85", "86", "87", "88", "89", "90",
        "91", "92", "93", "94", "95", "96", "97", "98", "99",
        "100", "101", "102", "103", "104", "105", "106", "107",
        "108", "109", "110", "111", "112", "113", "114", "115",
        "116", "117", "118", "119", "120", "121", "122" },
```

```
Values { "Unknown", "Other", "Male", "Female", "Shielded",
   "Unshielded", "SCSI (A) High-Density (50 pins)",
   "SCSI (A) Low-Density (50 pins)",
   "SCSI (P) High-Density (68 pins)", "SCSI SCA-I (80 pins)",
   "SCSI SCA-II (80 pins)",
   // 11
   "Fibre Channel (DB-9, Copper)",
   "Fibre Channel (Optical Fibre)",
   "Fibre Channel SCA-II (40 pins)",
   "Fibre Channel SCA-II (20 pins)", "Fibre Channel BNC",
   "ATA 3-1/2 Inch (40 pins)", "ATA 2-1/2 Inch (44 pins)",
   "ATA-2", "ATA-3", "ATA/66", "DB-9", "DB-15", "DB-25",
   "DB-36", "RS-232C", "RS-422", "RS-423", "RS-485",
   "RS-449", "V.35",
   // 31
   "X.21", "IEEE-488",
   "AUI", "UPT Category 3", "UPT Category 4",
   "UPT Category 5", "BNC", "RJ11", "RJ45", "Fiber MIC",
   "Apple AUI", "Apple GeoPort", "PCI", "ISA", "EISA",
   "VESA", "PCMCIA", "PCMCIA Type I", "PCMCIA Type II",
   "PCMCIA Type III",
   // 51
   "ZV Port",
   "CardBus", "USB", "IEEE 1394", "HIPPI", "HSSDC (6 pins)",
   "GBIC", "DIN", "Mini-DIN", "Micro-DIN", "PS/2",
   "Infrared", "HP-HIL", "Access.bus", "NuBus", "Centronics",
   "Mini-Centronics", "Mini-Centronics Type-14",
   "Mini-Centronics Type-20", "Mini-Centronics Type-26",
   // 71
   "Bus Mouse", "ADB",
   "AGP", "VME Bus", "VME64", "Proprietary",
   "Proprietary Processor Card Slot",
   "Proprietary Memory Card Slot",
   "Proprietary I/O Riser Slot", "PCI-66MHZ", "AGP2X",
   "AGP4X", "PC-98", "PC-98-Hireso", "PC-H98", "PC-98Note",
   "PC-98Full", "SSA SCSI", "Circular",
   "On Board IDE Connector", "On Board Floppy Connector",
   "9 Pin Dual Inline", "25 Pin Dual Inline",
   "50 Pin Dual Inline", "68 Pin Dual Inline",
   "On Board Sound Connector", "Mini-jack", "PCI-X",
   "Sbus IEEE 1396-1993 32 bit",
   // 100
   "Sbus IEEE 1396-1993 64 bit",
   "MCA", "GIO", "XIO", "HIO", "NGIO", "PMC", "MTRJ",
   "VF-45", "Future I/O", "SC", "SG", "Electrical",
   "Optical", "Ribbon", "GLM", "1x9", "Mini SG", "LC",
   "HSSC",
   // 120
   "VHDCI Shielded (68 pins)",
```

```
        "InfiniBand", "AGP8X" },
    ArrayType ( "Indexed" ),
    MappingStrings { "MIF.DMTF|Bus Port|004.10" },
    ModelCorrespondence {
       "CIM_PhysicalConnector.OtherTypeDescription" }]
uint16 ConnectorType[];

   [Override ( "Version" ),
    Description ("A string that indicates the version of the "
                 "PhysicalElement."),
    MaxLen ( 64 ),
    MappingStrings {
       "MIB.IETF|Entity-MIB.entPhysicalHardwareRev",
       "MIF.DMTF|FRU|003.8" }]
string Version;

   [Override ( "PartNumber" ),
    Description (
       "The part number assigned by the organization that is "
       "responsible for producing or manufacturing the "
       "PhysicalConnector." ),
    MaxLen ( 256 ),
    MappingStrings { "MIB.IETF|Entity-MIB.entPhysicalModelName" }]
string PartNumber;

   [Override ( "SerialNumber" ),
    Description (
       "A manufacturer-allocated number used to identify the "
       "Physical Connector." ),
    MaxLen ( 256 ),
    MappingStrings { "MIB.IETF|Entity-MIB.entPhysicalSerialNum",
       "MIF.DMTF|FRU|003.7" }]
string SerialNumber;

   [Override ( "ConnectorGender" ),
    Description ( "Describes the gender of the connector." ),
    ValueMap { "0", "2", "3" },
    Values { "Unknown", "Male", "Female" }]
uint16 ConnectorGender;

   [Override ( "ConnectorPinout" ),
    Description (
       "A free-form string describing the pin configuration "
       "and/or signal usage of a PhysicalConnector." ),
    ModelCorrespondence { "CIM_PhysicalConnector.NumPhysicalPins" }]
string ConnectorPinout;
```

```
      [Override ( "NumPhysicalPins" ),
       Description (
          "Describes the number of physical pins (male/female) that "
          "are present on this connector." ),
       ModelCorrespondence { "CIM_PhysicalConnector.ConnectorPinout" }]
   uint32 NumPhysicalPins;

};


//===================================================================
// ASSOCIATIONS
// ===================================================================


// ===================================================================
// BROCADE_EthernetPortRealizes
// ===================================================================
   [Association,
    Description (
       "The association that defines the mapping "
       "between LogicalDevices (Network or Ethernet Ports) and the "
       "PhysicalElements (PhysicalConnector) that implement them." )]

class BROCADE_EthernetPortRealizes : CIM_Realizes {

      [Override ( "Antecedent" ),
       Description (
          "The physical connector that implements the network port"
          " on the adapter." )]
   CIM_PhysicalElement REF Antecedent;

      [Override ( "Dependent" ),
       Description ( "The CNA installed on the host." )]
   CIM_LogicalDevice REF Dependent;

};

// ===================================================================
// BROCADE_PhysicalConnectorContainer
// ===================================================================
   [Association, Aggregation,
    Description (
       "The Container association represents the relationship between "
       "a contained and a containing PhysicalElement. A containing "
       "object must be a PhysicalPackage." )]
class BROCADE_PhysicalConnectorContainer : CIM_Container {

      [Aggregate, Override ( "GroupComponent" ),
```

```
       Max ( 1 ),
       Description (
          "The PhysicalPackage (of CNA) that contains other "
          "PhysicalElements (Physical Connectors), including other "
          "Packages." ),
       MappingStrings { "MIB.IETF|Entity-MIB.entPhysicalContainedIn" }]
   CIM_PhysicalPackage REF GroupComponent;

      [Override ( "PartComponent" ),
       Description (
          "The PhysicalElement (PhysicalConnector) which is contained "
          "in the Package." )]
   CIM_PhysicalElement REF PartComponent;
};
```

//Hosted LAN Network Port Profile

```
// ==================================================================
// BROCADE_LANEndpoint
// ==================================================================
   [Description (
       "A communication endpoint which, when its associated interface "
       "device is connected to a LAN, may send and receive data "
       "frames. LANEndpoints include Ethernet, Token Ring and FDDI "
       "interfaces." )]
class BROCADE_LANEndpoint : CIM_LANEndpoint {

      [Override ( "CreationClassName" ), Key, MaxLen (256),
       Description (
          "CreationClassName indicates the name of the class.  When used "
          "with the other key properties of this class, this property "
          "allows all instances of this class to be uniquely identified.")]
   string CreationClassName;

      [Override ( "SystemCreationClassName" ), Key, MaxLen (256),
        Description (
           "The scoping system's creation class name.  The scoping "
           "system is the host in which the CNA containing this end "
           "point is installed.")]
   string SystemCreationClassName;

      [Override ( "SystemName" ), Key, MaxLen (256),
       Description (
          "The scoping system's Name property. This property represents "
          "the name of the host computer system.")]
   string SystemName;
```

```
    [Override ( "Name" ),
     Description (
        "The SCSI identifier for the target or initiator device, "
        "in the format appropriate for the ConnectionType. If a "
        "ConnectionType specific subclass is defined, the "
        "subclass may override Name to define the format. For "
        "other ConnectionTypes, the format (and content) should "
        "match that of PermamnentAddress of the corresponding "
        "LogicalPort." ),
     MaxLen ( 256 ),
     MappingStrings {
        "SPC.INCITS-T10 |Protocol Specific Parameters | Name" },
     ModelCorrespondence {
        "CIM_SCSIProtocolEndpoint.ConnectionType",
        "CIM_SCSIProtocolEndpoint.OtherConnectionType" }]
string Name;

    [Override ( "NameFormat" ),
     Description (
        "NameFormat contains the naming heuristic that is "
        "selected to ensure that the value of the Name property "
        "is unique. For example, you might choose to prepend the "
        "name of the port or interface with the Type of "
        "ProtocolEndpoint (for example, IPv4) of this instance "
        "followed by an underscore." ),
     MaxLen ( 256 )]
string NameFormat;

    [Override ( "ProtocolIFType" ),
     Description (
        "ProtocolIFType is an enumeration that is synchronized "
        "with the IANA ifType MIB. The ifType MIB is maintained "
        "at the URL, "
        "http://www.iana.org/assignments/ianaiftype-mib. Also, "
        "additional values defined by the DMTF are included. The "
        "property is used to categorize and classify instances of "
        "the ProtocolEndpoint class. Note that if the "
        "ProtocolIFType is set to 1 (Other), then the type "
        "information should be provided in the "
        "OtherTypeDescription string property." ),
     ValueMap { "0", "1", "2", "3", "4", "5", "6", "7", "8", "9",
        "10", "11", "12", "13", "14", "15", "16", "17", "18",
        "19", "20", "21", "22", "23", "24", "25", "26", "27",
        "28", "29", "30", "31", "32", "33", "34", "35", "36",
        "37", "38", "39", "40", "41", "42", "43", "44", "45",
        "46", "47", "48", "49", "50", "51", "52", "53", "54",
        "55", "56", "57", "58", "59", "60", "61", "62", "63",
        "64", "65", "66", "67", "68", "69", "70", "71", "72",
        "73", "74", "75", "76", "77", "78", "79", "80", "81",
```

```
    "82", "83", "84", "85", "86", "87", "88", "89", "90",
    "91", "92", "93", "94", "95", "96", "97", "98", "99",
    "100", "101", "102", "103", "104", "105", "106", "107",
    "108", "109", "110", "111", "112", "113", "114", "115",
    "116", "117", "118", "119", "120", "121", "122", "123",
    "124", "125", "126", "127", "128", "129", "130", "131",
    "132", "133", "134", "135", "136", "137", "138", "139",
    "140", "141", "142", "143", "144", "145", "146", "147",
    "148", "149", "150", "151", "152", "153", "154", "155",
    "156", "157", "158", "159", "160", "161", "162", "163",
    "164", "165", "166", "167", "168", "169", "170", "171",
    "172", "173", "174", "175", "176", "177", "178", "179",
    "180", "181", "182", "183", "184", "185", "186", "187",
    "188", "189", "190", "191", "192", "193", "194", "195",
    "196", "197", "198", "199", "200", "201", "202", "203",
    "204", "205", "206", "207", "208", "209", "210", "211",
    "212", "213", "214", "215", "216", "217", "218", "219",
    "220", "221", "222", "223", "224", "225..4095", "4096",
    "4097", "4098", "4099", "4100", "4101", "4102", "4103",
    "4104", "4105", "4106", "4107", "4108", "4109", "4110",
    "4111", "4112", "4113", "4114", "4115", "4200", "4201",
    "4202", "4203", "4204", "4205", "4300", "4400", "4401",
    "4402", "4403", "4404", "4405", "4406", "..", "32768.." },
Values { "Unknown", "Other", "Regular 1822", "HDH 1822",
    "DDN X.25", "RFC877 X.25", "Ethernet CSMA/CD",
    "ISO 802.3 CSMA/CD", "ISO 802.4 Token Bus",
    "ISO 802.5 Token Ring", "ISO 802.6 MAN", "StarLAN",
    "Proteon 10Mbit", "Proteon 80Mbit", "HyperChannel",
    "FDDI", "LAP-B", "SDLC", "DS1", "E1", "Basic ISDN",
    "Primary ISDN", "Proprietary Point-to-Point Serial",
    "PPP", "Software Loopback", "EON", "Ethernet 3Mbit",
    "NSIP", "SLIP", "Ultra", "DS3", "SIP", "Frame Relay",
    "RS-232", "Parallel", "ARCNet", "ARCNet Plus", "ATM",
    "MIO X.25", "SONET", "X.25 PLE", "ISO 802.211c",
    "LocalTalk", "SMDS DXI", "Frame Relay Service", "V.35",
    "HSSI", "HIPPI", "Modem", "AAL5", "SONET Path",
    "SONET VT", "SMDS ICIP", "Proprietary Virtual/Internal",
    "Proprietary Multiplexor", "IEEE 802.12", "Fibre Channel",
    "HIPPI Interface", "Frame Relay Interconnect",
    "ATM Emulated LAN for 802.3",
    "ATM Emulated LAN for 802.5", "ATM Emulated Circuit",
    "Fast Ethernet (100BaseT)", "ISDN", "V.11", "V.36",
    "G703 at 64K", "G703 at 2Mb", "QLLC",
    "Fast Ethernet 100BaseFX", "Channel", "IEEE 802.11",
    "IBM 260/370 OEMI Channel", "ESCON",
    "Data Link Switching", "ISDN S/T Interface",
    "ISDN U Interface", "LAP-D", "IP Switch",
    "Remote Source Route Bridging", "ATM Logical", "DS0",
    "DS0 Bundle", "BSC", "Async", "Combat Net Radio",
```

```
"ISO 802.5r DTR", "Ext Pos Loc Report System",
"AppleTalk Remote Access Protocol",
"Proprietary Connectionless", "ITU X.29 Host PAD",
"ITU X.3 Terminal PAD", "Frame Relay MPI", "ITU X.213",
"ADSL", "RADSL", "SDSL", "VDSL", "ISO 802.5 CRFP",
"Myrinet", "Voice Receive and Transmit",
"Voice Foreign Exchange Office",
"Voice Foreign Exchange Service", "Voice Encapsulation",
"Voice over IP", "ATM DXI", "ATM FUNI", "ATM IMA",
"PPP Multilink Bundle", "IP over CDLC", "IP over CLAW",
"Stack to Stack", "Virtual IP Address", "MPC",
"IP over ATM", "ISO 802.5j Fibre Token Ring", "TDLC",
"Gigabit Ethernet", "HDLC", "LAP-F", "V.37", "X.25 MLP",
"X.25 Hunt Group", "Transp HDLC", "Interleave Channel",
"FAST Channel", "IP (for APPN HPR in IP Networks)",
"CATV MAC Layer", "CATV Downstream", "CATV Upstream",
"Avalon 12MPP Switch", "Tunnel", "Coffee",
"Circuit Emulation Service", "ATM SubInterface",
"Layer 2 VLAN using 802.1Q", "Layer 3 VLAN using IP",
"Layer 3 VLAN using IPX", "Digital Power Line",
"Multimedia Mail over IP", "DTM", "DCN", "IP Forwarding",
"MSDSL", "IEEE 1394", "IF-GSN/HIPPI-6400",
"DVB-RCC MAC Layer", "DVB-RCC Downstream",
"DVB-RCC Upstream", "ATM Virtual", "MPLS Tunnel", "SRP",
"Voice over ATM", "Voice over Frame Relay", "ISDL",
"Composite Link", "SS7 Signaling Link",
"Proprietary P2P Wireless", "Frame Forward",
"RFC1483 Multiprotocol over ATM", "USB",
"IEEE 802.3ad Link Aggregate", "BGP Policy Accounting",
"FRF .16 Multilink FR", "H.323 Gatekeeper", "H.323 Proxy",
"MPLS", "Multi-Frequency Signaling Link", "HDSL-2",
"S-HDSL", "DS1 Facility Data Link",
"Packet over SONET/SDH", "DVB-ASI Input",
"DVB-ASI Output", "Power Line",
"Non Facility Associated Signaling", "TR008", "GR303 RDT",
"GR303 IDT", "ISUP", "Proprietary Wireless MAC Layer",
"Proprietary Wireless Downstream",
"Proprietary Wireless Upstream", "HIPERLAN Type 2",
"Proprietary Broadband Wireless Access Point to Mulipoint",
"SONET Overhead Channel",
"Digital Wrapper Overhead Channel",
"ATM Adaptation Layer 2", "Radio MAC", "ATM Radio",
"Inter Machine Trunk", "MVL DSL", "Long Read DSL",
"Frame Relay DLCI Endpoint", "ATM VCI Endpoint",
"Optical Channel", "Optical Transport", "Proprietary ATM",
"Voice over Cable", "Infiniband", "TE Link", "Q.2931",
"Virtual Trunk Group", "SIP Trunk Group", "SIP Signaling",
"CATV Upstream Channel", "Econet", "FSAN 155Mb PON",
"FSAN 622Mb PON", "Transparent Bridge", "Line Group",
```

```
        "Voice E&M Feature Group", "Voice FGD EANA", "Voice DID",
        "MPEG Transport", "6To4", "GTP", "Paradyne EtherLoop 1",
        "Paradyne EtherLoop 2", "Optical Channel Group",
        "HomePNA", "GFP", "ciscoISLvlan", "actelisMetaLOOP",
        "Fcip", "IANA Reserved", "IPv4", "IPv6", "IPv4/v6", "IPX",
        "DECnet", "SNA", "CONP", "CLNP", "VINES", "XNS",
        "ISDN B Channel Endpoint", "ISDN D Channel Endpoint",
        "BGP", "OSPF", "UDP", "TCP", "802.11a", "802.11b",
        "802.11g", "802.11h", "NFS", "CIFS", "DAFS", "WebDAV",
        "HTTP", "FTP", "NDMP", "Telnet", "SSH", "SM CLP", "SMTP",
        "LDAP", "RDP", "HTTPS", "DMTF Reserved", "Vendor Reserved" },
     MappingStrings { "MIB.IETF|IF-MIB.ifType" },
     ModelCorrespondence {
        "CIM_ProtocolEndpoint.OtherTypeDescription" }]
uint16 ProtocolIFType;

    [Override ( "MACAddress" ),
     Description (
        "The principal unicast address used in communication with "
        "the LANEndpoint. The MAC address is formatted as twelve "
        "hexadecimal digits (e.g., \"010203040506\"), with each "
        "pair representing one of the six octets of the MAC "
        "address in \"canonical\" bit order according to RFC "
        "2469." ),
     MaxLen ( 12 )]
string MACAddress;

    [Override ( "EnabledState" ),
     MappingStrings { "MIB.IETF|IF-MIB.ifAdminStatus" }]
uint16 EnabledState;

    [Override ( "RequestedState" ),
     Description (
        "RequestedState is an integer enumeration that indicates "
        "the last requested or desired state for the element, "
        "irrespective of the mechanism through which it was "
        "requested. The actual state of the element is "
        "represented by EnabledState. This property is provided "
        "to compare the last requested and current enabled or "
        "disabled states. Note that when EnabledState is set to 5 "
        "(\"Not Applicable\"), then this property has no meaning. "
        "Refer to the EnabledState property description for "
        "explanations of the values in the RequestedState "
        "enumeration. \n"
        "\"Unknown\" (0) indicates the last requested state for "
        "the element is unknown.\n"
        "Note that the value \"No Change\" (5) has been "
        "deprecated in lieu of indicating the last requested "
        "state is \"Unknown\" (0). If the last requested or "
```

```
        "desired state is unknown, RequestedState should have the "
        "value \"Unknown\" (0), but may have the value \"No "
        "Change\" (5).Offline (6) indicates that the element has "
        "been requested to transition to the Enabled but Offline "
        "EnabledState. \n"
        "It should be noted that there are two new values in "
        "RequestedState that build on the statuses of "
        "EnabledState. These are \"Reboot\" (10) and \"Reset\" "
        "(11). Reboot refers to doing a \"Shut Down\" and then "
        "moving to an \"Enabled\" state. Reset indicates that the "
        "element is first \"Disabled\" and then \"Enabled\". The "
        "distinction between requesting \"Shut Down\" and "
        "\"Disabled\" should also be noted. Shut Down requests an "
        "orderly transition to the Disabled state, and might "
        "involve removing power, to completely erase any existing "
        "state. The Disabled state requests an immediate "
        "disabling of the element, such that it will not execute "
        "or accept any commands or processing requests. \n"
        "\n"
        "This property is set as the result of a method "
        "invocation (such as Start or StopService on "
        "CIM_Service), or can be overridden and defined as "
        "WRITEable in a subclass. The method approach is "
        "considered superior to a WRITEable property, because it "
        "allows an explicit invocation of the operation and the "
        "return of a result code. \n"
        "\n"
        "If knowledge of the last RequestedState is not supported "
        "for the EnabledLogicalElement, the property shall be "
        "NULL or have the value 12 \"Not Applicable\"." ),
    ValueMap { "0", "2", "3", "4", "5", "6", "7", "8", "9", "10",
        "11", "12", "..", "32768..65535" },
    Values { "Unknown", "Enabled", "Disabled", "Shut Down",
        "No Change", "Offline", "Test", "Deferred", "Quiesce",
        "Reboot", "Reset", "Not Applicable", "DMTF Reserved",
        "Vendor Reserved" },
    ModelCorrespondence { "CIM_EnabledLogicalElement.EnabledState" }]
uint16 RequestedState = 12;

   [Override("ElementName"),
    Description (
        "A user-friendly name for the end points present in the adapter."
        . This property allows each instance to define a "
        "user-friendly name in addition to its key properties, identity "
        "data, and description information.")]
string ElementName;
```

```
   [Override ( "Description" ),
    Description (
       "The description about the LAN end point." )]
string Description;

   [Override ( "HealthState" ),
    Description (
       "Indicates the current health of the element. This "
       "attribute expresses the health of this element but not "
       "necessarily that of its subcomponents. The possible "
       "values are 0 to 30, where 5 means the element is "
       "entirely healthy and 30 means the element is completely "
       "non-functional. The following continuum is defined: \n"
       "\"Non-recoverable Error\" (30) - The element has "
       "completely failed, and recovery is not possible. All "
       "functionality provided by this element has been lost. \n"
       "\"Critical Failure\" (25) - The element is "
       "non-functional and recovery might not be possible. \n"
       "\"Major Failure\" (20) - The element is failing. It is "
       "possible that some or all of the functionality of this "
       "component is degraded or not working. \n"
       "\"Minor Failure\" (15) - All functionality is available "
       "but some might be degraded. \n"
       "\"Degraded/Warning\" (10) - The element is in working "
       "order and all functionality is provided. However, the "
       "element is not working to the best of its abilities. For "
       "example, the element might not be operating at optimal "
       "performance or it might be reporting recoverable errors. \n"
       "\"OK\" (5) - The element is fully functional and is "
       "operating within normal operational parameters and "
       "without error. \n"
       "\"Unknown\" (0) - The implementation cannot report on "
       "HealthState at this time. \n"
       "DMTF has reserved the unused portion of the continuum "
       "for additional HealthStates in the future." ),
    ValueMap { "0", "5", "10", "15", "20", "25", "30", ".." },
    Values { "Unknown", "OK", "Degraded/Warning",
       "Minor failure", "Major failure", "Critical failure",
       "Non-recoverable error", "DMTF Reserved" }]
uint16 HealthState;

   [Override ( "MaxDataSize" ),
    Description (
       "The largest information field that may be sent or "
       "received by the LANEndpoint." ),
    Units ( "Bits" )]
uint32 MaxDataSize;

   [Override ( "LANID" ),
```

```
       Description (
          "A label or identifier for the LAN Segment to which the "
          "Endpoint is connected. If the Endpoint is not currently "
          "active/connected or this information is not known, then "
          "LANID is NULL." ),
       ModelCorrespondence { "CIM_LANConnectivitySegment.LANID",
          "CIM_LANSegment.LANID" }]
   string LANID;

};


//===========================================================================
// ASSOCIATIONS
// ===========================================================================


//===========================================================================
// BROCADE_HostedLANEndpoint
// ===========================================================================
   [Association,
    Description (
       "An association which associate the LANEndpoint to"
       " the System on which it is hosted.")]

class BROCADE_HostedLANEndpoint : CIM_HostedAccessPoint {

      [Override ( "Antecedent" ),
       Min ( 1 ),
       Max ( 1 ),
       Description ( "The hosting System." )]
   BROCADE_ComputerSystem REF Antecedent;

      [Override ( "Dependent" ),
       Weak, Description (
          "The LAN end points that are hosted on this "
          "system." )]
    BROCADE_LANEndpointPoint REF Dependent;

};

// ===========================================================================
// BROCADE_LANEndpointDeviceSAPImplementation
// ===========================================================================

   [Association,
    Description (
       "An association between a Network port and the protocol end point "
       "the port uses to access the IP network." )]
```

```
class BROCADE_LANEndpointDeviceSAPImplementation : CIM_DeviceSAPImplementation {

      [Override ( "Antecedent" ),
       Description ( "The Network port." )]
   CIM_LogicalDevice REF Antecedent;

      [Override ( "Dependent" ),
       Description (
          "The protocol end point."
           )]
   CIM_ServiceAccessPoint REF Dependent;

};
```

//Storage HBA profile

```
//===========================================================================
// ASSOCIATIONS
// ===========================================================================

// ===========================================================================
// BROCADE_ProductElementComponent
// ===========================================================================
   [Association, Experimental, Aggregation, Composition,
    Description (
       "Indicates that the referenced ManagedElement is part of a Product." )]
class BROCADE_ProductElementComponent : CIM_ProductElementComponent {

      [Override ( "GroupComponent" ),
       Max ( 1 ),
       Description ( "The Product." )]
   CIM_Product REF GroupComponent;

      [Override ( "PartComponent" ),
       Description (
          "The PortController which is a part of the Product." )]
   CIM_ManagedElement REF PartComponent;
};
```

```
//***********************************
// BROCADE_AgentService
//***********************************

   [Description (
       "A service that provides the methods to manage the adapter using  "
       "different APIs." )]

class BROCADE_AgentService  {

      [Key, MaxLen (256),
       Description (
          "An unique identifier of the agent service available in the system.")]
   string Name;
   uint32 executeMethod(
         [IN ( false ), OUT, Description (
             "Result of the execution."
              )]
      string response,
         [IN, Description (
             "Command for execution" )]
      string request);

};
```

B Profile Classes and Properties

This appendix details the requirements in class and property levels for all the supported profiles. Each profile section has a set of tables for the classes and associations defined as part of the profile. Each table has requirement details of the properties and whether the property in question is supported in the Provider.

FC HBA

Profile	FC HBA
Version	1.3.0
Organization	SNIA

Supported Classes

Standard Class	CIM_ComputerSystem
Extended Class	BROCADE_ComputerSystem
Requirement	Mandatory
API Mapping	Custom Method

Properties Requirements of BROCADE_ComputerSystem

Name	Requirement	Is it Supported?	Read/ Write
Name	Mandatory	Yes	Read Only
CreationClassName	Mandatory	Yes	Read Only
ElementName	Mandatory	Yes	Read Only
NameFormat	Mandatory	Yes	Read Only

Name	Requirement	Is it Supported?	Read/ Write
OtherIdentifyingInfo	Mandatory	Yes	Read Only
Dedicated	Mandatory	Yes	Read Only
OtherDedicatedDescriptions	Optional	No	
OperationalStatus	Mandatory	Yes	Read Only
Caption	Optional	Yes	
Description	Mandatory	Yes	Read Only
InstallDate	Optional	No	
StatusDescriptions	Optional	Yes	
Status	Optional	No	
HealthState	Optional	No	
EnabledState	Optional	No	
OtherEnabledState	Optional	No	
RequestedState	Optional	No	
EnabledDefault	Optional	No	
TimeOfLastStateChange	Optional	No	
PrimaryOwnerName	Optional	No	
PrimaryOwnerContact	Optional	No	
Roles	Optional	No	
IdentifyingDescriptions	Mandatory	Yes	Read Only
ResetCapability	Optional	No	
PowerManagementCapabilities	Optional	No	
TransitioningToState	Optional	No	

Standard Class	CIM_PortController
Extended Class	BROCADE_PortController
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_PortController

Name	Requirement	Is it Supported?	Read/Write
DeviceID	Mandatory	Yes	Read Only
CreationClassName	Mandatory	Yes	Read Only
SystemCreationClassName	Mandatory	Yes	Read Only
SystemName	Mandatory	Yes	Read Only
ControllerType	Mandatory	Yes	Read Only
Caption	Optional	No	
Description	Optional	No	
ElementName	Optional	Yes	
Name	Optional	Yes	
InstallDate	Optional	No	
OperationalStatus	Optional	Yes	
StatusDescriptions	Optional	Yes	
Status	Optional	No	
HealthState	Optional	No	
EnabledState	Optional	Yes	
OtherEnabledState	Optional	No	
RequestedState	Optional	No	
EnabledDefault	Optional	No	
TimeOfLastStateChange	Optional	No	
PowerManagementSupported	Optional	No	
PowerManagementCapabilities	Optional	No	

Name	Requirement	Is it Supported?	Read/Write
Availability	Optional	No	
StatusInfo	Optional	No	
LastErrorCode	Optional	No	
ErrorDescription	Optional	No	
ErrorCleared	Optional	No	
OtherIdentifyingInfo	Optional	No	
PowerOnHours	Optional	No	
TotalPowerOnHours	Optional	No	
IdentifyingDescriptions	Optional	No	
AdditionalAvailability	Optional	No	
MaxQuiesceTime	Optional	No	
TimeOfLastReset	Optional	No	
ProtocolSupported	Optional	No	
MaxNumberControlled	Optional	No	
ProtocolDescription	Optional	No	
OtherControllerType	Optional	No	
Date of Manufacture	Optional		Read Only

Standard Class	CIM_FCPort
Extended Class	BROCADE_FCPort
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_FCPort

Name	Requirement	Is it Supported?	Read/ Write
DeviceID	Mandatory	Yes	Read Only
CreationClassName	Mandatory	Yes	Read Only
SystemName	Mandatory	Yes	Read Only
SystemCreationClassName	Mandatory	Yes	Read Only
Caption	Optional	No	
Description	Optional	No	
Name	Optional	Yes	
InstallDate	Optional	No	
OperationalStatus	Mandatory	Yes	Read Only
UsageRestriction	Mandatory	Yes	Read Only
PortType	Mandatory	Yes	Read Only
OtherPortType	Optional	No	
OtherNetworkPortType	Optional	No	
ElementName	Mandatory	Yes	Read Only
Speed	Mandatory	Yes	Read Only
MaxSpeed	Mandatory	Yes	Read Only
RequestedSpeed	Optional	No	
PortNumber	Optional	Yes	
PermanentAddress	Mandatory	Yes	Read Only
NetworkAddresses	Optional	No	
SupportedCOS	Optional	No	
ActiveCOS	Optional	No	
SupportedFC4Types	Optional	No	
ActiveFC4Types	Optional	No	
LinkTechnology	Mandatory	Yes	Read Only
OtherLinkTechnology	Optional	No	

Name	Requirement	Is it Supported?	Read/ Write
FullDuplex	Optional	No	
AutoSense	Optional	No	
SupportedMaximumTransmissionUnit	Mandatory	Yes	Read Only
ActiveMaximumTransmissionUnit	Optional	No	
StatusDescriptions	Optional	No	
Status	Optional	No	
HealthState	Optional	No	
EnabledState	Optional	Yes	
OtherEnabledState	Optional	No	
RequestedState	Optional	No	
EnabledDefault	Optional	Yes	
TimeOfLastStateChange	Optional	No	
PowerManagementSupported	Optional	No	
PowerManagementCapabilities	Optional	No	
Availability	Optional	No	
StatusInfo	Optional	No	
LastErrorCode	Optional	No	
ErrorDescription	Optional	No	
ErrorCleared	Optional	No	
OtherIdentifyingInfo	Optional	No	
PowerOnHours	Optional	No	
TotalPowerOnHours	Optional	No	
IdentifyingDescriptions	Optional	No	
AdditionalAvailability	Optional	No	
MaxQuiesceTime	Optional	No	

Standard Class	CIM_FCPortStatistics
Extended Class	BROCADE_FCPortStatistics
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_FCPortStatistics

Name	Requirement	Is it Supported?	Read/Write
ElementName	Mandatory	Yes	Read Only
InstanceID	Mandatory	Yes	Read Only
BytesTransmitted	Mandatory	Yes	Read Only
BytesReceived	Mandatory	Yes	Read Only
PacketsTransmitted	Mandatory	Yes	Read Only
PacketsReceived	Mandatory	Yes	Read Only
CRCErrors	Mandatory	Yes	Read Only
LinkFailures	Mandatory	Yes	Read Only
PrimitiveSeqProtocolErrCount	Mandatory	Yes	Read Only
LossOfSignalCounter	Mandatory	Yes	Read Only
InvalidTransmissionWords	Mandatory	Yes	Read Only
StatisticTime	Optional	No	
LIPCount	Mandatory	Yes	Read Only
NOSCount	Mandatory	Yes	Read Only
ErrorFrames	Mandatory	Yes	Read Only
DumpedFrames	Mandatory	Yes	Read Only
LossOfSyncCounter	Mandatory	Yes	Read Only
Caption	Optional	No	
Description	Optional	No	
StartStatisticTime	Optional	No	
SampleInterval	Optional	No	

Name	Requirement	Is it Supported?	Read/Write
FramesTooShort	Optional	No	
FramesTooLong	Optional	No	
AddressErrors	Optional	No	
BufferCreditNotProvided	Optional	No	
BufferCreditNotReceived	Optional	No	
DelimiterErrors	Optional	No	
EncodingDisparityErrors	Optional	No	
LinkResetsReceived	Optional	No	
LinkResetsTransmitted	Optional	No	
MulticastFramesReceived	Optional	No	
MulticastFramesTransmitted	Optional	No	
FBSYFrames	Optional	No	
PBSYFrames	Optional	No	
FRJTFrames	Optional	No	
PRJTFrames	Optional	No	
RXClass1Frames	Optional	No	
TXClass1Frames	Optional	No	
Class1FBSY	Optional	No	
Class1PBSY	Optional	No	
Class1FRJT	Optional	No	
Class1PRJT	Optional	No	
RXClass2Frames	Optional	No	
TXClass2Frames	Optional	No	
Class2FBSY	Optional	No	
Class2PBSY	Optional	No	
Class2FRJT	Optional	No	
Class2PRJT	Optional	No	

Name	Requirement	Is it Supported?	Read/Write
RXClass3Frames	Optional	No	
TXClass3Frames	Optional	No	
Class3FramesDiscarded	Optional	No	
RXBroadcastFrames	Optional	No	
TXBroadcastFrames	Optional	No	

Standard Class	CIM_PhysicalPackage
Extended Class	BROCADE_PhysicalPackage
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_PhysicalPackage

Name	Requirement	Is it Supported?	Read/Write
Tag	Mandatory	Yes	Read Only
CreationClassName	Mandatory	Yes	Read Only
Manufacturer	Mandatory	Yes	Read Only
Model	Mandatory	Yes	Read Only
CanBeFRUed	Optional	No	
Caption	Optional	Yes	
Depth	Optional	No	
Description	Optional	No	
ElementName	Optional	Yes	
FRUNumber	Optional	Yes	
HealthState	Optional	No	
Height	Optional	No	

Name	Requirement	Is it Supported?	Read/Write
HotSwappable	Optional	No	
InstallDate	Optional	No	
ManufactureDate	Optional	No	
Name	Optional	Yes	
OperationalStatus	Optional	No	
OtherIdentifyingInfo	Optional	No	
PackageType	Optional	Yes	
PartNumber	Optional	No	
PoweredOn	Optional	No	
Removable	Optional	No	
RemovalConditions	Optional	Yes	
Replaceable	Optional	No	
SerialNumber	Optional	Yes	
SKU	Optional	No	
Status	Optional	No	
StatusDescriptions	Optional	No	
UserTracking	Optional	No	
VendorEquipmentType	Optional	No	
Version	Optional	No	
Weight	Optional	No	
Width	Optional	No	

Standard Class	CIM_Product
Extended Class	BROCADE_Product
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_Product

Name	Requirement	Is it Supported?	Read/Write
Name	Mandatory	Yes	Read Only
ElementName	Mandatory	Yes	Read Only
IdentifyingNumber	Mandatory	Yes	Read Only
Vendor	Mandatory	Yes	Read Only
Version	Mandatory	Yes	Read Only
Caption	Optional	Yes	
Description	Optional	Yes	
SKUNumber	Optional	No	
WarrantyStartDate	Optional	No	
WarrantyDuration	Optional	No	

Standard Class	CIM_SoftwareIdentity
Extended Class	BROCADE_AdapterSoftwareIdentity
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_AdapterSoftwareIdentity

NOTE

The following class table is used to model both the driver and firmware entities.

Name	Requirement	Is it Supported?	Read/Write
InstanceID	Mandatory	Yes	Read Only
VersionString	Mandatory	Yes	Read Only
Manufacturer	Mandatory	Yes	Read Only

Name	Requirement	Is it Supported?	Read/Write
Classifications	Mandatory	Yes	Read Only
BuildNumber	Optional	No	
Caption	Optional	Yes	
ClassificationDescriptions	Optional	No	
Description	Optional	Yes	
ElementName	Optional	Yes	
HealthState	Optional	No	
IdentityInfoType	Optional	Yes	
IdentityInfoValue	Optional	Yes	
InstallDate	Optional	No	
IsEntity	Optional	Yes	
IsLargeBuildNumber	Optional	Yes	
Languages	Optional	No	
MajorVersion	Optional	No	
MinorVersion	Optional	No	
Name	Optional	Yes	
OperationalStatus	Optional	No	
ReleaseDate	Optional	No	
RevisionNumber	Optional	No	
SerialNumber	Optional	No	
Status	Optional	No	
StatusDescriptions	Optional	No	
TargetOperatingSystems	Optional	No	

Standard Class	CIM_ControlledBy
Extended Class	BROCADE_ControlledBy
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_ControlledBy

Name	Reference	Requirement	Is it Supported?	Read/ Write
Dependent	BROCADE_ FCPort	Mandatory	Yes	Read Only
Antecedent	BROCADE_ PortController	Mandatory	Yes	Read Only
NegotiatedSpeed	NA	Optional	No	
NegotiatedDataWidth	NA	Optional	No	
AccessState	NA	Optional	No	
TimeOfDeviceReset	NA	Optional	No	
NumberOfHardResets	NA	Optional	No	
NumberOfSoftResets	NA	Optional	No	
DeviceNumber	NA	Optional	No	
AccessMode	NA	Optional	No	
AccessPriority	NA	Optional	No	

Standard Class	CIM_ElementStatisticalData
Extended Class	BROCADE_ ElementStatisticalData
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_ElementStatisticalData

Name	Reference	Requirement	Is it Supported?	Read/ Write
ManagedElement	BROCADE_FCPort	Mandatory	Yes	Read Only
Stats	BROCADE_ FCPortStatistics	Mandatory	Yes	Read Only

Standard Class	CIM_ElementSoftwareIdentity
Extended Class	BROCADE_AdapterElementSoftwareIdentity
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_AdapterElementSoftwareIdentity

Name	Reference	Requirement	Is it Supported ?	Read/ Write
Dependent	BROCADE_ PortController	Mandatory	Yes	Read Only
Antecedent	BROCADE_ AdapterSoftware Identity	Mandatory	Yes	Read Only
UpgradeCondition	NA	Optional	No	
OtherUpgradeCondition	NA	Optional	No	

Standard Class	CIM_ProductPhysicalComponent
Extended Class	BROCADE_ProductPhysicalComponent
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_ProductPhysicalComponent

Name	Reference	Requirement	Is it Supported?	Read/Write
GroupComponent	BROCADE_ Product	Mandatory	Yes	Read Only
PartComponent	BROCADE_ Physical Package	Mandatory	Yes	Read Only

Standard Class	CIM_Realizes
Extended Class	BROCADE_Realizes
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_Realizes

Name	Reference	Requirement	Is it Supported?	Read/Write
Dependent	BROCADE_ PortController	Mandatory	Yes	Read Only
Antecedent	BROCADE_ PhysicalPackage	Mandatory	Yes	Read Only

Standard Class	CIM_SystemDevice
Extended Class	BROCADE_PortControllerSystemDevice
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_PortControllerSystemDevice

Name	Reference	Requirement	Is it supported?	Read/Write
GroupComponent	BROCADE_ ComputerSystem	Mandatory	Yes	Read Only
PartComponent	BROCADE_ PortController	Mandatory	Yes	Read Only

Optional Classes

Standard Class	CIM_AssociatedAlarm
Extended Class	BROCADE_AssociatedAlarm
Requirement	Optional
API Mapping	

Properties Requirements of BROCADE_AssociatedAlarm

Name	Reference	Requirement	Is it supported?	Read/Write
Antecedent	BROCADE_ AlarmDevice	Mandatory	Yes	
Dependent	BROCADE_ FCPort	Mandatory	Yes	

Standard Class	CIM_MemberOfCollection
Requirement	Optional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it supported?	Read/Write
Collection	BROCADE_ LogicalPortGroup	Mandatory	No	
Member	BROCADE_FCPort	Mandatory	No	

Standard Class	CIM_HostedCollection
Requirement	Optional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it supported?	Read/Write
Antecedent	BROCADE_ ComputerSystem	Mandatory	No	
Dependent	BROCADE_ LogicalPortGroup	Mandatory	No	

Standard Class	CIM_AlarmDevice
Extended Class	BROCADE_AlarmDevice
Requirement	Optional
API Mapping	

Properties Requirements of BROCADE_AlarmDevice

Name	Requirement	Is it Supported?	Read/Write
DeviceID	Mandatory	Yes	
CreationClassName	Mandatory	Yes	

Name	Requirement	Is it Supported?	Read/Write
SystemName	Mandatory	Yes	
SystemCreationClassName	Mandatory	Yes	
VisibleAlarm	Mandatory	Yes	
Urgency	Mandatory	Yes	
Caption	Optional	Yes	
Description	Optional	Yes	
ElementName	Optional	Yes	
InstallDate	Optional	No	
Name	Optional	No	
OperationalStatus	Optional	No	
StatusDescriptions	Optional	No	
Status	Optional	No	
HealthState	Optional	No	
PrimaryStatus	Optional	No	
EnabledState	Optional	Yes	
DetailedStatus	Optional	No	
OperatingStatus	Optional	No	
CommunicationStatus	Optional	No	
OtherEnabledState	Optional	No	
RequestedState	Optional	Yes	
EnabledDefault	Optional	Yes	
TimeOfLastStateChange	Optional	No	
AvailableRequestedStates	Optional	No	
TransitioningToState	Optional	Yes	
RequestStateChange	Optional	No	
PowerManagementSupported	Optional	No	
PowerManagementCapabilities	Optional	No	

Name	Requirement	Is it Supported?	Read/Write
Availability	Optional	No	
StatusInfo	Optional	No	
LastErrorCode	Optional	No	
ErrorDescription	Optional	No	
ErrorCleared	Optional	No	
OtherIdentifyingInfo	Optional	No	
PowerOnHours	Optional	No	
TotalPowerOnHours	Optional	No	
IdentifyingDescriptions	Optional	No	
AdditionalAvailability	Optional	No	
MaxQuiesceTime	Optional	No	
LocationIndicator	Optional	No	
SetPowerState	Optional	No	
Reset	Optional	No	
EnableDevice	Optional	No	
OnlineDevice	Optional	No	
QuiesceDevice	Optional	No	
SaveProperties	Optional	No	
RestoreProperties	Optional	No	
MotionAlarm	Optional	No	
AudibleAlarm	Optional	No	
VisibleAlarm	Optional	No	
Urgency	Optional	No	
AlarmState	Optional	Yes	
AudioIndicatorIsDisabled	Optional	No	
VisualIndicatorIsDisabled	Optional	No	
MotionIndicatorIsDisabled	Optional	No	

Name	Requirement	Is it Supported?	Read/Write
SetAlarmState	Optional	Yes	
SetAlarmIndicator	Optional	No	
SetUrgency	Optional	No	

Standard Class	CIM_LogicalPortGroup
Extended Class	BROCADE_LogicalPortGroup
Requirement	Optional
API Mapping	

Properties Requirements of BROCADE_LogicalPortGroup

Name	Requirement	Is it Supported?	Read/Write
InstanceID	Mandatory	Yes	
Name	Mandatory	Yes	
ElementName	Mandatory	Yes	
NameFormat	Mandatory	Yes	
Caption	Optional	Yes	
Description	Optional	Yes	
OtherNameFormat	Optional	No	

Standard Class	CIM_InstalledSoftwareIdentity
Requirement	Optional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it Supported?	Read/Write
InstalledSoftware	(Software Identity)	Mandatory	No	
System	BROCADE_ Computer System	Mandatory	No	

FC Initiator Ports

Profile	FC Initiator Ports
Version	1.3.0
Organization	SNIA

Supported Classes

Standard Class	CIM_FCPort
Extended Class	BROCADE_FCPort
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_FCPort

Refer to the FCPort class under the FC HBA profile.

Standard Class	CIM_SystemDevice
Extended Class	BROCADE_FCPortSystemDevice
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_FCPortSystemDevice

Name	Reference	Requirement	Is it Supported?	Read/Write
GroupComponent	BROCADE_ Computer System	Mandatory	Yes	Read Only
PartComponent	BROCADE_ FCPort	Mandatory	Yes	Read Only

Standard Class	CIM_DeviceSAPImplementation
Extended Class	BROCADE_DeviceSAPImplementation
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_DeviceSAPImplementation

Name	Reference	Requirement	Is it Supported?	Read/Write
Dependent	BROCADE_ SCSIProtocol Endpoint	Mandatory	Yes	Read Only
Antecedent	BROCADE_FCPort	Mandatory	Yes	Read Only

Standard Class	CIM_HostedAccessPoint
Extended Class	BROCADE_HostedAccessPoint
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_HostedAccessPoint

Name	Reference	Requirement	Is it Supported?	Read/Write
Dependent	BROCADE_ SCSIProtocolEndpoint	Mandatory	Yes	Read Only
Antecedent	BROCADE_ ComputerSystem	Mandatory	Yes	Read Only

Standard Class	CIM_InitiatorTargetLogicalUnitPath
Extended Class	BROCADE_SCSIInitiatorTargetLogicalUnitPath
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_SCSIInitiatorTargetLogicalUnitPath

Name	Requirement	Is it Supported?	Remarks
AdministrativeWeight	Mandatory	No	"Unknown" [0] "Active" [2] "Passive" [3] "Disabled" [4] "Path Error" [5] "Logical Unit Error" [6] "Reserved" [7] "Removed" [8] "Transitioning" [9]
State	Mandatory	Yes	
AdministrativeOverride	Mandatory	Yes	"Overriding" [2] "Overridden" [3] "No override in effect" [4]

Name	Requirement	Is it Supported?	Remarks
LogicalUnit	Mandatory	Yes	Instance of BROCADE_StorageExtent
Initiator	Mandatory	Yes	Instance of BROCADE_SCSIProtocolEndpoint
Target	Mandatory	Yes	Instance of BROCADE_SCSIProtocolEndpoint
OSDeviceName	Optional	No	NA

Standard Class	CIM_HostedCollection
Extended Class	BROCADE_ConnectivityHostedCollection
Requirement	Conditional
API Mapping	

Optional Classes

Standard Class	CIM_SCSIProtocolEndpoint
Requirement	Optional
API Mapping	

Properties Requirements

Name	Requirement	Is it Supported?	Read/Write
Name	Mandatory	Yes	Read Only
CreationClassName	Mandatory	Yes	Read Only
SystemName	Mandatory	Yes	Read Only
SystemCreationClassName	Mandatory	Yes	Read Only
Role	Mandatory	Yes	Read Only
Caption	Optional	No	

Name	Requirement	Is it Supported?	Read/Write
ElementName	Optional	Yes	
InstallDate	Optional	No	
StatusDescriptions	Optional	No	
Status	Optional	No	
HealthState	Optional	No	
OtherEnabledState	Optional	No	
RequestedState	Optional	No	
EnabledDefault	Optional	Yes	
Description	Optional	No	
OperationalStatus	Optional	Yes	
EnabledState	Optional	No	
TimeOfLastStateChange	Optional	No	
NameFormat	Optional	No	
ProtocolType	Optional	No	
ProtocolIFType	Mandatory	Yes	Read Only
OtherTypeDescription	Mandatory	Yes	Read Only
ConnectionType	Mandatory	Yes	Read Only
TargetRelativePortNumber	Optional	No	
OtherConnectionType	Optional	No	

Standard Class	CIM_ConnectivityCollection
Requirement	Optional
API Mapping	

Properties Requirements

Name	Requirement	Is it Supported?	Read /Write
InstanceID	Mandatory	No	
Caption	Optional	No	
Description	Optional	No	
ElementName	Optional	No	
ConnectivityStatus	Optional	No	

Standard Class	CIM_LogicalDevice
Requirement	Optional
API Mapping	

Properties Requirements

Name	Requirement	Is it Supported?	Read/Write
Name	Mandatory	No	
CreationClassName	Mandatory	No	
SystemName	Mandatory	No	
SystemCreationClass Name	Mandatory	No	
DeviceID	Mandatory	No	
OperationalStatus	Mandatory	No	
Caption	Optional	No	
Description	Optional	No	
ElementName	Optional	No	
InstallDate	Optional	No	
StatusDescriptions	Optional	No	
Status	Optional	No	

Name	Requirement	Is it Supported?	Read/Write
HealthState	Optional	No	
PrimaryStatus	Optional	No	
DetailedStatus	Optional	No	
OperatingStatus	Optional	No	
CommunicationStatus	Optional	No	
EnabledState	Optional	No	
OtherEnabledState	Optional	No	
RequestedState	Optional	No	
EnabledDefault	Optional	No	
TimeOfLastStateChange	Optional	No	
AvailableRequestedStates	Optional	No	
TransitionToState	Optional	No	
PowerManagement Supported	Optional	No	
PowerManagement Capabilities	Optional	No	
Availability	Optional	No	
StatusInfo	Optional	No	
LastErrorCode	Optional	No	
ErrorDescription	Optional	No	
ErrorCleared	Optional	No	
OtherIdentifyingInfo	Optional	No	
PowerOnHours	Optional	No	
TotalPowerOnHours	Optional	No	
IdentifyingDescriptions	Optional	No	
AdditionalAvailability	Optional	No	
MaxQuiesceTime	Optional	No	
LocationIndicator	Optional	No	

Standard Class	CIM_SystemDevice
Requirement	Optional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it supported?	Read/Write
GroupComponent	BROCADE_ ComputerSystem	Mandatory	No	
PartComponent	(LogicalDevice)	Mandatory	No	

Server

Profile	Server
Version	1.3.0
Organization	SNIA

Supported Classes

Standard Class	CIM_System
Extended Class	BROCADE_ComputerSystem
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_ComputerSystem

Refer to the CIM_ComputerSystem class table under the FC HBA profile.

Standard Class	CIM_ObjectManager
Extended Class	BROCADE_ObjectManager
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_ObjectManager

Name	Requirement	Is it Supported?	Read/Write
Name	Mandatory	Yes	Read Only
CreationClassName	Mandatory	Yes	Read Only
SystemName	Mandatory	Yes	Read Only
SystemCreationClassName	Mandatory	Yes	Read Only
ElementName	Mandatory	Yes	Read Only
Description	Mandatory	Yes	Read Only
OperationalStatus	Mandatory	Yes	Read Only
Started	Mandatory	Yes	Read Only
Caption	Optional	Yes	
EnabledDefault	Optional	Yes	
EnabledState	Optional	Yes	
GatherStatisticalData	Optional	Yes	
HealthState	Optional	No	
InstallDate	Optional	No	
OtherEnabledState	Optional	No	
PrimaryOwnerContact	Optional	No	
PrimaryOwnerName	Optional	No	
RequestedState	Optional	Yes	
StartMode	Optional	No	

Name	Requirement	Is it Supported?	Read/Write
Status	Optional	No	
StatusDescriptions	Optional	No	
TimeOfLastStateChange	Optional	No	
TransitioningToState	Optional	Yes	

Standard Class	CIM_Namespace
Extended Class	BROCADE_Namespace
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_Namespace

Name	Requirement	Is it Supported?	Read/ Write
Name	Mandatory	Yes	Read Only
CreationClassName	Mandatory	Yes	Read Only
SystemName	Mandatory	Yes	Read Only
SystemCreationClassName	Mandatory	Yes	Read Only
ObjectManagerName	Mandatory	Yes	Read Only
ObjectManagerCreationClassName	Mandatory	Yes	Read Only
ClassType	Mandatory	Yes	Writable
DescriptionOfClassType	Conditional	No	Writable
ClassInfo	Optional	Yes	
DescriptionOfClassInfo	Optional	No	
Caption	Optional	No	
Description	Optional	No	

Name	Requirement	Is it Supported?	Read/ Write
ElementName	Optional	No	
ClassTypeVersion	Optional	Yes	

Standard Class	CIM_CIMXMLCommunicationMechanism
Extended Class	BROCADE_CIMXMLCommunicationMechanism
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_CIMXMLCommunicationMechanism

Name	Requirement	Is it Supported?	Read/Write
Name	Mandatory	Yes	Read Only
CreationClassName	Mandatory	Yes	Read Only
SystemName	Mandatory	Yes	Read Only
SystemCreationClassName	Mandatory	Yes	Read Only
ElementName	Mandatory	Yes	Read Only
CommunicationMechanism	Mandatory	Yes	Read Only
Version	Mandatory	Yes	Read Only
CIMValidated	Mandatory	Yes	Read Only
FunctionalProfilesSupported	Mandatory	Yes	Read Only
MultipleOperationsSupported	Mandatory	Yes	Read Only
AuthenticationMechanisms Supported	Mandatory	Yes	Read Only
OtherCommunication MechanismDescription	Conditional	No	Read Only
OperationalStatus	Mandatory	Yes	Read Only
AdvertiseTypeDescriptions	Optional	No	

Name	Requirement	Is it Supported?	Read/Write
AdvertiseTypes	Optional	No	
AuthenticationMechanism Descriptions	Optional	No	
Caption	Optional	No	
CIMXMLProtocolVersion	Optional	No	
Description	Optional	No	
EnabledDefault	Optional	Yes	
EnabledState	Optional	Yes	
FunctionalProfileDescriptions	Optional	No	
HealthState	Optional	No	
InstallDate	Optional	No	
OtherEnabledState	Optional	No	
RequestedState	Optional	Yes	
Status	Optional	No	
StatusDescriptions	Optional	No	
TimeOfLastStateChange	Optional	No	
TransitioningToState	Optional	Yes	

Standard Class	CIM_HostedService
Extended Class	BROCADE_ObjectManagerHostedService
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_ObjectManagerHostedService

Name	Reference	Requirement	Is it Supported?	Read/Write
Antecedent	BROCADE_ ComputerSystem	Mandatory	Yes	Read Only
Dependent	BROCADE_ ObjectManager	Mandatory	Yes	Read Only

Standard Class	CIM_CommMechanismForManager
Extended Class	BROCADE_CommMechanismForManager
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_CommMechanismForManager

Name	Reference	Requirement	Is it Supported?	Read/Write
Antecedent	BROCADE_ ObjectManager	Mandatory	Yes	Read Only
Dependent	BROCADE_CIMXML Communication Mechanism	Mandatory	Yes	Read Only

Standard Class	CIM_NamespaceInManager
Extended Class	BROCADE_NamespaceInManager
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_NamespaceInManager

Name	Reference	Requirement	Is it Supported?	Read/Write
Antecedent	BROCADE_ ObjectManager	Mandatory	Yes	Read Only
Dependent	BROCADE_ Namespace	Mandatory	Yes	Read Only

Standard Class	CIM_HostedAccessPoint
Extended Class	BROCADE_CommMechHostedAccessPoint
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_CommMechHostedAccessPoint

Name	Reference	Requirement	Is it Supported?	Read/Write
Antecedent	BROCADE_ ComputerSystem	Mandatory	Yes	Read Only
Dependent	BROCADE_CIMXML Communication Mechanism	Mandatory	Yes	Read Only

Profile Registration

Profile	Profile Registration
Version	1.3.0
Organization	SNIA

Supported Classes

Standard Class	CIM_RegisteredProfile
Extended Class	BROCADE_RegisteredProfile
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_RegisteredProfile

Name	Requirement	Is it Supported?	Read/Write
InstanceID	Mandatory	Yes	Read Only
RegisteredOrganization	Mandatory	Yes	Read Only
OtherRegisteredOrganization	Conditional	No	Read Only
RegisteredName	Mandatory	Yes	Read Only
RegisteredVersion	Mandatory	Yes	Read Only
AdvertiseTypes	Mandatory	Yes	Read Only
AdvertiseTypeDescriptions	Conditional	No	
Caption	Optional	Yes	
Description	Optional	Yes	
ElementName	Optional	Yes	

Standard Class	CIM_RegisteredSubProfile
Extended Class	BROCADE_RegisteredSubProfile
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_RegisteredSubProfile

Name	Requirement	Is it Supported?	Read/Write
InstanceID	Mandatory	Yes	Read Only
RegisteredOrganization	Mandatory	Yes	Read Only
OtherRegisteredOrganization	Conditional	No	Read Only
RegisteredName	Mandatory	Yes	Read Only
RegisteredVersion	Mandatory	Yes	Read Only
AdvertiseTypes	Mandatory	Yes	Read Only
AdvertiseTypeDescriptions	Conditional	No	
Caption	Optional	Yes	
Description	Optional	Yes	
ElementName	Optional	Yes	

Standard Class	CIM_SoftwareIdentity
Extended Class	BROCADE_ProfileSoftwareIdentity
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_ProfileSoftwareIdentity

Name	Requirement	Is it Supported?	Read/Write
InstanceID	Mandatory	Yes	Read Only
VersionString	Mandatory	Yes	Read Only
Manufacturer	Mandatory	Yes	Read Only
Classifications	Mandatory	Yes	Read Only
Name	Mandatory	Yes	Read Only
BuildNumber	Optional	No	

Name	Requirement	Is it Supported?	Read/Write
Caption	Optional	Yes	
ClassificationDescriptions	Optional	No	
Description	Optional	No	
ElementName	Optional	Yes	
HealthState	Optional	No	
IdentityInfoType	Optional	Yes	
IdentityInfoValue	Optional	Yes	
InstallDate	Optional	No	
IsEntity	Optional	Yes	
IsLargeBuildNumber	Optional	Yes	
Languages	Optional	No	
MajorVersion	Optional	Yes	
MinorVersion	Optional	Yes	
OperationalStatus	Optional	No	
ReleaseDate	Optional	No	
RevisionNumber	Optional	Yes	
SerialNumber	Optional	No	
Status	Optional	No	
StatusDescriptions	Optional	No	
TargetOperatingSystems	Optional	No	

Standard Class	CIM_ElementConformsToProfile
Extended Class	BROCADE_ElementConformsToProfile
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_ElementConformsToProfile

Name	Reference	Requirement	Is it Supported?	Read/Write
ManagedElement	BROCADE_ Computer System	Mandatory	Yes	Read Only
ConformantStandard	BROCADE_ Registered Profile	Mandatory	Yes	Read Only

Standard Class	CIM_ProfileElementSoftwareIdentity
Extended Class	BROCADE_ProfileElementSoftwareIdentity
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_ProfileElementSoftwareIdentity

Name	Reference	Requirement	Is it Supported?	Read/ Write
Dependent	BROCADE_ RegisteredProfile	Mandatory	Yes	Read Only
Antecedent	BROCADE_ ProfileSoftware Identity	Mandatory	Yes	Read Only
UpgradeCondition	NA	Optional	No	Read Only
OtherUpgrade Condition	NA	Optional	No	Read Only

Optional Classes

Standard Class	CIM_ProductSoftwareComponent
Requirement	Optional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it Supported?	Read/ Write
GroupComponent	(Product)	Mandatory	Yes	
PartComponent	(Software)	Mandatory	Yes	
UpgradeCondition	NA	Optional	No	
OtherUpgradeCondition	NA	Optional	No	

Standard Class	CIM_Product
Requirement	Optional
API Mapping	

Properties Requirements

Name	Requirement	Is it Supported ?	Read/Write
Name	Mandatory	No	
IdentifyingNumber	Mandatory	No	
Vendor	Mandatory	No	
Version	Mandatory	No	
Caption	Optional	No	
ElementName	Optional	Yes	
Description	Optional	Yes	

Name	Requirement	Is it Supported ?	Read/Write
SKUNumber	Optional	No	
WarrantyStartDate	Optional	No	
WarrantyDuration	Optional	No	
Family	Optional	No	

Standard Class	CIM_ReferencedProfile
Requirement	Optional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it Supported?	Read/ Write
Antecedent	BROCADE_Registered Profile	Mandatory	No	
Dependent	BROCADE_Registered Profile	Mandatory	No	

Standard Class	CIM_SubProfileRequiresProfile
Requirement	Optional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it Supported?	Read/ Write
Antecedent	BROCADE_Registered Profile	Optional	Yes	
Dependent	BROCADE_Registered SubProfile	Optional	Yes	

Host Discovered Resources

Profile	Host Discovered Resources
Version	1.3.0
Organization	SNIA

Supported Classes

Standard Class	CIM_ComputerSystem
Extended Class	BROCADE_ComputerSystem
Requirement	Mandatory
API Mapping	Custom Method

Properties Requirements of BROCADE_ComputerSystem

Refer to the FC HBA profile section for the properties of the BROCADE_ComputerSystem.

Standard Class	CIM_SystemDevice
Extended Class	BROCADE_StorageResourcesSystemDevice
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_StorageResourcesSystemDevice

Name	Reference	Requirement	Is it Supported?	Read/ Write
GroupComponent	BROCADE_ ComputerSystem	Mandatory	Yes	Read Only
PartComponent	CIM_LogicalDevice	Mandatory	Yes	Read Only

Standard Class	CIM_HostedAccessPoint
Extended Class	BROCADE_HostedAccessPoint
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_HostedAccessPoint

Name	Reference	Reference	Is it supported?	Read/ Write
Dependant	BROCADE_ SCSIProtocolEndpoint	Mandatory	Yes	Read Only
Antecedant	BROCADE_ ComputerSystem	Mandatory	Yes	Read Only

Standard Class	CIM_LogicalDisk
Extended Class	BROCADE_LogicalDisk
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_LogicalDisk

Name	Requirement	Is it Supported?	Read/ Write
SystemCreationClassName	Mandatory	Yes	Read Only
SystemName	Mandatory	Yes	Read Only
CreationClassName	Mandatory	Yes	Read Only
DeviceID	Mandatory	Yes	Read Only
ElementName	Mandatory	Yes	Read Only
Name	Mandatory	Yes	Read Only
NameFormat	Mandatory	Yes	Read Only
NameNamespace	Mandatory	Yes	Read Only
OtherIdentifyingInfo	Mandatory	Yes	Read Only
IdentifyingDescription	Mandatory	Yes	Read Only
OperationalStatus	Mandatory	Yes	Read Only
Caption	Optional	No	
Description	Optional	No	
InstallDate	Optional	No	
StatusDescriptions	Optional	No	
Status	Optional	No	
HealthState	Optional	No	
PrimaryStatus	Optional	No	
DetailedStatus	Optional	No	
OperatingStatus	Optional	No	
CommunicationStatus	Optional	No	
EnabledState	Optional	No	
OtherEnabledState	Optional	No	
RequestedState	Optional	No	
EnabledDefault	Optional	No	
TimeOfLastStateChange	Optional	No	

Name	Requirement	Is it Supported?	Read/ Write
AvailableRequestedStates	Optional	No	
TransitioningToState	Optional	No	
PowerManagementSupported	Optional	No	
PowerManagementCapabilities	Optional	No	
Availability	Optional	No	
StatusInfo	Optional	No	
LastErrorCode	Optional	No	
ErrorDescription	Optional	No	
ErrorCleared	Optional	No	
PowerOnHours	Optional	No	
TotalPowerOnHours	Optional	No	
AdditionalAvailability	Optional	No	
MaxQuiesceTime	Optional	No	
LocationIndicator	Optional	No	
DataOrganization	Optional	No	
Purpose	Optional	No	
Access	Optional	No	
ErrorMethodology	Optional	No	
BlockSize	Optional	No	
NumberOfBlocks	Optional	No	
ConsumableBlocks	Optional	No	
IsBasedOnUnderlyingRedundancy	Optional	No	
SequentialAccess	Optional	No	
ExtentStatus	Optional	No	
NoSinglePointOfFailure	Optional	No	
DataRedundancy	Optional	No	
PackageRedundancy	Optional	No	

Name	Requirement	Is it Supported?	Read/ Write
DeltaReservation	Optional	No	
Primordial	Optional	No	
OtherNameNamespace	Optional	No	
OtherNameFormat	Optional	No	
Usage	Optional	No	
OtherUsageDescription	Optional	No	
ClientSettableUsage	Optional	No	

Standard Class	CIM_StorageExtent
Extended Class	BROCADE_StorageExtent
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_StorageExtent

Name	Requirement	Is it Supported?	Read/ Write
SystemCreationClassName	Mandatory	Yes	Read Only
SystemName	Mandatory	Yes	Read Only
CreationClassName	Mandatory	Yes	Read Only
DeviceID	Mandatory	Yes	Read Only
ElementName	Mandatory	Yes	Read Only
Name	Mandatory	Yes	Read Only
NameFormat	Mandatory	Yes	Read Only
NameNamespace	Mandatory	Yes	Read Only
OtherIdentifyingInfo	Mandatory	Yes	Read Only
IdentifyingDescription	Mandatory	Yes	Read Only

Name	Requirement	Is it Supported?	Read/ Write
OperationalStatus	Mandatory	Yes	Read Only
Caption	Optional	No	
Description	Optional	No	
InstallDate	Optional	No	
StatusDescriptions	Optional	No	
Status	Optional	No	
HealthState	Optional	No	
PrimaryStatus	Optional	No	
DetailedStatus	Optional	No	
OperatingStatus	Optional	No	
CommunicationStatus	Optional	No	
EnabledState	Optional	No	
OtherEnabledState	Optional	No	
RequestedState	Optional	No	
EnabledDefault	Optional	No	
TimeOfLastStateChange	Optional	No	
AvailableRequestedStates	Optional	No	
TransitioningToState	Optional	No	
PowerManagementSupported	Optional	No	
PowerManagementCapabilities	Optional	No	
Availability	Optional	No	
StatusInfo	Optional	No	
LastErrorCode	Optional	No	
ErrorDescription	Optional	No	
ErrorCleared	Optional	No	
OtherNameNamespace	Optional	No	
PowerOnHours	Optional	No	

Name	Requirement	Is it Supported?	Read/ Write
TotalPowerOnHours	Optional	No	
AdditionalAvailability	Optional	No	
MaxQuiesceTime	Optional	No	
LocationIndicator	Optional	No	
DataOrganization	Optional	No	
Purpose	Optional	No	
Access	Optional	No	
ErrorMethodology	Optional	No	
BlockSize	Optional	No	
NumberOfBlocks	Optional	No	
ConsumableBlocks	Optional	No	
IsBasedOnUnderlyingRedundancy	Optional	No	
SequentialAccess	Optional	No	
ExtentStatus	Optional	No	
NoSinglePointOfFailure	Optional	No	
DataRedundancy	Optional	No	
PackageRedundancy	Optional	No	
DeltaReservation	Optional	No	
Primordial	Optional	No	
OtherNameFormat	Optional	No	
Usage	Optional	No	
OtherUsageDescription	Optional	No	
ClientSettableUsage	Optional	No	

Standard Class	CIM_TapeDrive
Extended Class	BROCADE_TapeDrive
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_TapeDrive

Name	Requirement	Is it Supported?	Read/Write
SystemCreationClassName	Mandatory	Yes	Read Only
SystemName	Mandatory	Yes	Read Only
CreationClassName	Mandatory	Yes	Read Only
DeviceID	Mandatory	Yes	Read Only
ElementName	Mandatory	Yes	Read Only
Name	Mandatory	Yes	Read Only
OtherIdentifyingInfo	Mandatory	Yes	Read Only
IdentifyingDescription	Mandatory	Yes	Read Only
OperationalStatus	Mandatory	Yes	Read Only
Caption	Optional	No	Read Only
Description	Optional	No	Read Only
InstallDate	Optional	No	
StatusDescriptions	Optional	No	
Status	Optional	No	
HealthState	Optional	No	
PrimaryStatus	Optional	No	
DetailedStatus	Optional	No	
OperatingStatus	Optional	No	
CommunicationStatus	Optional	No	
EnabledState	Optional	No	
OtherEnabledState	Optional	No	

Name	Requirement	Is it Supported?	Read/Write
RequestedState	Optional	No	
EnabledDefault	Optional	No	
TimeOfLastStateChange	Optional	No	
AvailableRequestedStates	Optional	No	
TransitioningToState	Optional	No	
PowerManagementSupported	Optional	No	
PowerManagementCapabilities	Optional	No	
Availability	Optional	No	
StatusInfo	Optional	No	
LastErrorCode	Optional	No	
ErrorDescription	Optional	No	
ErrorCleared	Optional	No	
PowerOnHours	Optional	No	
TotalPowerOnHours	Optional	No	
AdditionalAvailability	Optional	No	
MaxQuiesceTime	Optional	No	
LocationIndicator	Optional	No	
Capabilities	Optional	No	
CapabilityDescriptions	Optional	No	
ErrorMethodology	Optional	No	
CompressionMethod	Optional	No	
NumberOfMediaSupported	Optional	No	
MaxMediaSize	Optional	No	
DefaultBlockSize	Optional	No	
MaxBlockSize	Optional	No	
MinBlockSize	Optional	No	
NeedsCleaning	Optional	No	

Name	Requirement	Is it Supported?	Read/Write
MediaIsLocked	Optional	No	
Security	Optional	No	
LastCleaned	Optional	No	
MaxAccessTime	Optional	No	
UncompressedDataRate	Optional	No	
LoadTime	Optional	No	
UnloadTime	Optional	No	
MountCount	Optional	No	
TimeOfLastMount	Optional	No	
TotalMountTime	Optional	No	
UnitsDescription	Optional	No	
MaxUnitsBeforeCleaning	Optional	No	
UnitsUsed	Optional	No	
LockMedia	Optional	No	
EOTWarningZoneSize	Optional	No	
MaxPartitionCount	Optional	No	
Padding	Optional	No	
MaxRewindTime	Optional	No	

Optional Classes

Standard Class	CIM_SCSIArbitraryLogicalUnit
Requirement	Optional
API Mapping	

Properties Requirements

Name	Requirement	Is it Supported?	Read/Write
SystemCreationClassName	Mandatory	No	
SystemName	Mandatory	No	
CreationClassName	Mandatory	No	
DeviceID	Mandatory	No	
ElementName	Mandatory	No	
Name	Mandatory	No	
OtherIdentifyingInfo	Mandatory	No	
IdentifyingDescription	Mandatory	No	
OperationalStatus	Mandatory	No	

Standard Class	CIM_SCSIProtocolEndpoint
Requirement	Optional
API Mapping	

Properties Requirements

Name	Requirement	Is it Supported?	Read/Write
SystemCreationClassName	Mandatory	No	
SystemName	Mandatory	No	
CreationClassName	Mandatory	No	
Name	Mandatory	No	
ProtocolIFType	Mandatory	No	
ConnectionType	Mandatory	No	
Role	Mandatory	No	
Caption	Optional	No	

Name	Requirement	Is it Supported?	Read/Write
Description	Optional	No	
ElementName	Optional	Yes	
InstallDate	Optional	No	
OperationalStatus	Optional	Yes	
StatusDescriptions	Optional	No	
Status	Optional	No	
HealthState	Optional	No	
EnableState	Optional	No	
OtherEnabledState	Optional	No	
RequestedState	Optional	No	
EnableDefault	Optional	Yes	
TimeOfLastStateChange	Optional	No	
NameFormat	Optional	No	
ProtocolType	Optional	No	
OtherTypeDescription	Optional	No	
TargetRelativePortNumber	Optional	No	
OtherConnectionType	Optional	No	

Standard Class	CIM_ATAProtocolEndpoint
Requirement	Optional
API Mapping	

Properties Requirements

Name	Requirement	Is it Supported?	Read/ Write
SystemCreationClassName	Mandatory	No	
SystemName	Mandatory	No	
CreationClassName	Mandatory	No	
Name	Mandatory	No	
ProtocolIFType	Mandatory	No	
ConnectionType	Mandatory	No	
Role	Mandatory	No	

Standard Class	CIM_SCSIInitiatorTargetLogicalUnitPath
Requirement	Optional
API Mapping	

Properties Requirements

Name	Requirement	Is it Supported?	Read/Write
OSDeviceName	Optional	No	
AdministrativeWeight	Conditional	No	
State	Conditional	No	
AdministrativeOverride	Conditional	No	
LogicalUnit	Mandatory	No	
Initiator	Mandatory	No	
Target	Mandatory	No	

Software Update

Profile	Software Update
Version	1.0.0a
Organization	DMTF

Standard Class	CIM_SoftwareInstallationService
Extended Class	BROCADE_HBASoftwareInstallationService
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_HBASoftwareInstallationService

Name	Requirement	Is it Supported?
AvailableRequestedStates	Optional	No
Caption	Optional	No
CommunicationStatus	Optional	No
CreationClassName	Mandatory	Yes
Description	Optional	No
DetailedStatus	Optional	No
ElementName	Optional	No
EnabledDefault	Optional	Yes
EnabledState	Optional	Yes
Generation	Optional	No
HealthState	Optional	No
InstallDate	Optional	No
InstanceID	Optional	No
Name	Mandatory	Yes
OperatingStatus	Optional	No

Name	Requirement	Is it Supported?
OperationalStatus	Optional	No
OtherEnabledState	Optional	No
PrimaryOwnerContact	Optional	No
PrimaryOwnerName	Optional	No
PrimaryStatus	Optional	No
RequestedState	Optional	Yes
Started	Optional	No
StartMode	Optional	No
Status	Optional	No
StatusDescriptions	Optional	No
SystemCreationClassName	Mandatory	Yes
SystemName	Mandatory	Yes
TimeOfLastStateChange	Optional	No
TransitioningToState	Optional	Yes

Standard Class	CIM_SoftwareIdentity
Extended Class	BROCADE_AdapterSoftwareIdentity
Requirement	Optional
API Mapping	

Properties Requirements of BROCADE_AdapterSoftwareIdentity

Refer to the BROCADE_AdapterSoftwareIdentity class defined under the FC HBA profile.

Standard Class	CIM_SoftwareInstallationServiceCapabilities
Extended Class	BROCADE_HBASoftwareInstallationServiceCapabilities
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_HBASoftwareInstallationServiceCapabilities

Name	Requirement	Is it Supported?
CanAddToCollection	Optional	No
OtherSupportedExtendedResourceType Descriptions	Optional	No
SupportedAsynchronousActions	Optional	No
SupportedExtendedResourceTypes	Optional	No
SupportedExtendedResourceTypesBuildNumbers	Optional	No
SupportedExtendedResourceTypesMajorVersions	Optional	No
SupportedExtendedResourceTypesMinorVersions	Optional	No
SupportedExtendedResourceTypesRevision Numbers	Optional	No
SupportedInstallOptions	Mandatory	Yes
SupportedSynchronousActions	Optional	Yes
SupportedTargettypes	Optional	No
SupportedURISchemes	Conditional	Yes
Caption	Optional	No
Description	Optional	No
ElementName	Optional	No
Generation	Optional	No
InstanceID	Mandatory	Yes

Standard Class	CIM_HostedService
Extended Class	BROCADE_HBASoftwareInstallationServiceHostedService
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_HBASoftwareInstallationServiceHostedService

Name	Reference	Requirement	Is it Supported?
Antecedent	BROCADE_ComputerSystem	Mandatory	Yes
Dependent	BROCADE_ SoftwareInstallationService	Mandatory	Yes

Standard Class	CIM_ElementCapabilities
Extended Class	BROCADE_HBASoftwareInstallationServiceElementCapabilities
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_HBASoftwareInstallationServiceElementCapabilities

Name	Reference	Requirement	Is it Supported?
Capabilities	BROCADE_Software InstallationServiceCapabilities	Mandatory	Yes
ManagedElement	BROCADE_Software InstallationService	Mandatory	Yes

Standard Class	CIM_ServiceAffectsElement
Extended Class	
Requirement	Optional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it Supported?
ElementEffects	N/A	Optional	No
OtherElementEffectsDescriptions	N/A	Optional	No
AffectedElement		Mandatory	No
AffectingElement		Mandatory	No

Access Point

Profile	Access Point
Version	1.3.0
Organization	SNIA

Standard Class	CIM_HostedAccessPoint
Extended Class	BROCADE_RemoteServiceHostedAccessPoint
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_RemoteServiceHostedAccessPoint

Name	Reference	Requirement	Is it Supported?
Dependent	BROCADE_RemoteServiceAccess Point	Mandatory	Yes
Antecedent	BROCADE_ComputerSystem	Mandatory	Yes

Standard Class	CIM_RemoteServiceAccessPoint
Extended Class	BROCADE_RemoteServiceAccessPoint
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_RemoteServiceAccessPoint

Name	Requirement	Is it Supported?
AccessInfo	Mandatory	Yes
InfoFormat	Mandatory	Yes
OtherInfoFormatDescription	Optional	No
Name	Optional	No
Caption	Optional	No
CreationClassName	Mandatory	Yes
Description	Optional	
ElementName	Mandatory	Yes
EnabledDefault	Optional	No
EnabledState	Optional	No
HealthState	Optional	No
InstallDate	Optional	No
Name	Mandatory	Yes
OtherEnabledState	Optional	No

Name	Requirement	Is it Supported?
RequestedState	Optional	No
Status	Optional	No
SystemCreationClassName	Mandatory	Yes
SystemName	Mandatory	Yes
TimeOfLastStateChange	Optional	No
OperationalStatus	Optional	No
StatusDescriptions	Optional	No

Standard Class	CIM_SAPAvailableForElement
Extended Class	
Requirement	Optional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it Supported?
AvailableSAP		Mandatory	No
ManagedElement		Mandatory	No

Software Inventory

Profile	Software Inventory
Version	1.0.0
Organization	DMTF

Standard Class	CIM_SoftwareIdentity
Extended Class	BROCADE_AdapterSoftwareIdentity
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_AdapterSoftwareIdentity

Name	Requirement	Is it Supported?
InstanceID	Mandatory	Yes
VersionString	Optional	Yes
Manufacturer	Optional	Yes
Classifications	Optional	Yes
Caption	Optional	Yes
Description	Optional	Yes
ElementName	Optional	Yes
InstallDate	Optional	No
Name	Optional	Yes
OperationalStatus	Optional	No
StatusDescriptions	Optional	No
Status	Optional	No
HealthState	Optional	No
MajorVersion	Conditional	No
MinorVersion	Conditional	No

Name	Requirement	Is it Supported?
RevisionNumber	Conditional	No
BuildNumber	Conditional	No
TargetOperatingSystems	Optional	No
Languages	Optional	No
ClassificationDescriptions	Optional	No
SerialNumber	Optional	No
ReleaseDate	Optional	No
IsLargeBuildNumber	Optional	Yes
IsEntity	Optional	Yes
IdentityInfoValue	Optional	Yes
IdentityInfoType	Optional	Yes

Properties Requirements

Name	Requirement	Is it Supported?
InstanceID	Mandatory	No
Name	Optional	No
Caption	Optional	No
Description	Optional	No
ElementName	Mandatory	No

Standard Class	CIM_InstalledSoftwareIdentity
Extended Class	BROCADE_InstalledSoftwareIdentity
Requirement	Conditional
API Mapping	

Properties Requirements of BROCADE_InstalledSoftwareIdentity

Name	Reference	Requirement	Is it Supported?
InstalledSoftware	BROCADE_AdapterSoftware Identity	Mandatory	Yes
System	BROCADE_ComputerSystem	Mandatory	Yes

NOTE

This class is supported as part of the FC HBA profile though it is mentioned as optional in this profile.

Standard Class	CIM_ElementSoftwareIdentity
Extended Class	BROCADE_AdapterElementSoftwareIdentity
Requirement	Optional
API Mapping	

Properties Requirements of BROCADE_AdapterElementSoftwareIdentity

Name	Reference	Requirement	Is it Supported?
Antecedent	BROCADE_Adapter SoftwareIdentity	Mandatory	No
Dependent	BROCADE_PortController	Mandatory	No
OtherUpgradeCondition	N/A	Optional	No
UpgradeCondition	N/A	Optional	No
ElementSoftwareStatus	N/A	Mandatory	No

NOTE

This class is supported as part of the FC HBA profile though it is mentioned as optional in this profile.

Standard Class	CIM_HostedCollection
Extended Class	
Requirement	Conditional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it Supported?
Dependent		Mandatory	No
Antecedent		Mandatory	No

Standard Class	CIM_MemberOfCollection
Extended Class	
Requirement	Conditional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it Supported?
Collection		Mandatory	No
Member		Mandatory	No

Standard Class	CIM_SAPAvailableForElement
Extended Class	
Requirement	Conditional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it Supported?
AvailableSAP		Mandatory	No
ManagedElement		Mandatory	No

Standard Class	CIM_HostedAccessPoint
Extended Class	
Requirement	Optional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it Supported?
Antecedent		Mandatory	No
Dependent		Mandatory	No

Standard Class	CIM_OrderedComponent
Extended Class	
Requirement	Optional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it Supported?
GroupComponent		Mandatory	No
PartComponent		Mandatory	No
AssignedSequence	N/A	Mandatory	No

Standard Class	CIM_OrderedDependency
Extended Class	
Requirement	Optional
API Mapping	

Properties Requirements

Name	Reference	Requirement	Is it Supported?
Antecedent		Mandatory	No
Dependent		Mandatory	No
AssignedSequence	N/A	Mandatory	No

Ethernet Port

Profile	Ethernet Port
Version	1.0.0
Organization	DMTF

Standard Class	CIM_EthernetPort
Extended Class	BROCADE_EthernetPort
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_EthernetPort

Name	Requirement	Is it Supported?
ActiveMaximumTransmissionUnit	Optional	No
AdditionalAvailability	Optional	No
AutoSense	Optional	No

Name	Requirement	Is it Supported?
Availability	Optional	No
AvailableRequestedStates	Optional	No
Capabilities	Mandatory	Yes
CapabilityDescriptions	Optional	No
Caption	Optional	No
CommunicationStatus	Optional	No
CreationClassName	Optional	No
Description	Optional	No
DetailedStatus	Optional	No
DeviceID	Optional	Yes
ElementName	Optional	Yes
EnabledCapabilities	Mandatory	Yes
EnabledDefault	Optional	Yes
EnabledState	Optional	Yes
ErrorCleared	Optional	No
ErrorDescription	Optional	No
FullDuplex	Optional	No
Generation	Optional	No
HealthState	Optional	No
IdentifyingDescriptions	Optional	No
InstallDate	Optional	No
InstanceID	Optional	No
LastErrorCode	Optional	No
LinkTechnology	Mandatory	Yes
LocationIndicator	Optional	No
MaxDataSize	Optional	No
MaxQuiesceTime	Optional	No
MaxSpeed	Optional	No

Name	Requirement	Is it Supported?
Name	Optional	No
NetworkAddresses	Mandatory	Yes
OperatingStatus	Optional	No
OperationalStatus	Optional	No
OtherEnabledCapabilities	Optional	No
OtherEnabledState	Optional	No
OtheridentifyingInfo	Optional	No
OtherLinkTechnology	Optional	No
OtherNetworkPortType	Optional	No
OtherPortType	Optional	No
PermanentAddress	Mandatory	Yes
PortNumber	Optional	Yes
PortType	Mandatory	Yes
PowerManagementCapabilities	Optional	No
PowerManagementSupported	Optional	No
PowerOnHours	Optional	No
PrimaryStatus	Optional	No
RequestedSpeed	Optional	No
RequestedState	Optional	Yes
Speed	Optional	No
Status	Optional	No
StatusDescriptions	Optional	No
StatusInfo	Optional	No
SupportedMaximumTransmissionUnit	Optional	No
SystemCreationClassName	Optional	Yes
SystemName	Optional	Yes
TimeOfLastStateChange	Optional	No
TotalPowerOnHours	Optional	No

Name	Requirement	Is it Supported?
TransitioningToState	Optional	Yes
UsageRestriction	Optional	No

Standard Class	CIM_SystemDevice
Extended Class	BROCADE_EthernetPortSystemDevice
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_EthernetPortSystemDevice

Name	Reference	Requirement	Is it Supported?
GroupComponent	BROCADE_ComputerSystem	Mandatory	Yes
PartComponent	BROCADE_EthernetPort	Mandatory	Yes

Standard Class	CIM_ControlledBy
Extended Class	BROCADE_EthernetPortControlledBy
Requirement	Conditional
API Mapping	

Properties Requirements of BROCADE_EthernetPortControlledBy

Name	Reference	Requirement	Is it Supported?
Dependent	BROCADE_EthernetPort	Mandatory	Yes
Antecedent	BROCADE_PortController	Mandatory	Yes

CDM

Profile	CDM
Version	2.0.0
Organization	DMTF

Standard Class	CIM_DiagnosticTest
Extended Class	BROCADE_DiagnosticTest
Requirement	Mandatory (Only used as super class in extending classes for specific tests. No CIM operations are supported in this class).
API Mapping	

Properties Requirements of BROCADE_DiagnosticTest

Name	Requirement	Is it Supported?
AvailableRequestedStates	Optional	No
Caption	Optional	No
Characteristics	Mandatory	Yes
CommunicationStatus	Optional	No
CreationClassName	Mandatory	Yes
Description	Optional	No
DetailedStatus	Optional	No
ElementName	Mandatory	Yes
EnabledDefault	Optional	Yes
EnabledState	Optional	Yes
Generation	Optional	No
HealthState	Optional	No
InstallDate	Optional	No
InstanceID	Optional	No
IsInUse	Optional	No

Name	Requirement	Is it Supported?
Name	Mandatory	Yes
OperatingStatus	Optional	No
OperationalStatus	Optional	No
OtherCharacteristicDescription	Optional	No
OtherCharacteristicsDescriptions	Conditional	No
OtherEnabledState	Optional	No
OtherTestTypesDescriptions	Optional	No
PrimaryOwnerContact	Optional	No
PrimaryOwnerName	Optional	No
PrimaryStatus	Optional	No
RequestedState	Optional	Yes
ResourcesUsed	Optional	No
Started	Optional	No
StartMode	Optional	No
Status	Optional	No
StatusDescriptions	Optional	No
SystemCreationClassName	Mandatory	Yes
SystemName	Mandatory	Yes
TestTypes	Optional	No
TimeOfLastStateChange	Optional	No
TransitioningToState	Optional	Yes

Parent Class	BROCADE_DiagnosticTest
Extended Class	BROCADE_DiagnosticMemoryTest
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_DiagnosticMemoryTest

Refer to the BROCADE_DiagnosticTest properties.

Parent Class	BROCADE_DiagnosticTest
Extended Class	BROCADE_PCILoopbackDiagnostic Test
Requirement	Mandatory

Properties Requirements of BROCADE_PCILoopbackDiagnosticTest

Refer to the BROCADE_DiagnosticTest properties.

Parent Class	BROCADE_DiagnosticTest
Extended Class	BROCADE_EthLoopbackDiagnosticTest
Requirement	Mandatory

Properties Requirements of BROCADE_EthLoopbackDiagnosticTest

Refer to the BROCADE_DiagnosticTest properties.

Standard Class	CIM_ConcreteJob
Extended Class	BROCADE_ConcreteJob
Requirement	Mandatory

Properties Requirements of BROCADE_ConcreteJob

Name	Requirement	Is it Supported?
InstanceID	Mandatory	Yes
Name	Mandatory	Yes
JobState	Mandatory	Yes
TimeBeforeRemoval	Mandatory	Yes
StartTime	Mandatory	Yes
ElapsedTime	Mandatory	Yes
PercentComplete	Mandatory	Yes

Name	Requirement	Is it Supported?
DeleteOnCompletion	Optional	
ErrorDescription	Conditional	
TimeOfLastStateChange	Optional	
Description	Optional	
ElementName	Optional	
ErrorCode	Optional	
HealthState	Optional	
InstallDate	Optional	
JobRunTimes	Optional	
LocalOrUtcTime	Optional	
Notify	Optional	
OtherRecoveryAction	Optional	
Owner	Optional	
Priority	Optional	
RecoveryAction	Optional	
RunDay	Optional	
RunDayOfWeek	Optional	
RunMonth	Optional	
RunStartInterval	Optional	
ScheduledStartTime	Optional	
Status	Optional	
TimeSubmitted	Optional	
UntilTime	Optional	
OperationalStatus	Optional	
StatusDescriptions	Optional	

Standard Class	CIM_SoftwareIdentity
Extended Class	BROCADE_DiagnosticSoftwareIdentity
Requirement	Mandatory

Properties Requirements of BROCADE_DiagnosticSoftwareIdentity

Name	Requirement	Is it Supported?
BuildNumber	Optional	Yes
Caption	Optional	Yes
ClassificationDescriptions	Optional	No
Classifications	Optional	Yes
Description	Optional	Yes
ElementName	Optional	Yes
HealthState	Optional	No
InstallDate	Optional	No
InstanceID	Mandatory	Yes
Languages	Optional	No
MajorVersion	Mandatory	Yes
Manufacturer	Mandatory	Yes
MinorVersion	Mandatory	Yes
Name	Optional	Yes
OperationalStatus	Optional	No
ReleaseDate	Optional	No
RevisionNumber	Mandatory	Yes
SerialNumber	Optional	No
Status	Optional	No
StatusDescriptions	Optional	No
TargetOperatingSystems	Optional	No
VersionString	Mandatory	Yes

Name	Requirement	Is it Supported?
IsLargeBuildNumber	Optional	Yes
IdentityInfoValue	Optional	Yes
IdentityInfoType	Optional	Yes
IsEntity	Optional	Yes

Standard Class	CIM_DiagnosticServiceRecord
Extended Class	BROCADE_DiagnosticServiceRecord
Requirement	Mandatory

Properties Requirements of BROCADE_DiagnosticServiceRecord

Name	Requirement	Is it Supported?
LoopsFailed	Mandatory	No
LoopsPassed	Mandatory	No
ErrorCode	Mandatory	No
ErrorCount	Mandatory	No
Caption	Optional	
CreationTimeStamp	Mandatory	Yes
Description	Optional	
ElementName	Optional	
ExpirationDate	Mandatory	No
Generation	Optional	
InstanceID	Mandatory	Yes
Locale	Optional	
LogInstanceID	Optional	
LogName	Optional	
ManagedElementName	Mandatory	Yes
Message	Optional	

Name	Requirement	Is it Supported?
MessageID	Optional	
OtherRecordTypeDescription	Conditional	
OwningEntity	Optional	
PerceivedSeverity	Optional	
RecordData	Mandatory	Yes
RecordID	Optional	
RecordFormat	Mandatory	Yes
RecordType	Mandatory	Yes
ServiceName	Mandatory	Yes
MessageArguments	Optional	

Standard Class	CIM_DiagnosticCompletionRecord
Extended Class	BROCADE_DiagnosticCompletionRecord
Requirement	Mandatory

Properties Requirements of BROCADE_DiagnosticCompletionRecord

Name	Requirement	Is it Supported?
OtherCompletionStateDescription	Conditional	
Caption	Optional	
CompletionState	Mandatory	Yes
CreationTimeStamp	Mandatory	Yes
Description	Optional	
ElementName	Optional	
ExpirationDate	Mandatory	No
Generation	Optional	
InstanceID	Mandatory	Yes
Locale	Optional	

Name	Requirement	Is it Supported?
LogInstanceID	Optional	
LogName	Optional	
ManagedElementName	Mandatory	Yes
Message	Optional	
MessageID	Optional	
OtherRecordTypeDescription	Conditional	
OwningEntity	Optional	
PerceivedSeverity	Optional	
RecordData	Mandatory	Yes
RecordID	Optional	
RecordFormat	Mandatory	Yes
RecordType	Mandatory	Yes
ServiceName	Mandatory	Yes
MessageArguments	Optional	
LoopsFailed	Conditional	
LoopsPassed	Conditional	
ErrorCode	Mandatory	No
ErrorCount	Mandatory	No

Standard Class	CIM_AffectedJobElement
Extended Class	BROCADE_AffectedJobElement
Requirement	Mandatory

Properties Requirements of BROCADE_AffectedJobElement

Name	Reference	Requirement	Is it Supported?
AffectedElement	CIM_Managed Element	Mandatory	
AffectingElement	BROCADE_ ConcreteJob	Mandatory	
ElementEffects	N/A	Optional	
OtherElementEffectsDescriptions	N/A	Optional	

Standard Class	CIM_AvailableDiagnosticService
Extended Class	BROCADE_AvailableDiagnosticServiceForAdapter
Requirement	Mandatory

Properties Requirements of BROCADE_AvailableDiagnosticServiceForAdapter

Name	Reference	Requirement	Is it Supported?
ServiceProvided	BROCADE_ DiagnosticTest	Mandatory	Yes
UserOfService	BROCADE_ PortController	Mandatory	Yes
EstimatedDurationOfService	N/A	Mandatory	Yes
EstimatedDurationQualifier	N/A	Optional	

Standard Class	CIM_AvailableDiagnosticService
Extended Class	BROCADE_AvailableDiagnosticServiceForFCPort
Requirement	Mandatory

Properties Requirements of BROCADE_AvailableDiagnosticServiceForFCPort

Name	Reference	Requirement	Is it Supported?
ServiceProvided	BROCADE_ DiagnosticTest	Mandatory	Yes
UserOfService	BROCADE_ FCPort	Mandatory	Yes
EstimatedDurationOfService	N/A	Mandatory	Yes
EstimatedDurationQualifier	N/A	Optional	

Standard Class	CIM_AvailableDiagnosticService
Extended Class	BROCADE_AvailableDiagnosticServiceForEthernetPort
Requirement	Mandatory

Properties Requirements of BROCADE_AvailableDiagnosticServiceForEthernetPort

Name	Reference	Requirement	Is it Supported?
ServiceProvided	BROCADE_ DiagnosticTest	Mandatory	Yes
UserOfService	BROCADE_ EthernetPort	Mandatory	Yes
EstimatedDurationOfService	N/A	Mandatory	Yes
EstimatedDurationQualifier	N/A	Optional	

Standard Class	CIM_ElementSoftwareIdentity
Extended Class	BROCADE_DiagnosticElementSoftwareIdentity
Requirement	Mandatory

Properties Requirements of BROCADE_DiagnosticElementSoftwareIdentity

Name	Reference	Requirement	Is it Supported?
Antecedent	BROCADE_Diagnostic SoftwareIdentity	Mandatory	Yes
Dependent	BROCADE_Diagnostic Test	Mandatory	Yes
OtherUpgradeCondition	N/A	Optional	
UpgradeCondition	N/A	Optional	

Standard Class	CIM_OwningJobElement
Extended Class	BROCADE_OwningJobElement
Requirement	Mandatory

Properties Requirements of BROCADE_OwningJobElement

Name	Reference	Requirement	Is it Supported?
OwnedElement	BROCADE_ConcreteJob	Mandatory	Yes
OwningElement	BROCADE_DiagnosticTest	Mandatory	Yes

Standard Class	CIM_RecordAppliesToElement
Extended Class	BROCADE_ServiceRecordAppliesToElement
Requirement	Mandatory

Properties Requirements of BROCADE_ServiceRecordAppliesToElement

Name	Reference	Requirement	Is it Supported?
Antecedent	BROCADE_DiagnosticServiceRecord	Mandatory	Yes
Dependent	CIM_ManagedElement	Mandatory	Yes

Standard Class	CIM_RecordAppliesToElement
Extended Class	BROCADE_CompletionRecordAppliesToElement
Requirement	Mandatory

Properties Requirements of BROCADE_CompletionRecordAppliesToElement

Name	Reference	Requirement	Is it Supported?
Antecedent	BROCADE_DiagnosticCompletion Record	Mandatory	Yes
Dependent	CIM_ManagedElement	Mandatory	Yes

Host LAN Network Port

Profile	Host LAN Network Port
Version	1.0.0 / DSP1035
Organization	DMTF

Standard Class	CIM_LANEndpoint
Extended Class	BROCADE_LANEndpoint
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_LANEndpoint

Name	Requirement	Is it Supported?
Caption	Optional	No
Description	Mandatory	Yes
ElementName	Mandatory	Yes
SystemCreationClassName	Mandatory	Yes
SystemName	Mandatory	Yes
CreationClassName	Mandatory	Yes
NameFormat	Mandatory	Yes
ProtocolType	Optional	No
ProtocolIFType	Mandatory	Yes
OtherTypeDescription	Optional	No
BroadcastResetSupported	Optional	No
BroadcastReset	Optional	No
LANID	Mandatory	Yes
LANType	Optional	No
OtherLANType	Optional	No
MACAddress	Mandatory	Yes
AliasAddresses	Optional	No
GroupAddresses	Optional	No
MaxDataSize	Mandatory	Yes
InstallDate	Optional	No
Name	Mandatory	Yes
OperationalStatus	Optional	No
StatusDescriptions	Optional	No
Status	Optional	No
HealthState	Mandatory	Yes
PrimaryStatus	Optional	No
DetailedStatus	Optional	No

Name	Requirement	Is it Supported?
OperatingStatus	Optional	No
CommunicationStatus	Optional	No
EnabledState	Mandatory	Yes
OtherEnabledState		
RequestedState	Mandatory	No
EnabledDefault	Optional	Yes
TimeOfLastStateChange	Optional	No
AvailableRequestedStates	Optional	No
TransitioningToState	Optional	Yes

Standard Class	CIM_HostedAccessPoint
Extended Class	BROCADE_HostedLANEndpoint
Requirement	Optional
API Mapping	

Properties Requirements of BROCADE_HostedLANEndpoint

Name	Reference	Requirement	Is it Supported?
Antecedent	BROCADE_ComputerSystem	Mandatory	Yes
Dependent	BROCADE_LANEndpoint	Mandatory	Yes

Standard Class	CIM_DeviceSAPImplementation
Extended Class	BROCADE_LANEndpointDeviceSAPImplementation
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_LANEndpointDeviceSAPImplementation

Name	Reference	Requirement	Is it Supported?
Antecedent	CIM_LogicalDevice	Mandatory	Yes
Dependent	CIM_ServiceAccessPoint	Mandatory	Yes

Physical Asset

Profile	Physical Asset
Version	1.0.2 / DSP1011
Organization	DMTF

Standard Class	CIM_PhysicalConnector
Extended Class	BROCADE_PhysicalConnector
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_PhysicalConnector

Name	Requirement	Is it Supported?
CanBeFRUed	Optional	No
Caption	Optional	Yes
CommunicationStatus	Optional	No
ConnectorDescription	Optional	Yes
ConnectorElectricalCharacteristics	Optional	No
ConnectorGender	Optional	Yes
ConnectorLayout	Mandatory	Yes
ConnectorPinout	Optional	Yes
ConnectorType	Mandatory	Yes

Name	Requirement	Is it Supported?
CreationClassName	Mandatory	Yes
Description	Mandatory	Yes
DetailedStatus	Optional	No
ElementName	Mandatory	Yes
HealthState	Optional	No
InstallDate	Optional	No
ManufactureDate	Optional	No
Manufacturer	Mandatory	Yes
Model	Mandatory	Yes
Name	Optional	No
NumPhysicalPins	Optional	Yes
OperatingStatus	Optional	No
OperationalStatus	Optional	No
OtherElectricalCharacteristics	Optional	No
OtherIdentifyingInfo	Optional	No
OtherTypeDescription	Optional	No
PartNumber	Mandatory	Yes
PoweredOn	Optional	No
PrimaryStatus	Optional	No
SerialNumber	Mandatory	Yes
SKU	Optional	No
Status	Optional	No
StatusDescriptions	Optional	No
Tag	Mandatory	Yes
UserTracking	Optional	No
VendorEquipmentType	Optional	No
Version	Mandatory	Yes

Standard Class	CIM_Realizes
Extended Class	BROCADE_EthernetPortRealizes
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_EthernetPortRealizes

Name	Reference	Requirement	Is it Supported?
Antecedent	CIM_PhysicalElement	Mandatory	Yes
Dependent	CIM_LogicalDevice	Mandatory	Yes

Standard Class	CIM_Container
Extended Class	BROCADE_PhysicalConnectorContainer
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_PhysicalConnectorContainer

Name	Reference	Requirement	Is it Supported?
GroupComponent	CIM_PhysicalPackage	Mandatory	Yes
PartComponent	CIM_PhysicalElement	Mandatory	Yes

Storage HBA

Profile	Storage HBA
Version	1.3.0
Organization	SNIA

Standard Class	CIM_ProductElementComponent
Extended Class	BROCADE_ProductElementComponent
Requirement	Mandatory
API Mapping	

Properties Requirements of BROCADE_ProductElementComponent

Name	Reference	Requirement	Is it Supported?
PartComponent	BROCADE_PortController	Mandatory	Yes
GroupComponent	BROCADE_Product	Mandatory	Yes

C Windows Management Instrumentation

Windows Management Instrumentation

Windows Management Instrumentation (WMI) is a Microsoft implementation of Web-Based Enterprise Management (WBEM), which is the industry standard for unifying the management of distributed computer systems. The WBEM standard includes the Common Information Model (CIM) for describing management information relevant to systems, applications, networks, devices, and services.

WMI Architecture

Figure C-1 illustrates the WMI architecture.

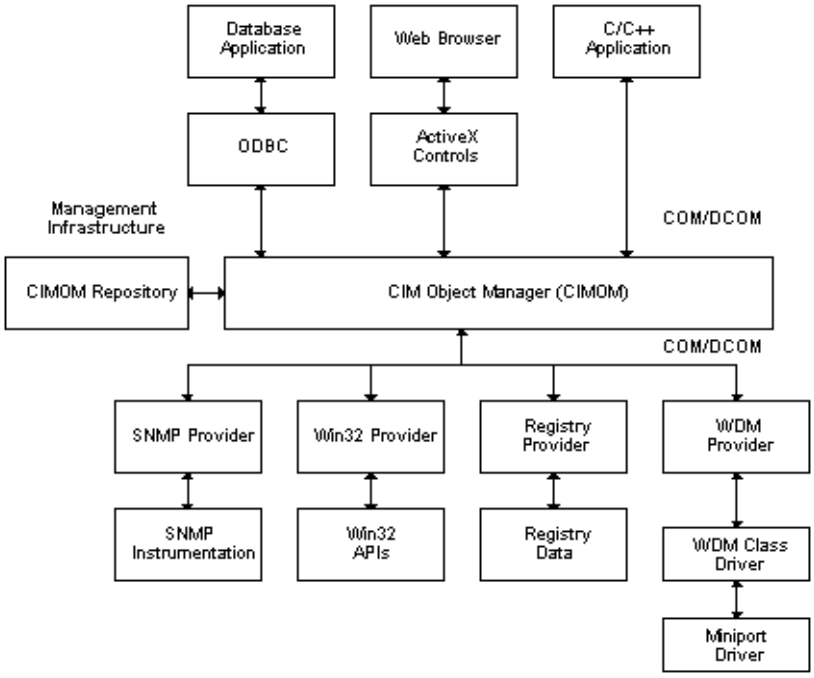

Figure C-1. WMI Architecture

WBEM provides a three-tiered approach for collecting and distributing management data. In Microsoft WMI, this approach consists of a standard mechanism for storing object definitions (a CIM-compliant object repository), a standard protocol for obtaining and disseminating management data (COM/DCOM; other protocols are also possible), and one or more Win32 Dynamic Link Libraries (DLLs) that function as WMI data providers.

The executable process that provides all of the WMI functionality is **WinMgmt.exe**. This executable file supports the CIM object repository, the CIM Object Manager, and the APIs that together deliver WMI.

CIM Object Manager

A central goal of WBEM is the uniform representation of data, and this data is encapsulated in object-oriented fashion in the CIM object repository. The CIM Object Manager provides a collection and manipulation point for managed objects stored in the repository. It facilitates gathering and manipulating information about these managed objects.

WMI Providers

WMI providers act as intermediaries between the CIM Object Manager and one or more managed objects. If the CIM Object Manager receives a request from a management application for information that is not available from the CIM repository or for notification of events that it does not support, CIM Object Manager forwards the request to the provider. The provider then supplies the information or event notification requested.

WMI includes the following providers:

- Win32 provider
- WDM provider
- Event Log provider
- Registry provider
- Performance Counter provider
- Active Directory provider
- Windows Installer provider
- SNMP provider
- View provider

Event Handling

After an event occurs, an event provider notifies the CIM Object Manager, and then the CIM Object Manager delivers this notification to one or more registered recipients, called event consumers. Event consumers can register with the CIM Object Manager to receive particular types of notifications, and event providers can register to supply particular types of notifications. To enable event consumers to operate independently from event providers, the CIM Object Manager will act as an intermediary by matching the registered consumers with responsible providers and forwarding appropriate events.

Event consumers register to receive notifications without knowing how the events and notifications are provided. To register, these consumers specify a filter. The filter is created using the WMI Query Language (WQL). The filter describes the conditions under which the consumer wants to receive event notification.

WMI Query Language

WQL is a dialect of Structured Query Language (SQL), with extensions to support event notification and other WBEM-compatible features.

WDM Provider

Microsoft developed the Windows Driver Model (WDM) provider for kernel component instrumentation. The WDM instrumentation component is a part of the WDM architecture (refer to Figure C-2); however, it has broad utility and can be used with other types of drivers as well (such as SCSI and NDIS). The WDM provider interfaces with a kernel mode component that provides services to allow WDM-enabled drivers to implement WMI, and also acts as an interface to the WDM provider. WMI uses the WDM provider to publish information, configure device settings, and supply event notification from device drivers.

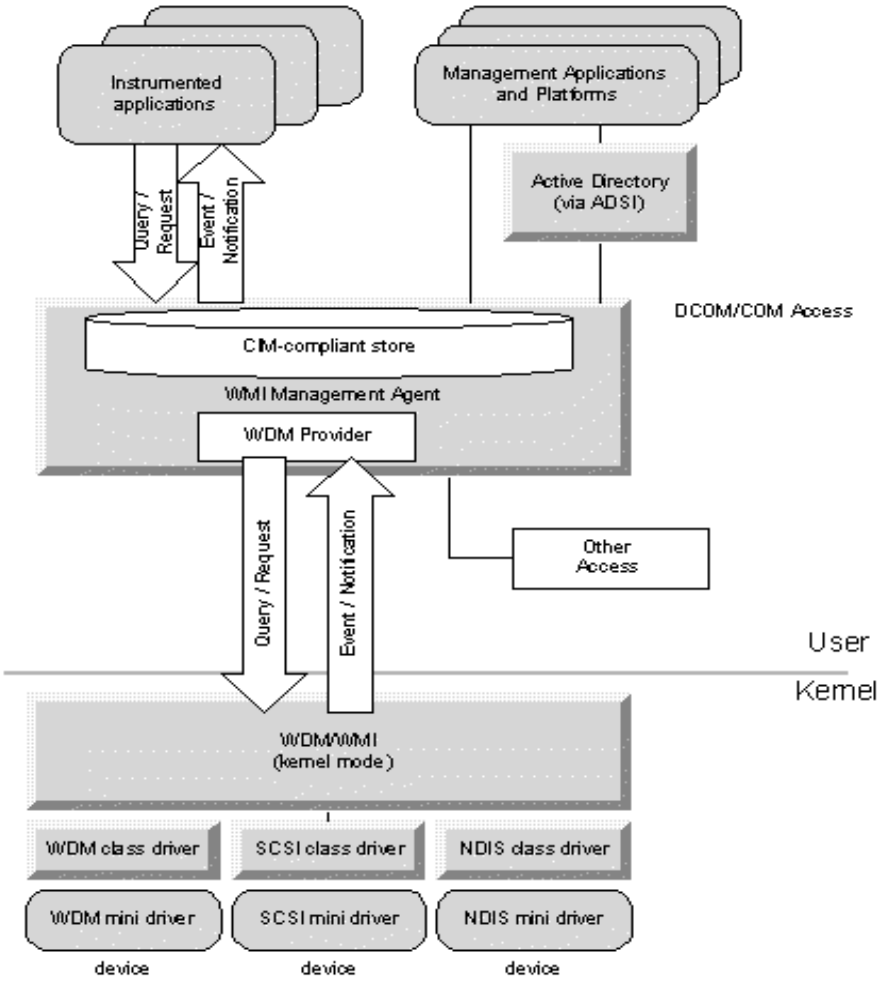

Figure C-2. Windows Driver Model (WDM) Architecture

The kernel mode WMI component provides services that allow WMI-enabled drivers to implement WMI, and also act as an interface to the WDM provider.

Examples include sending temperature alerts, or detecting when the number of bad blocks or sectors on a hard disk drive has crossed a critical limit and sending the appropriate notification. An IHV/OEM can write a new class driver, for example, to report temperature, fan control data, and populate CIM with the appropriate instrumentation information.

Figure C-3 illustrates how the miniport driver communicates with the SCSI port driver during the process of the various WMI requests and asynchronous events.

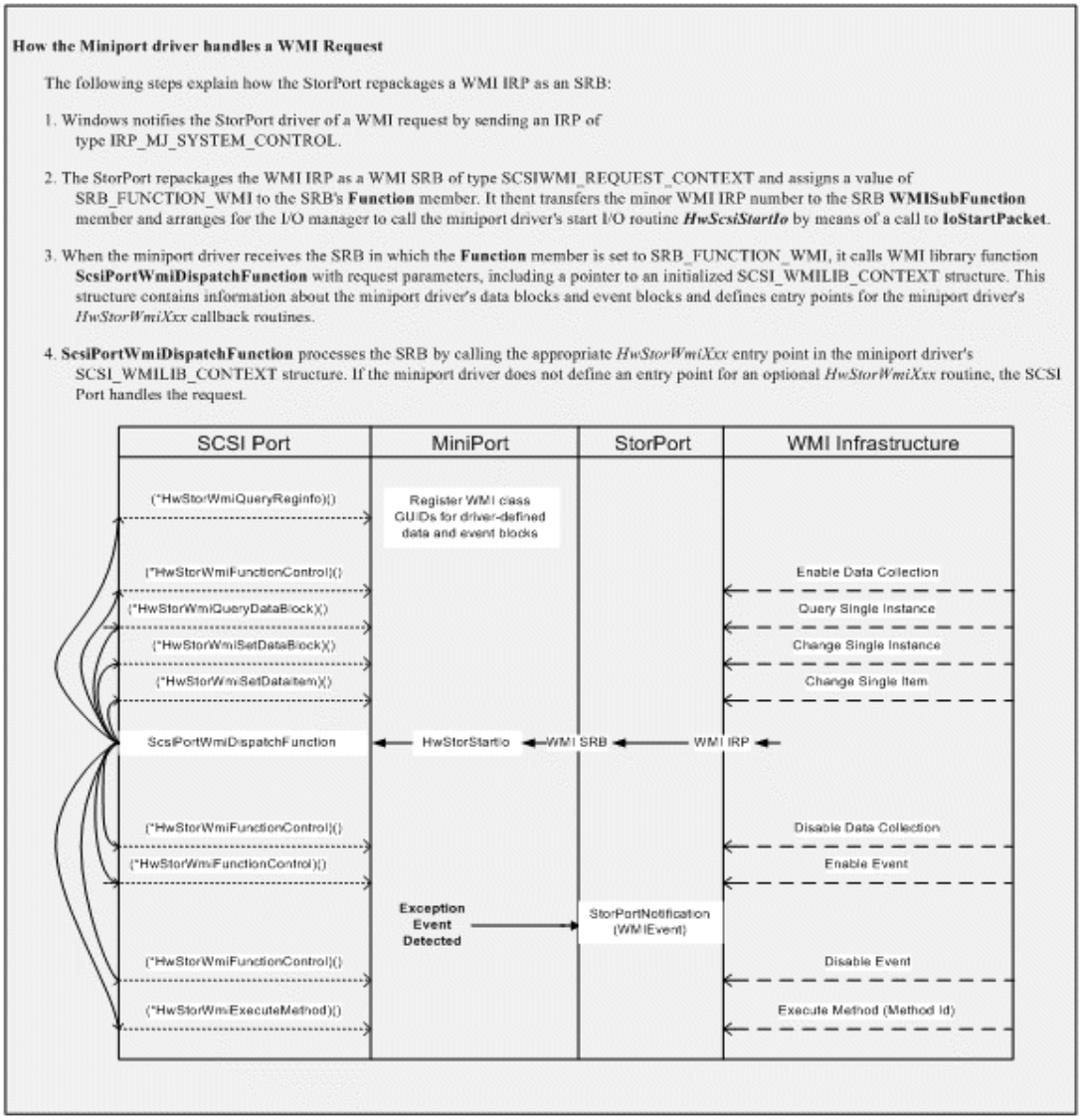

Figure C-3. Miniport Driver Communication

D CIM-XML Format for Executing the Methods

Sample CIM request and CIM response

The following example is a sample XML request for invoking the extrinsic method **InstallFromURI()** for the class BROCADE_HBASoftwareInstallationService and its response. For more details about CIM Operations over HTTP and representation of CIM in XML specifications, refer to DMTF Standard Publications.

CIM Request

```
<?xml version="1.0" encoding="utf-8" ?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
   <MESSAGE ID="1088" PROTOCOLVERSION="1.0">
      <SIMPLEREQ>
         <METHODCALL NAME="InstallFromURI">
            <LOCALINSTANCEPATH>
               <LOCALNAMESPACEPATH>
                  <NAMESPACE NAME="root"/>
                  <NAMESPACE NAME="brocade"/>
               </LOCALNAMESPACEPATH>
               <INSTANCENAME CLASSNAME="BROCADE_HBASoftwareInstallationService">
                  <KEYBINDING NAME="CreationClassName">
                     <KEYVALUE
VALUETYPE="string">BROCADE_HBASoftwareInstallationService</KEYVALUE>
                  </KEYBINDING>
                  <KEYBINDING NAME="Name">
                     <KEYVALUE VALUETYPE="string">Brocade Adapter Software Update
Service</KEYVALUE>
                  </KEYBINDING>
                  <KEYBINDING NAME="SystemCreationClassName">
                     <KEYVALUE VALUETYPE="string">BROCADE_ComputerSystem</KEYVALUE>
                  </KEYBINDING>
                  <KEYBINDING NAME="SystemName">
                     <KEYVALUE VALUETYPE="string">10.24.21.224</KEYVALUE>
                  </KEYBINDING>
               </INSTANCENAME>
            </LOCALINSTANCEPATH>
            <PARAMVALUE NAME="InstallOptionsValues" PARAMTYPE="string">
               <VALUE.ARRAY>
            </PARAMVALUE>
            <PARAMVALUE NAME="InstallOptions" PARAMTYPE="uint16">
```

```
            <VALUE.ARRAY>
               <VALUE>4</VALUE>
               <VALUE>5</VALUE>
            </VALUE.ARRAY>
         </PARAMVALUE>
         <PARAMVALUE NAME="Target" PARAMTYPE="reference">
            <VALUE.REFERENCE>
               <INSTANCENAME CLASSNAME="BROCADE_PortController">
                  <KEYBINDING NAME="CreationClassName">
                     <KEYVALUE VALUETYPE="string">BROCADE_PortController</KEYVALUE>
               </KEYBINDING>
               <KEYBINDING NAME="DeviceID">
                  <KEYVALUE VALUETYPE="string">00051EAF6AFD</KEYVALUE>
               </KEYBINDING>
               <KEYBINDING NAME="SystemCreationClassName">
                  <KEYVALUE VALUETYPE="string">BROCADE_ComputerSystem</KEYVALUE>
               </KEYBINDING>
               <KEYBINDING NAME="SystemName">
                  <KEYVALUE VALUETYPE="string">10.24.21.224</KEYVALUE>
               </KEYBINDING>
            </INSTANCENAME>
         </VALUE.REFERENCE>
      </PARAMVALUE>
      <PARAMVALUE NAME="URI" PARAMTYPE="string">
         <VALUE>file:///tmp/brocade_adapter_boot_fw_v2-2-0-1</VALUE>
         </PARAMVALUE>
      </METHODCALL>
   </SIMPLEREQ>
</MESSAGE>
</CIM>
```

CIM Response

```
<?xml version="1.0" encoding="utf-8" ?>
<CIM CIMVERSION="2.0" DTDVERSION="2.0">
   <MESSAGE ID="1088" PROTOCOLVERSION="1.0">
      <SIMPLERSP>
         <METHODRESPONSE NAME="InstallFromURI">
            <RETURNVALUE PARAMTYPE="uint32">
               <VALUE>0</VALUE>
            </RETURNVALUE>
         </METHODRESPONSE>
      </SIMPLERSP>
   </MESSAGE>
</CIM>
```

The user can send the CIM-XML request to a CIM Server from a CIM client. One of the utilities for Linux distribution is **wget**. The following sample command sends the request using **wget**:

```
wget --server-response https://10.24.21.224:5989 --no-check-certificate
--http-user=root --http-password=password --post-file=installfromURI.xml
```

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