# SMASH Collections Profile

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# Foreword

The SMASH Collections Profile (DCIM1017) was prepared by Dell CIM Review Board.

## Introduction

This specification identifies the necessary classes, properties, methods, and values to be instantiated and manipulated to represent and manage SMASH collections modeled using the DMTF Common Information Model (CIM) core and extended model definitions.

This document is intended for implementers who write CIM-based providers or consumers of management interfaces representing the component described herein.

## **SMASH Collections Profile**

## 1 Scope

The SMASH Collections Profile extends the management capability of referencing profiles by adding the ability to create collections of managed elements.

## 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.

## 2.1 Approved References

DMTF DSP0200, CIM Operations over HTTP 1.2.0

DMTF DSP0004, CIM Infrastructure Specification 2.3.0

DMTF DSP1000, Management Profile Specification Template

DMTF DSP1001, Management Profile Specification Usage Guide

## 2.2 References under Development

DMTF DSP1004, Base Server Profile

DMTF DSP1012, Boot Control Profile

DMTF DSP1018, Chassis Manager Profile

DMTF DSP1005, CLP Service Profile

DMTF DSP1022, CPU Profile

DMTF DSP1019, Device Tray Profile

DMTF DSP1037, DHCP Client Profile

DMTF DSP1038, DNS Client Profile

DMTF DSP1013, Fan Profile

DMTF DSP1023, Software Inventory Profile

DMTF DSP1025, Software Update Profile

DMTF DSP1036, IP Interface Profile

DMTF DSP1020, Pass-Through Module Profile

DMTF DSP1011, Physical Asset Profile

DMTF DSP1015, Power Supply Profile

DMTF DSP1033, Profile Registration Profile

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DMTF DSP1010, Record Log Profile

DMTF DSP1039, Role Based Authorization Profile

DMTF DSP1009, Sensors Profile

DMTF DSP1027, Server Power State Management Profile

DMTF DSP1021, Shared Device Management Profile

DMTF DSP1017, SSH Service Profile

DMTF DSP1026, System Memory Profile

DMTF DSP1016, Telnet Service Profile

DMTF DSP1024, Text Console Redirection Profile

#### 2.3 Other References

ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards

<u>Unified Modeling Language (UML) from the Open Management Group (OMG)</u>

## 3 Terms and Definitions

For the purposes of this document, the terms and definitions given in <u>DSP1033</u> and <u>DSP1001</u> and the following apply.

#### 3.1

#### can

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

#### 3.2

#### cannot

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

#### 3.3

#### conditional

indicates requirements to be followed strictly to conform to the document when the specified conditions are met

## 3.4

#### mandatory

indicates requirements to be followed strictly to conform to the document and from which no deviation is permitted

#### 3.5

#### may

indicates a course of action permissible within the limits of the document

#### 3.6

#### need not

indicates a course of action permissible within the limits of the document

#### 3.7

#### optional

indicates a course of action permissible within the limits of the document

#### 3.8

## referencing profile

indicates a profile that owns the definition of this class and can include a reference to this profile in its "Referenced Profiles" table

## 3.9

#### shall

indicates requirements to be followed strictly to conform to the document and from which no deviation is permitted

#### 3.10

#### shall not

indicates requirements to be followed strictly to conform to the document and from which no deviation is permitted

#### 3.11

#### 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

#### 3.12

## should not

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

#### 3.13

## unspecified

indicates that this profile does not define any constraints for the referenced CIM element or operation

#### 3.14

## **Capabilities Collection**

CIM ConcreteCollection instance for instances of the CIM Capabilities class

#### 3.15

## **Capacities Collection**

CIM\_ConcreteCollection instance for instances of the CIM\_ConfigurationCapacity

#### 3.16

#### **Consoles Collection**

CIM\_ConcreteCollection instance for instances of the CIM\_TextRedirectionSAP class

#### 3.17

## **Logs Collection**

CIM\_ConcreteCollection instance for instances of the CIM\_RecordLog class

#### 3.18

## **Sensors Collection**

CIM\_ConcreteCollection instance for instances of the CIM\_Sensor and CIM\_NumericSensor classes

#### 3.19

## **Settings Collection**

CIM\_ConcreteCollection instance for instances of the CIM\_SettingData class

## 4 Symbols and Abbreviated Terms

The following abbreviations are used in this document.

## 4.1

#### **SMASH**

Systems Management Architecture for Server Hardware

## 4.2

#### **SM CLP**

Server Management Command Line Protocol

## 4.3

#### SM ME

Server Management Managed Element

## 5 Synopsis

Profile Name: SMASH Collections Profile

Version: 1.0.0a

**Organization: DMTF** 

CIM Schema Version: 2.11

Central Class: CIM\_ConcreteCollection Scoping Class: CIM\_ComputerSystem

The SMASH Collections Profile extends the management capability of referencing profiles by adding the capability to represent collections of managed elements for use when implementing the SM CLP or SM ME Addressing specifications.

The Central Class for the SMASH Collections Profile shall be the CIM\_ConcreteCollection class. Each instance of CIM\_ConcreteCollection shall be a Central Instance of the SMASH Collections Profile.

The Scoping Class for the SMASH Collections Profile shall be CIM\_ComputerSystem. The Scoping Instance of the SMASH Collections Profile shall be the instance of CIM\_ComputerSystem to which the Central Instances are associated through instances of CIM\_OwningCollectionElement.

Table 1 identifies profiles that this profile has a dependency.

Table 1 - Referenced Profiles

Profile Name	Organization	Version	Relationship	Behavior
Base Server Profile	DMTF	1.0	Optional	See section 7.2.
Boot Control Profile	DMTF	1.0	Optional	See section 7.3.
Chassis Manager Profile	DMTF	1.0	Optional	See section 7.4.
CLP Service Profile	DMTF	1.0	Optional	See section 7.5.
CPU Profile	DMTF	1.0	Optional	See section 7.6.
Device Tray Profile	DMTF	1.0	Optional	See section 7.7.
DHCP Client Profile	DMTF	1.0	Optional	See section 7.8.
DNS Client Profile	DMTF	1.0	Optional	See section 7.9.
Fan Profile	DMTF	1.0	Optional	See section 7.10.
Software Update Profile	DMTF	1.0	Optional	See section 7.11.
IP Interface Profile	DMTF	1.0	Optional	See section 7.12.
Pass-Through Module Profile	DMTF	1.0	Optional	See section 7.13.
Physical Asset Profile	DMTF	1.0	Optional	See section 7.14.
Power Supply Profile	DMTF	1.0	Optional	See section 7.15.
Profile Registration Profile	DMTF	1.0	Mandatory	None
Record Log Profile	DMTF	1.0	Optional	See section 7.16.
Role Based Authorization Profile	DMTF	1.0	Optional	See section 7.17.
Sensors Profile	DMTF	1.0	Optional	See section 7.18.
Server Power State Management Profile	DMTF	1.0	Optional	See section 7.19.
Shared Device Management Profile	DMTF	1.0	Optional	See section 7.20.
SSH Service Profile	DMTF	1.0	Optional	See section 7.21.
System Memory Profile	DMTF	1.0	Optional	See section 7.22.
Telnet Service Profile	DMTF	1.0	Optional	See section 7.23.
Text Console Redirection Profile	DMTF	1.0	Optional	See section 7.24.

## 6 Description

The SMASH Collections Profile describes collections, the associations that scope the collections to a system, and the associations that scope managed elements have to the collections.

The SMASH Collections Profile defines the following collections:

- Capabilities instances of CIM\_Capabilities
- Capacities instances of CIM\_ConfigurationCapacity
- Consoles instances of CIM\_TextRedirectionSAP
- Logs instances of CIM\_RecordLog
- Sensors instances of CIM\_Sensor and CIM\_NumericSensor
- Settings instances of CIM\_SettingData

Figure 1 represents the class schema for the SMASH Collections Profile. For simplicity, the prefix CIM\_has been removed from the class names.

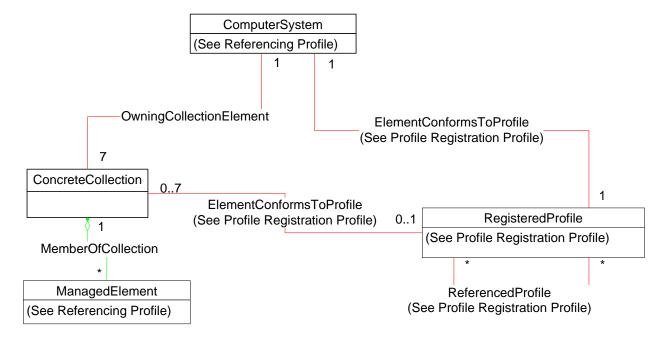


Figure 1 – SMASH Collections Profile: Class Diagram

## 7 Implementation Requirements

This section details the requirements related to the arrangement of instances and their properties for implementations of this profile.

#### 7.1 Collection Definitions

This section details the requirements for instances of CIM\_ConcreteCollection that represent each of the SMASH collections.

#### 7.1.1 Capabilities Collection

An instance of CIM\_ConcreteCollection shall aggregate instances of CIM\_Capabilities. This collection is the Capabilities Collection.

#### 7.1.1.1 CIM ConcreteCollection.ElementName

When an instance of CIM\_ConcreteCollection is the Capabilities Collection, the value of the ElementName property shall be "Capabilities".

## 7.1.2 Capacities Collection

An instance of CIM\_ConcreteCollection shall aggregate instances of CIM\_ConfigurationCapacity. This collection is the Capacities Collection.

#### 7.1.2.1 CIM\_ConcreteCollection.ElementName

When an instance of CIM\_ConcreteCollection is the Capacities Collection, the value of the ElementName property shall be "Capacities".

#### 7.1.3 Consoles Collection

An instance of CIM\_ConcreteCollection shall aggregate instances of CIM\_TextRedirectionSAP. This collection is the Consoles Collection.

#### 7.1.3.1 CIM\_ConcreteCollection.ElementName

When an instance of CIM\_ConcreteCollection is the Consoles Collection, the value of the ElementName property shall be "Consoles".

## 7.1.4 Logs Collection

An instance of CIM\_ConcreteCollection shall aggregate instances of CIM\_RecordLog. This collection is the Logs Collection.

#### 7.1.4.1 CIM ConcreteCollection.ElementName

When an instance of CIM\_ConcreteCollection is the Logs Collection, the value of the ElementName property shall be "Logs".

#### 7.1.5 Sensors Collection

An instance of CIM\_ConcreteCollection shall aggregate instances of CIM\_RecordLog. This collection is the Sensors Collection.

#### 7.1.5.1 CIM ConcreteCollection.ElementName

When an instance of CIM\_ConcreteCollection is the Sensors Collection, the value of the ElementName property shall be "Sensors".

#### 7.1.6 Settings Collection

An instance of CIM\_ConcreteCollection shall aggregate instances of CIM\_SettingData. This collection is the Settings Collection.

#### 7.1.6.1 CIM ConcreteCollection.ElementName

When an instance of CIM\_ConcreteCollection is the Settings Collection, the value of the ElementName property shall be "Settings".

#### 7.1.7 Profiles Collection

An instance of CIM\_ConcreteCollection shall aggregate instances of CIM\_RegisteredProfile. This collection is the Profiles Collection. There shall exist only one instance of the Profile Collection associated to the CIM\_ComputerSystem, which, in turn, is associated to the CIM\_AdminDomain.

#### 7.1.7.1 CIM\_ConcreteCollection.ElementName

When an instance of CIM\_ConcreteCollection is the Profiles Collection, the value of the ElementName property shall be "Profiles".

#### 7.2 Base Server Profile

When the Scoping Instance of this profile conforms to the *Base Server Profile*, the requirements defined in this section apply.

## 7.2.1 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_EnabledLogicalElementCapabilities for each instance of CIM\_EnabledLogicalElementCapabilities that is instrumented for the *Base Server Profile*.

#### 7.3 Boot Control Profile

The Boot Control Profile may be implemented so that the Scoping Instance of the Boot Control Profile is the Scoping Instance of this profile. The Boot Control Profile may be implemented so that an instance of CIM\_ServiceAffectsElement associates the Scoping Instance of this profile with the Central Instance of the Boot Control Profile. When the Scoping Instance of this profile is associated with the Central Instance of the Boot Control Profile through the CIM\_ServiceAffectsElement association, the requirements defined in this section apply.

## 7.3.1 Settings Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Settings Collection and the instance of CIM\_BootConfigSetting for each instance of CIM\_BootConfigSetting that is associated with the Scoping Instance of this profile through an instance of CIM\_ElementSettingData.

## 7.4 Chassis Manager Profile

When the Scoping Instance of this profile conforms to the *Chassis Manager Profile*, the requirements defined in this section apply.

#### 7.4.1 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_EnabledLogicalElementCapabilities for each instance of CIM\_EnabledLogicalElementCapabilities that is instrumented for the *Chassis Manager Profile*.

## 7.5 CLP Service Profile

When the Scoping Instance of the *CLP Service Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

#### 7.5.1 Settings Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Settings Collection and the instance of CIM\_CLPSettingData for each instance of CIM\_CLPSettingData that is instrumented for the *CLP Service Profile*.

## 7.5.2 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_CLPCapabilities for each instance of CIM\_CLPCapabilities that is instrumented for the *CLP Service Profile*.

## 7.6 CPU Profile

When the Scoping Instance of the *CPU Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

## 7.6.1 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_EnabledLogicalElementCapabilities for each instance of CIM\_EnabledLogicalElementCapabilities that is instrumented for the *CPU Profile*.

## 7.7 Device Tray Profile

When the Scoping Instance of the *Device Tray Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

#### 7.7.1 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_EnabledLogicalElementCapabilities for each instance of CIM\_EnabledLogicalElementCapabilities that is instrumented for the *Device Tray Profile*.

#### 7.8 DHCP Client Profile

When the Scoping Instance of the *DHCP Client Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

## 7.8.1 Settings Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Settings Collection and the instance of CIM\_DHCPSettingData for each instance of CIM\_DHCPSettingData that is associated with the Central Instance of the DHCP Client Profile and is not the PartComponent reference of an instance of CIM\_OrderedComponent.

## 7.8.2 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_DHCPCapabilities for each instance of CIM\_DHCPCapabilities that is instrumented for the *DHCP Client Profile*.

## 7.9 DNS Client Profile

When the Scoping Instance of the *DNS Client Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

#### 7.9.1 Settings Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Settings Collection and the instance of CIM\_DNSSettingData for each instance of CIM\_DNSSettingData that is associated with the Central Instance of the *DNS Client Profile* and is not the PartComponent reference of an instance of CIM\_OrderedComponent.

Exactly one instance of CIM\_MemberOfCollection shall reference the Settings Collection and the instance of CIM\_DNSGeneralSettingData for each instance of CIM\_DNSGeneralSettingData that is associated with the Central Instance of the *DNS Client Profile* and is not the PartComponent reference of an instance of CIM\_OrderedComponent.

## 7.9.2 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_EnabledLogicalElementCapabilities for each instance of CIM\_EnabledLogicalElementCapabilities that is instrumented for the *DNS Client Profile*.

#### 7.10 Fan Profile

When the Scoping Instance of the *Fan Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

## 7.10.1 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_EnabledLogicalElementCapabilities for each instance of CIM\_EnabledLogicalElementCapabilities instrumented for the *Fan Profile*.

## 7.11 Software Update Profile

When the Scoping Instance of the *Software Update Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

## 7.11.1 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_SoftwareInstallationServiceCapabilities for each instance of CIM\_SoftwareInstallationServiceCapabilities that is instrumented for the *Software Update Profile*.

#### 7.12 IP Interface Profile

When the Scoping Instance of the *IP Interface Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

## 7.12.1 Settings Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Settings Collection and the instance of CIM\_StaticlPAssignmentSettingData for each instance of CIM\_StaticlPAssignmentSettingData that is associated with the Central Instance of the *IP Interface Profile* and is not the PartComponent reference of an instance of CIM\_OrderedComponent.

Exactly one instance of CIM\_MemberOfCollection shall reference the Settings Collection and the instance of CIM\_IPAssignmentSettingData for each instance of CIM\_IPAssignmentSettingData that is instrumented for the *IP Interface Profile*.

## 7.12.2 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_EnabledLogicalElementCapabilities for each instance of CIM\_EnabledLogicalElementCapabilities that is instrumented for the *IP Interface Profile*.

## 7.13 Pass-Through Module Profile

When the Scoping Instance of the *Pass-Through Module Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

#### 7.13.1 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_EnabledLogicalElementCapabilities for each instance of CIM\_EnabledLogicalElementCapabilities that is instrumented for the *Pass-Through Module Profile*.

## 7.14 Physical Asset Profile

When the Scoping Instance of the *Physical Asset Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

## 7.14.1 Capacities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capacities Collection and the instance of CIM\_ConfigurationCapacity for each instance of CIM\_ConfigurationCapacity that is instrumented for the *Physical Asset Profile*.

## 7.14.2 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_PhysicalAssetCapabilities for each instance of CIM\_PhysicalAssetCapabilities that is instrumented for the *Physical Asset Profile*.

## 7.15 Power Supply Profile

When the Scoping Instance of the *Power Supply Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

## 7.15.1 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_EnabledLogicalElementCapabilities for each instance of CIM\_EnabledLogicalElementCapabilities that is instrumented for the *Power Supply Profile*.

## 7.16 Record Log Profile

The Record Log Profile may be implemented such that the Scoping Instance of this profile is associated with the Central Instance of the Record Log Profile through the CIM\_UseOfLog association. When the Scoping Instance of this profile is associated with the Central Instance of the Record Log Profile through the CIM\_UseOfLog association, the requirements defined in this section apply.

#### 7.16.1 Logs Collection

For each instance of CIM\_RecordLog that is associated with the Scoping Instance of this profile through the CIM\_UseOfLog association, exactly one instance of CIM\_MemberOfCollection shall reference the Logs Collection and the instance of CIM\_RecordLog.

## 7.17 Role Based Authorization Profile

When the Scoping Instance of the *Role Based Authorization Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

## 7.17.1 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_PrivilegeManagementCapabilities for each instance of CIM\_PrivilegeManagementCapabilities that is instrumented for the *Role Based Authorization Profile*.

#### 7.18 Sensors Profile

When the Scoping Instance of the *Sensors Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

#### 7.18.1 Sensors Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Central Instance of the Sensors *Profile* and the Sensors Collection.

## 7.18.2 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_EnabledLogicalElementCapabilities for each instance of CIM\_EnabledLogicalElementCapabilities that is instrumented for the *Sensors Profile*.

## 7.19 Server Power State Management Profile

When the Scoping Instance of the Server Power State Management Profile is the Scoping Instance of this profile, the requirements defined in this section apply.

## 7.19.1 Capabilities Collection

For each instance of CIM\_PowerManagementCapabilities that is associated through an instance of CIM\_ElementCapabilities with an instance of CIM\_PowerManagementService, and the instance of CIM\_PowerManagementService is associated with the Scoping Instance through an instance of CIM\_HostedService, exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_PowerManagementCapabilities.

## 7.20 Shared Device Management Profile

The Shared Device Management Profile may be implemented such that the Scoping Instance of this profile is not the Scoping Instance of the Shared Device Management Profile. When an instance of CIM\_LogicalDevice is associated with the Scoping Instance of this profile and the CIM\_LogicalDevice instance is associated with the Central Instance of the Shared Device Management Profile through an instance of CIM\_ServiceAffectsElement, the requirements in this section apply.

## 7.20.1 Capabilities Collection

For each instance of CIM\_DeviceSharingCapabilities that is associated with an instance of CIM\_LogicalDevice through an instance of CIM\_ElementCapabilities, and the instance of CIM\_LogicalDevice instance is associated with the Scoping Instance of this profile, exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_DeviceSharingCapabilities.

#### 7.21 SSH Service Profile

When the Scoping Instance of the SSH Service Profile is the Scoping Instance of this profile, the requirements defined in this section apply.

#### 7.21.1 Settings Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Settings Collection and the instance of CIM\_SSHSettingData for each instance of CIM\_SSHSettingData that is instrumented for the SSH Service Profile.

## 7.21.2 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities collection and the instance of CIM\_SSHCapabilities for each instance of CIM\_SSHCapabilities that is instrumented for the SSH Service Profile.

## 7.22 System Memory Profile

When the Scoping Instance of the *System Memory Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

## 7.22.1 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_EnabledLogicalElementCapabilities for each instance of CIM\_EnabledLogicalElementCapabilities that is instrumented for the *System Memory Profile*.

#### 7.23 Telnet Service Profile

When the Scoping Instance of the *Telnet Service Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

## 7.23.1 Settings Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Settings Collection and the instance of CIM\_TelnetSettingData for each instance of CIM\_TelnetSettingData that is instrumented for the *Telnet Service Profile*.

## 7.23.2 Capabilities Collection

Exactly one instance of CIM\_MemberOfCollection shall reference the Capabilities Collection and the instance of CIM\_TelnetCapabilities for each instance of CIM\_TelnetCapabilities that is instrumented for the *Telnet Service Profile*.

#### 7.24 Text Console Redirection Profile

When the Scoping Instance of the *Text Console Redirection Profile* is the Scoping Instance of this profile, the requirements defined in this section apply.

## 7.24.1 Consoles Collection

For each instance of CIM\_TextRedirectionSAP that is associated with the Scoping Instance through an instance of CIM\_HostedAccessPoint, exactly one instance of CIM\_MemberOfCollection shall associate the instance of CIM\_TextRedirectionSAP with the Consoles Collection.

## 7.25 Profile Registration Profile

For each instance of CIM\_RegisteredProfile exactly one instance of CIM\_MemberOfCollection shall associate the instance of CIM\_RegisteredProfile with the Profiles Collection.

## 8 Methods

This section details the requirements for supporting intrinsic operations and extrinsic methods for the CIM elements defined by this profile. No extrinsic methods are defined in this profile.

## 8.1 Profile Conventions for Operations

Support for operations for each profile class (including associations) is specified in the following subclauses. Each subclause includes either the statement "All operations in the default list in section 8.1 are supported as described by <a href="DSP0200 v1.2">DSP0200 v1.2</a>" or a table listing all of the operations that are not supported by this profile or where the profile requires behavior other than that described by <a href="DSP0200 v1.2">DSP0200 v1.2</a>.

The default list of operations is as follows:

- GetInstance
- ModifyInstance
- Associators
- AssociatorNames
- References

EnumerateInstances

EnumerateInstanceNames

ReferenceNames

A compliant implementation shall support all of the operations in the default list for each class, unless the "Requirement" column states something other than *Mandatory*.

## 8.2 CIM ConcreteCollection

All operations in the default list in section 8.1 are supported as described by DSP0200 v1.2.

## 8.3 CIM MemberOfCollection

Table 2 lists operations that either have special requirements beyond those from <u>DSP0200 v1.2</u> or shall not be supported.

Operation	Requirement	Messages
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None

None

None

Table 2 – Operations: CIM\_MemberOfCollection

## 8.4 CIM\_OwningCollectionElement

Unspecified

Unspecified

Table 3 lists operations that either have special requirements beyond those from <u>DSP0200 v1.2</u> or shall not be supported.

Table 3 – Operations: CIM\_OwningCollectionElement

Operation	Requirement	Messages
Associators	Unspecified	None
AssociatorNames	Unspecified	None
References	Unspecified	None
ReferenceNames	Unspecified	None
EnumerateInstances	Unspecified	None
EnumerateInstanceNames	Unspecified	None

## 9 Use Cases

This section contains object diagrams and use cases for the SMASH Collections Profile.

## 9.1 Object Diagrams

The object diagram in Figure 2 shows how instances of CIM\_RegisteredProfile identify the version of the *SMASH Collections Profile* that the instances of CIM\_ConcreteCollection and their associated instances conform to. An instance of CIM\_RegisteredProfile exists for each profile instrumented in the system. One instance of CIM\_RegisteredProfile identifies "DMTF Base Server Profile version 1.0". The other instance identifies "DMTF SMASH Collections Profile version 1.0". The CIM\_ConcreteCollection instances are scoped to an instance of CIM\_ComputerSystem. This instance of CIM\_ComputerSystem conforms to the DMTF Base Server Profile version 1.0 as indicated by the CIM\_ElementConformsToProfile association to the CIM\_RegisteredProfile instance.

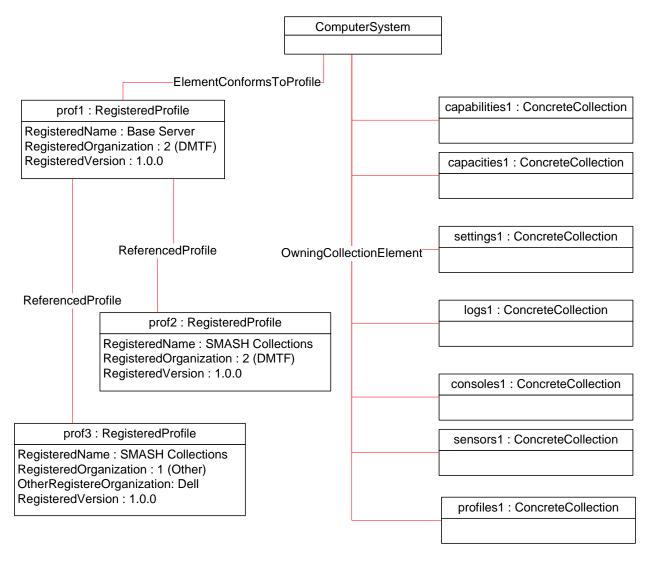


Figure 2 - Registered Profile

The object diagram in Figure 3 shows a system that supports the profile, and therefore elements are contained in the Profiles Collections. As shown in the figure, since ComputerSystem is associated with AdminDomain through the CIM\_SystemComponent association the Profiles Collection, profiles1, is associated to ComputerSystem.

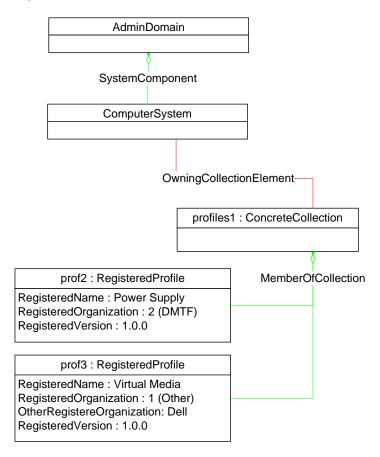


Figure 3 - Profiles Collection

The object diagram in Figure 4 shows a system that supports the profile, and therefore elements are contained in the Settings and Capabilities Collections.

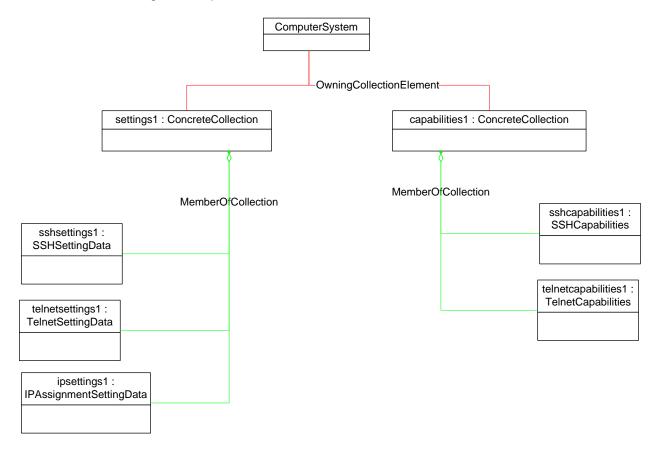


Figure 4 - Settings and Capabilities Collections

The object diagram in Figure 5 represents a system that supports the *Record Log Profile*, and therefore the Logs Collection contains an instance of CIM\_RecordLog.

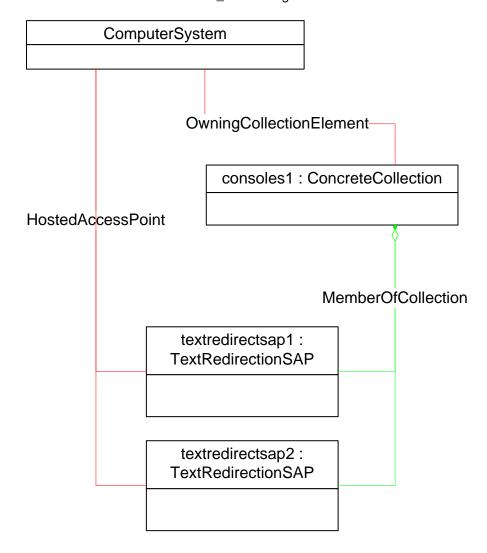


Figure 5 – Logs Collection

The object diagram in Figure 6 illustrates one possible arrangement of instances for an implementation that supports the *Text Console Redirection Profile*, and therefore has elements contained in the Consoles Collection.

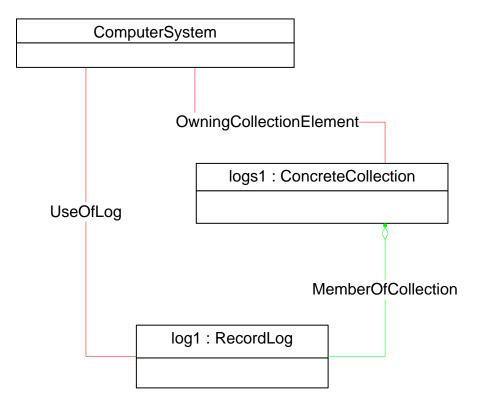


Figure 6 - Consoles Collection

## 9.2 Find All of the Capabilities for a System

A client can find all of the settings (CIM Capabilities instances) for the system as follows:

Find the instance of CIM\_ConcreteCollection that is associated with the CIM\_ComputerSystem instance through an instance of CIM\_OwningCollectionElement where the ElementName property of the CIM\_ConcreteCollection instance has a value of "Capabilities".

## 9.3 Find All of the Consoles for a System

A client can find all of the CIM TextRedirectionSAP instances hosted on the system as follows:

Find the instance of CIM\_ConcreteCollection that is associated with the CIM\_ComputerSystem instance through an instance of CIM\_OwningCollectionElement where the ElementName property of the CIM\_ConcreteCollection instance has a value of "Consoles".

## 9.4 Find All of the Logs for a System

A client can find all of the CIM RecordLog instances related to the system as follows:

Find the instance of CIM\_ConcreteCollection that is associated with the CIM\_ComputerSystem instance through an instance of CIM\_OwningCollectionElement where the ElementName property of the CIM\_ConcreteCollection instance has a value of "Logs".

## 9.5 Find All of the Settings for a System

A client can find all of the settings (CIM\_SettingData instances) for the system as follows:

Find the instance of CIM\_ConcreteCollection that is associated with the CIM\_ComputerSystem instance through an instance of CIM\_OwningCollectionElement where the ElementName property of the CIM\_ConcreteCollection instance has a value of "Settings".

## 9.6 Find All of the Configuration Capacities for a System

A client can find all of the configuration capacities (CIM\_ConfigurationCapacity instances) for the system as follows:

Find the instance of CIM\_ConcreteCollection that is associated with the CIM\_ComputerSystem instance through an instance of CIM\_OwningCollectionElement where the ElementName property of the CIM\_ConcreteCollection instance has a value of "Capacities".

## 9.7 Find All of the Sensors for a System

A client can find all of the sensors (CIM\_Sensor and CIM\_NumericSensor instances) for the system as follows:

Find the instance of CIM\_ConcreteCollection that is associated with the CIM\_ComputerSystem instance through an instance of CIM\_OwningCollectionElement where the ElementName property of the CIM\_ConcreteCollection instance has a value of "Sensors".

## 9.8 Find All of the Sensors for a System

A client can find all of the profiles (CIM RegisteredProfile instances) for the system as follows:

Find the instance of CIM\_ConcreteCollection that is associated with the CIM\_ComputerSystem instance through an instance of CIM\_OwningCollectionElement where the ElementName property of the CIM\_ConcreteCollection instance has a value of "Profiles". Find all the associated instances of CIM\_RegisteredProfile.

#### 10 CIM Elements

Table 4 shows the instances of CIM Elements for this profile. Instances of the CIM Elements shall be implemented as described in Table 4. Sections 7 ("Implementation") and 8 ("Methods") may impose additional requirements on these elements.

Table 4 - CIM Elements: SMASH Collections Profile

Element Name	Requirement	Description		
Classes				
CIM_ConcreteCollection	Mandatory	See section 10.1.		
CIM_MemberOfCollection	Conditional	See section 10.2.		
CIM_OwningCollectionElement	Mandatory	See section 10.3.		
Indications				
None defined in this profile				

## 10.1 CIM ConcreteCollection

CIM\_ConcreteCollection instances are used to aggregate instances of CIM\_ManagedElement. Table 5 provides information about the properties of CIM\_ConcreteCollection.

Table 5 - Class: CIM\_ConcreteCollection

Properties	Requirement	Notes
InstanceID	Mandatory	None
ElementName	Mandatory	See section 7.1.

#### 10.2 CIM MemberOfCollection

CIM\_MemberOfCollection is used to associate CIM\_ManagedElement (CIM\_SettingData, CIM\_Capabilities, CIM\_RecordLog) instances with the appropriate instance of CIM\_ConcreteCollection. Table 6 provides information about the properties of CIM\_MemberOfCollection.

Table 6 - Class: CIM\_MemberOfCollection

Properties	Requirement	Notes
GroupComponent	Mandatory	The value of this property shall be an instance of CIM_ConcreteCollection.
PartComponent	Mandatory	See sections 7.2 through 7.24.

## 10.3 CIM\_OwningCollectionElement

CIM\_OwningCollectionElement is used to associate a CIM\_ConcreteCollection instance with its scoping CIM\_ComputerSystem instance. Table 7 provides information about the properties of CIM\_OwningCollectionElement.

Table 7 - Class: CIM\_OwningCollectionElement

Properties	Requirement	Notes
OwningElement	Mandatory	The value of this property shall be the Scoping Instance of this profile.
OwnedElement	Mandatory	The value of this property shall be an instance of CIM_ConcreteCollection.

## 10.4 CIM\_RegisteredProfile

The CIM\_RegisteredProfile class is defined by the Profile Registration Profile. The requirements denoted in Table 8 are in addition to those mandated by the Profile Registration Profile.

Table 8 - Class: CIM\_RegisteredProfile

Properties	Requirement	Description
RegisteredName	Mandatory	This property shall have a value of "SMASH Collections".
RegisteredVersion	Mandatory	This property shall have a value of "1.0.0".
RegisteredOrganization	Mandatory	This property shall have a value of 1 (Other).
OtherRegisteredOrganization	Mandatory	This property shall match "DCIM"

# ANNEX A (Informative)

# **Change Log**

Version	Date	Description

# ANNEX B (informative)

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