

Switch Connection Profile

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1. Scope

The Switch Connection Profile describes the properties of every physical network port in the system.

And there is a configuration service used to refresh the network port.

2. Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- DMTF DSP0131, Profile Registration Profile 1.0.0
- DMTF DSP0226, Web Services for Management (WS-Management) Specification 1.1.0
- DMTF DSP0227, WS-Management CIM Binding Specification 1.0.0
- Dell Lifecycle Controller Best Practices Guide 1.0,
http://en.community.dell.com/techcenter/extras/m/white_papers/20066173.aspx
- Dell WSMAN Licenses and Privileges 1.0
- ISO/IEC Directives, Part 2, *Rules for the structure and drafting of International Standards*,
<http://isotc.iso.org/livelink/livelink.exe?func=ll&objId=4230456&objAction=browse&sort=subtype>
- Unified Modeling Language (UML) from the Open Management Group (OMG), <http://www.uml.org>
- Related Managed Object Format (MOF) files:
 - DCIM_SwitchConnectionView.mof
 - DCIM_SwitchConnectionService.mof

Dell Tech Center MOF Library: <http://www.delltechcenter.com/page/DCIM.Library.MOF>.

3. Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

Conditional – Indicates requirements to be followed strictly in order to conform to the document when the specified conditions are met.

Mandatory – Indicates requirements to be followed strictly in order to conform to the document and from which no deviation is permitted.

3.1. May

Indicates a course of action permissible within the limits of the document.

3.2. Optional

Indicates a course of action permissible within the limits of the document.

3.3. Can

Used for statements of possibility and capability, whether material, physical, or causal.

3.4. Cannot

Used for statements of possibility and capability, whether material, physical, or causal.

3.5. Need not

Indicates a course of action permissible within the limits of the document.

3.6. Referencing profile

Indicates a profile that owns the definition of this class and can include a reference to this profile in its “Related Profiles” table.

3.7. Shall

Indicates requirements to be followed strictly in order to conform to the document and from which no deviation is permitted.

3.8. Shall not

Indicates requirements to be followed strictly in order to conform to the document and from which no deviation is permitted.

3.9. Should

Indicates that among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required.

3.10. Should not

Indicates that a certain possibility or course of action is deprecated but not prohibited

3.11. FQDD

Fully Qualified Device Descriptor is used to identify a particular component in a system.

3.12. Interop Namespace root/interop

Interop Namespace is where instrumentation instantiates classes to advertise its capabilities for client discovery.

3.13. Implementation Namespace: root/dcim

Implementation Namespace is where instrumentation instantiates classes relevant to executing core management tasks.

3.14. ENUMERATE

Refers to WS-MAN ENUMERATE operation as described in Section 8.2 of DSP0226_V1.1 and Section 9.1 of DSP0227_V1.0

3.15. GET

Refers to WS-MAN GET operation as defined in Section 7.3 of DSP00226_V1.1 and Section 7.1 of DSP0227_V1.0.

3.16. Cachecade

The cachecade feature makes use of high-performing solid state disks (SSDs) as a secondary tier of cache to provide faster reads to maximize transactional I/O performance.

4. Symbols and Abbreviated Terms

4.1. CIM

Common Information Model

4.2. iDRAC

Integrated Dell Remote Access Controller – management controller for blades and monolithic servers

4.3. CMC

Chassis Management Controller – management controller for the modular chassis

4.4. EMM

Enclosure Management Module

5. Synopsis

Profile Name: SwitchConnection Profile

Version: 4.0.0.

Organization: Dell

CIM Schema Version:2.41Final

Central Class: DCIM_SwitchConnectionView

Scoping Class: CIM_ComputerSystem

The Dell Switch Connection Profile is component profile that contains the Dell specific implementation and requirements of switch connection view.

Table 1 identifies profiles that are related to this profile.

Table 1. Related Profiles

Profile Name	Organization	Version	Relationship
Profile Registration	DCIM	1.0	Reference

6. Description

The Dell Switch Connection profile describes the physical switch connection port information is represented by an instance of DCIM_SwitchConnectionView.

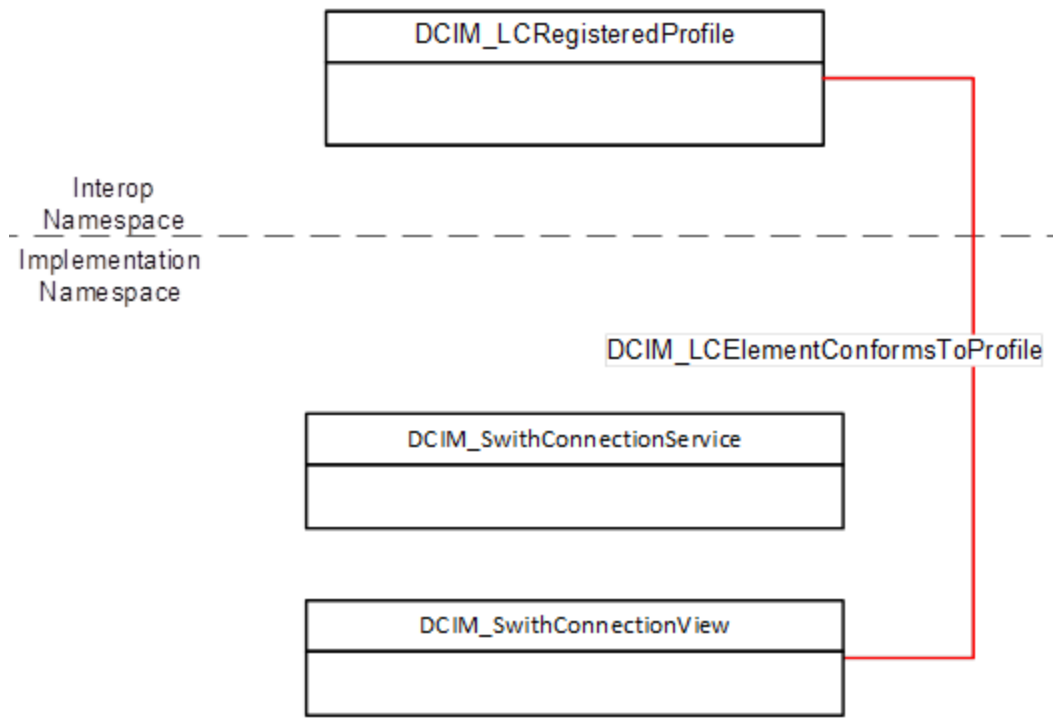


Figure 1. SwitchConnection Profile: Class Diagram

7. Implementation Description

This section describes the requirements and guidelines for implementing Switch Connection profile.

Table 2 shows the instances of CIM Elements for this profile. Instances of the CIM Elements shall be implemented as described in Table 2.

Table 2. CIM Elements:SwitchConnection Profile

Element Name	Requirement	Description
Classes		
DCIM_SwitchConntionService	Mandatory	See section 7.3
DCIM_SwitchConnectionView	Mandatory	See section 7.1.1
Indications		
None defined in this profile		

7.1. View Classes

This section describes the implementation for the DCIM_SwitchConnectionView class. This class shall be instantiated in the Implementation Namespace: root/dcim.

7.1.1. Resource URIs for WinRM®

The class Resource URI shall be “http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_SwitchConnectionView?__cimnamespace=root/dcim”

The key property shall be the InstanceID.

The instance Resource URI for DCIM_SwitchConnectionView instance shall be:
 “http://schemas.dell.com/wbem/wscim/1/cim-
 schema/2/DCIM_SwitchConnectionView?__cimnamespace=root/dcim+InstanceID=<FQDD>”

7.1.2. Operations

The following table lists the implemented operations on DCIM_SwitchConnectionView.

Table 3. DCIM_SwitchConnectionView - Operations

Operation Name	Requirements	Required Input
Get	Mandatory	Instance URI
Enumerate	Mandatory	Class URI

7.1.3. Class Properties

The following table lists the implemented properties for DCIM_SwitchConnectionView instance representing the every physical port in a system. The “Requirements” column shall denote whether the property is implemented (for requirement definitions, see section 3). The “Additional Requirements” column shall denote either possible values for the property, or requirements on the value formulation.

Table 4. DCIM_SwitchConnectionView - Properties

Property Name	Requirement	Type	Additional Requirements
InstanceID	Mandatory	string	The property shall have the value of the FQDD.
FQDD	Mandatory	string	The property shall represent Fully Qualified Device Description (FQDD.)
SwitchConnectionID	Mandatory	string	SwitchConnectionID is the Chassis ID information extracted from the switch LLDP packet
SwitchPortConnectionID	Mandatory	string	SwitchPortConnectionID gives the Port description
StaleData	Mandatory	Uint16	indicating whether the information in this instance is stale or not <ul style="list-style-type: none"> • 0 – Not stale. • 1 – Stale.

7.2. DCIM_SwitchConnectionService

This section describes the implementation for the DCIM_SwitchConnectionService class.

This class shall be instantiated in the Implementation Namespace: root/dcim.

7.2.1. Resource URIs for WinRM®

The class Resource URI shall be “http://schemas.dell.com/wbem/wscim/1/cim-
 schema/2/DCIM_SwitchConnectionService?__cimnamespace=root/dcim”

The key properties shall be the SystemCreationClassName, CreationClassName, SystemName, and Name.

The instance Resource URI for DCIM_SwitchConnectionService instance shall be:

“http://schemas.dell.com/wbem/wscim/1/cim-
 schema/2/DCIM_SwitchConnectionService?__cimnamespace=root/dcim+SystemCreationClassName=DCIM_ComputerSystem+CreationClassName=DCIM_SwitchConnectionService+
 SystemName=DCIM:ComputerSystem+Name=DCIM:SwitchConnectionService”

7.2.2. Operations

The following table de lists tails the implemented operations on DCIM_SwitchConnectionService.

Table 5. DCIM_SwitchConnectionService – Operations

Operation Name	Requirements	Required Input
Get	Mandatory	Instance URI
Enumerate	Mandatory	Class URI
Invoke	Mandatory	Instance URI

7.2.3. Class Properties

The following table lists the implemented properties for DCIM_SwitchConnectionService instance representing a storage service in a system. The “Requirements” column shall denote whether the property is implemented (for requirement definitions, see section 3). The “Additional Requirements” column shall denote either possible values for the property, or requirements on the value formulation.

Table 6. Class: DCIM_SwitchConnectionService

Property Name	Requirement	Type	Additional Requirements
SystemCreationClassName	Mandatory	string	The property value shall be “DCIM_ComputerSystem”.
CreationClassName	Mandatory	string	The property value shall be “DCIM_SwitchConnectionService”.
SystemName	Mandatory	string	The property value shall be “DCIM:ComputerSystem”.
Name	Mandatory	string	The property value shall be “DCIM:SwitchConnectionService”.
ElementName	Mandatory	string	The property value shall be “DRAC Service”.

8. Methods

This section details the requirements for supporting intrinsic operations and extrinsic methods for the CIM elements defined by this profile

8.1. DCIM_SwitchConnectionService. ServerPortConnectionRefresh()

TheServerPortConnectionRefresh() method is used to refresh the network data.

Table 7. ServerPortConnectionRefresh Method: Return Code Values

Value	Description
0	Request was successfully executed.
2	Error occurred

Table 8. ServerPortConnectionRefresh Method: Standard Messages

MessageID (OUT parameter)	Message
RAC089	The refresh operation of switch connection and switch port connection information of all network ports is completed successfully.
RAC090	Unable to complete the switch connection and switch port connection data refresh operation because of internal error.

Table 9. ServerPortConnectionRefresh Method: Parameters

Qualifiers	Name	Type	Description/Values
OUT	MessageID	String	Error MessageID is returned If the method fails to execute.
OUT	Message	String	Error Message in English corresponding to MessageID is returned If the method fails to execute.

Qualifiers	Name	Type	Description/Values
OUT	MessageArguments[]	string	Substitution variables for dynamic error messages

9. Use Cases

See Lifecycle Controller (LC) Integration Best Practices Guide.

10. CIM Elements

No additional details specified.

11. Privilege and License Requirement

The following table lists the privilege and license requirements for the listed operations. For the detailed explanation of the privileges and licenses, refer to the Dell WSMAN Licenses and Privileges specification.

Table 10. Privilege and License Requirements

Class and Method	Operation	User Privilege Required	License Required
DCIM_SwitchConnectionView	ENUMERATE, GET	Login	None
DCIM_SwitchConnectionService. ServerPortConnectionRefresh()	INVOKE	Login, System Control	LM_REMOTE_CONFIGURATION