Management Initiative Registration Profile
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Foreword

This document was prepared by the DMTF Architecture Working Group

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Introduction

This document defines the CIM model for advertising and discovering conformance of an implementation to one or more management initiatives. The information in this document is intended to be sufficient for a provider or consumer of this data to identify unambiguously the classes, properties, methods, and values that need to be instantiated and manipulated.

The target audience for this specification is implementers who are writing CIM-based providers or consumers of management interfaces that represent the components described in this document.

Document conventions

Typographical conventions

The following typographical conventions are used in this document:

- Document titles are marked in *italics*.
- Important terms that are used for the first time are marked in *italics*.
- Terms include a link to the term definition in the "Terms and definitions" clause, enabling easy navigation to the term definition.

OCL usage conventions

Constraints in this document are specified using OCL (see [OCL 2.0](#)).

OCL statements are in monospaced font.
Management Initiative Registration Profile

1 Scope

The Management Initiative Registration profile is an autonomous profile that provides for advertising and discovering conformance of an implementation to management initiatives, and optionally to the management profiles of the advertised initiatives.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated or versioned references, only the edition cited (including any corrigenda or DMTF update versions) applies. For references without a date or version, the latest published edition of the referenced document (including any corrigenda or DMTF update versions) applies.

DMTF DSP1033, Profile Registration Profile 1.1, http://www.dmtf.org/standards/published_documents/DSP1033_1.1.pdf
OMG formal/06-05-01, Object Constraint Language 2.0, http://www.omg.org/spec/OCL/2.0/

3 Terms and definitions

In this document, some terms have a specific meaning beyond the normal English meaning. Those terms are defined in this clause.

3.1 General

The terms "shall" ("required"), "shall not", "should" ("recommended"), "should not" ("not recommended"), "may", "need not" ("not required"), "can" and "cannot" in this document are to be interpreted as described in ISO/IEC Directives, Part 2, Annex H. The terms in parenthesis are alternatives for the preceding term, for use in exceptional cases when the preceding term cannot be used for linguistic reasons. Note that ISO/IEC Directives, Part 2, Annex H specifies additional alternatives. Occurrences of such additional alternatives shall be interpreted in their normal English meaning in this document.

The terms "clause", "subclause", "paragraph", "annex" in this document are to be interpreted as described in ISO/IEC Directives, Part 2, Clause 5.
The terms "normative" and "informative" in this document are to be interpreted as described in ISO/IEC Directives, Part2, Clause 3. In this document, clauses, subclauses or annexes indicated with "(informative)" as well as notes and examples do not contain normative content.

The terms defined in DSP0004, DSP0223, and DSP1001 apply to this document.

The following additional terms are defined in this document.

3.2 initiative, management initiative
A named and versioned amount of management functionality with conformance requirements. The conformance requirements for implementing a management initiative are described in an initiative specification, based on management profiles and other specifications. Initiatives may be defined by DMTF, other standards organizations, or vendors.

3.3 initiative specification
A specification defining conformance requirements for implementing an initiative. Also called "initiative wrapper specification".

3.4 implementation namespace
A CIM namespace for the main part of the implementation, as defined in DSP1033.

3.5 interop namespace
A CIM namespace for interoperability, as defined in DSP1033.

3.6 profile
A management profile, as defined in DSP1001.

4 Symbols and abbreviated terms
The abbreviations defined in DSP0004, DSP0223, and DSP1001 apply to this document.
This document does not define any additional abbreviations.

5 Synopsis
Profile name: Management Initiative Registration
Version: 1.0.0
Organization: DMTF
Abstract: No
Profile type: Autonomous
Schema: DMTF CIM 2.37
Central class adaptation: RegisteredInitiative
Scoping class adaptation: RegisteredInitiative
The Management Initiative Registration profile is an autonomous profile that provides for advertising and discovering conformance of an implementation to management initiatives, and optionally to the management profiles of the advertised initiatives.

Table 1 identifies the profile references defined in this profile.

<table>
<thead>
<tr>
<th>Profile reference name</th>
<th>Profile name</th>
<th>Organization</th>
<th>Version</th>
<th>Relationship</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRP</td>
<td>Profile Registration</td>
<td>DMTF</td>
<td>1.1</td>
<td>Mandatory</td>
<td>Used to advertise conformance of the implementation to this profile.</td>
</tr>
<tr>
<td>InitiativePRP</td>
<td>Profile Registration</td>
<td>DMTF</td>
<td>1.1</td>
<td>Mandatory</td>
<td>Used to advertise conformance of the implementation to the management profiles of advertised management initiatives.</td>
</tr>
</tbody>
</table>

Table 2 identifies the features defined in this profile.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>InitiativeProfiles</td>
<td>Optional</td>
<td>See 7.1.1.</td>
</tr>
</tbody>
</table>

Table 3 identifies the class adaptations defined in this profile.

<table>
<thead>
<tr>
<th>Adaptation</th>
<th>Elements</th>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instantiated, embedded and abstract adaptations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RegisteredProfile</td>
<td>CIM_RegisteredProfile</td>
<td>Mandatory</td>
<td>See 7.2.2.</td>
</tr>
<tr>
<td>RegisteredInitiative</td>
<td>CIM_RegisteredSpecification</td>
<td>Mandatory</td>
<td>See 7.2.3.</td>
</tr>
<tr>
<td>InitiativeProfile</td>
<td>CIM_RegisteredProfile</td>
<td>Conditional</td>
<td>See 7.2.4.</td>
</tr>
<tr>
<td>ReferencedInitiativeProfile</td>
<td>CIM_ReferencedSpecification</td>
<td>Conditional</td>
<td>See 7.2.5.</td>
</tr>
</tbody>
</table>

Indications and exceptions

This profile does not define any such adaptations.

Table 4 identifies the use cases and state descriptions defined in this profile.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use case: DetermineAllInitiatives</td>
<td>See 8.2.</td>
</tr>
<tr>
<td>Use case: DetermineInitiativesOfProfile</td>
<td>See 8.3.</td>
</tr>
<tr>
<td>Use case: DetermineProfilesOfInitiative</td>
<td>See 8.4.</td>
</tr>
</tbody>
</table>
6 Description

The DMTF class adaptation diagram in Figure 1 shows all class usages (adaptations) defined in this profile, and relevant class adaptations from referenced profiles. Adaptation names are shown in parenthesis if they differ from the class names without schema prefix.

The RegisteredInitiative class adaptation is the central (and scoping) element of this profile; its instances represent management initiatives to which implementations conform.

If the InitiativeProfiles feature is implemented for an initiative, the profiles implemented in context of that initiative are represented by InitiativeProfile instances associated through ReferencedInitiativeProfile. The InitiativeProfile instances are implemented as part of the profile they represent.

Conformance to this profile is advertised using the Profile Registration profile (referenced as PRP); that is, via the RegisteredProfile instance.
7 Implementation

7.1 Features

7.1.1 Feature: InitiativeProfiles

Requirement level: Optional

Implementing this feature for an advertised management initiative provides support for representing the management profiles of that initiative.

This feature can be made available to clients at the granularity of RegisteredInitiative instances.

It can be concluded that the feature is available for a RegisteredInitiative instance if:

• The following OCL derivation constraint evaluates to a Boolean value of True.

OCL context: A RegisteredInitiative instance.

self.ReferencedInitiativeProfile::Antecedent->size() > 0

Explanation:
There is at least one ReferencedInitiativeProfile instance referencing the RegisteredInitiative instance representing the advertised management initiative.

Otherwise, it can be concluded that the feature is not available.

7.2 Adoptions

7.2.1 Conventions

This profile defines operation requirements based on DSP0223.

For adaptations of ordinary classes and of associations, the requirements for operations are defined in adaptation-specific subclauses of subclause 7.2.

For association traversal operation requirements that are specified only in the elements table of an adaptation (i.e., without operation-specific subclauses), the names of the association adaptations to be traversed are listed in the elements table.

The default initialization requirement level for property requirements is optional.

The default modification requirement level for property requirements is optional.

This profile repeats the effective values of certain Boolean qualifiers as part of property, method parameter, or method return value requirements. The following convention is established: If the name of a qualifier is listed, its effective value is True; if the qualifier name is not listed, its effective value is False.

The convention is applied in the following cases:

• In: indicates that the parameter is an input parameter
• Out: indicates that the parameter is an output parameter
• Key: indicates that the property is a key (that is, its value is part of the instance path)
• Required: indicates that the element value shall be non-Null
• Null OK: indicates explicitly that the element value may be Null for mandatory, conditional or conditional exclusive properties. This information is not specified as a qualifier in the schema but as an indicator in the profile.
7.2.2 Adaptation: RegisteredProfile: CIM_RegisteredProfile

7.2.2.1 General

Adaptation type: Ordinary class
Implementation type: Instantiated
Requirement level: Mandatory

This adaptation models the advertisement of conformance to this profile.
Profiles derived from this profile that have a need to advertise conformance to the derived profile, should define an adaptation derived from PRP::RegisteredProfile for this purpose.

<table>
<thead>
<tr>
<th>Element</th>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base adaptations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRP::RegisteredProfile</td>
<td>Mandatory</td>
<td>See PRP::RegisteredProfile.</td>
</tr>
<tr>
<td>Properties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RegisteredName</td>
<td>Mandatory</td>
<td>Required, see 7.2.2.2</td>
</tr>
<tr>
<td>RegisteredOrganization</td>
<td>Mandatory</td>
<td>Required, see 7.2.2.3</td>
</tr>
<tr>
<td>RegisteredVersion</td>
<td>Mandatory</td>
<td>Required, see 7.2.2.4</td>
</tr>
</tbody>
</table>

7.2.2.2 Property: RegisteredName

Requirement level: Mandatory

Constraint:

OCL constraint in the context of a RegisteredProfile instance:

```
inv: self.RegisteredName = 'Management Initiative Registration'
```

7.2.2.3 Property: RegisteredOrganization

Requirement level: Mandatory

Constraint:

OCL constraint in the context of a RegisteredProfile instance:

```
inv: self.RegisteredOrganization = 2 /* DMTF */
```

7.2.2.4 Property: RegisteredVersion

Requirement level: Mandatory

Constraint:

OCL constraint in the context of a RegisteredProfile instance:

```
inv: self.RegisteredVersion = '1.0.0'
```
7.2.3 Adaptation: RegisteredInitiative: CIM_RegisteredSpecification

7.2.3.1 General

Adaptation type: Ordinary class
Implementation type: Instantiated
Requirement level: Mandatory

This adaptation models management initiatives to which this implementation conforms; each such initiative shall have an initiative specification describing it.

This adaptation shall be exposed in the interop namespace of the WBEM server that implements the initiative.

Table 6 – RegisteredInitiative: Element requirements

<table>
<thead>
<tr>
<th>Element</th>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceID</td>
<td>Mandatory</td>
<td>Key</td>
</tr>
<tr>
<td>SpecificationType</td>
<td>Mandatory</td>
<td>See 7.2.3.2</td>
</tr>
<tr>
<td>RegisteredOrganization</td>
<td>Mandatory</td>
<td>Required, see 7.2.3.3</td>
</tr>
<tr>
<td>RegisteredName</td>
<td>Mandatory</td>
<td>Required, see 7.2.3.4</td>
</tr>
<tr>
<td>RegisteredVersion</td>
<td>Mandatory</td>
<td>Required, see 7.2.3.5</td>
</tr>
<tr>
<td>AdvertiseTypes</td>
<td>Mandatory</td>
<td>Required</td>
</tr>
<tr>
<td>AdvertiseTypeDescriptions</td>
<td>Conditional</td>
<td>See 7.2.3.6</td>
</tr>
</tbody>
</table>

7.2.3.2 Property: SpecificationType

Requirement level: Mandatory

Constraint:

OCL constraint in the context of a RegisteredInitiative instance:

inv: self.SpecificationType = 3 /* Initiative Wrapper */

Explanation:

This property shall have a value of 3 (Initiative Wrapper), indicating that the instance represents an initiative specification.
7.2.3.3 Property: RegisteredOrganization

Requirement level: Mandatory

The value of this property shall be the organization owning the initiative specification of the initiative represented by an instance of this adaptation.

7.2.3.4 Property: RegisteredName

Requirement level: Mandatory

The value of this property shall be the name of the initiative as defined in the initiative specification of the initiative represented by an instance of this adaptation.

7.2.3.5 Property: RegisteredVersion

Requirement level: Mandatory

The value of this property shall be the version of the initiative specification of the initiative represented by an instance of this adaptation.

7.2.3.6 Property: AdvertiseTypeDescriptions

Requirement level: Conditional

Condition:

The following OCL statement evaluates to true in the context of a RegisteredInitiative instance:

```
self.AdvertiseTypes->exists( value | value = 1 /* Other */ )
```

Constraint:

OCL constraint in the context of a RegisteredInitiative instance:

```
inv: if self.AdvertiseTypes->size() > 0
    then Sequence { 0 .. self.AdvertiseTypes->size() - 1 }->
       forAll( i |
            self.AdvertiseTypes.at(i) = 1 /* Other */
            implies self.AdvertiseTypeDescriptions.at(i) != null
       )
```

Explanation:

For each array entry of AdvertiseTypes that has a value of 1 (Other), the corresponding array entry of AdvertiseTypeDescriptions shall be non-Null.

Note that this constraint leaves the value of array entries of AdvertiseTypeDescriptions undefined, including the possibility of being Null or not present (after any non-Null array entries). As a result, if no array entry of AdvertiseTypes has a value of 1 (Other), the AdvertiseTypeDescriptions property is entirely undefined, including the possibility of it being Null.

7.2.4 Adaptation: InitiativeProfile: CIM_RegistedProfile

This adaptation models profiles to which an implementation conforms and that are referenced in the initiative specification of a management initiative.

Adaptation type: Ordinary class

Implementation type: Instantiated
Requirement level: Conditional

Condition:
The InitiativeProfiles feature is implemented.

<table>
<thead>
<tr>
<th>Element</th>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>InitiativePRP::RegisteredProfile</td>
<td>Mandatory</td>
<td>See InitiativePRP::RegisteredProfile.</td>
</tr>
</tbody>
</table>

**Table 7 – InitiativeProfile: Element requirements**

7.2.5 Adaptation: ReferencedInitiativeProfile: CIM_ReferencedSpecification

7.2.5.1 General

Adaptation type: Association class

Implementation type: Instantiated

Requirement level: Conditional

Condition:
The InitiativeProfiles feature is implemented.

This adaptation models the relationship between management initiatives represented by RegisteredInitiative instances and the management profiles implemented in context of these initiatives that are represented by InitiativeProfile instances.

This adaptation shall be exposed in the interop namespace of the WBEM server that implements the initiative.

<table>
<thead>
<tr>
<th>Element</th>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antecedent</td>
<td>Mandatory</td>
<td>Key, see 7.2.5.2</td>
</tr>
<tr>
<td>Dependent</td>
<td>Mandatory</td>
<td>Key, see 7.2.5.3</td>
</tr>
</tbody>
</table>

**Table 8 – ReferencedInitiativeProfile: Element requirements**

7.2.5.2 Property: Antecedent

Requirement level: Mandatory

Reference kind: REF-typed
Constraint:
Referenced instances shall be of class adaptation InitiativeProfile.
The multiplicity of this association end is 0 .. *

7.2.5.3 Property: Dependent

Requirement level: Mandatory
Reference kind: REF-typed

Constraint:
Referenced instances shall be of class adaptation RegisteredInitiative.
The multiplicity of this association end is 0 .. *

8 Use cases and state descriptions

8.1 State description: SimpleObjectDiagram

The object diagram in Figure 2 shows a conformant implementation of this profile, with one management initiative and two profiles advertised as conformant to the initiative, implementing the InitiativeProfiles feature.

Figure 2 – Simple object diagram

The myini instance represents that the implementation conforms to the "MyInitiative" management initiative, version 1.0.0.
The two profiles that have been implemented in context of that initiative are represented by the ip1 and ip2 instances. Because the InitiativeProfiles feature has been implemented, the ip1 and ip2 instances are associated with the myini instance via ReferencedInitiativeProfile association instances.

Conformance of the implementation to this profile is indicated by the mirp instance, using the mechanisms described in DSP1033. Because this profile is an autonomous profile, the central and scoping path methodologies fall together and a client can always expect a CIM_ElementConformsToProfile association to exist between the central instances of CIM.RegisteredSpecification and the mirp instance representing this profile.

An initiative such as SMI-S, SMASH, DASH, or VMAN would be represented such that the myini instance in Figure 2 represents that initiative, showing its owning organization, name and version. If the InitiativeProfiles feature has been implemented, the set of profiles implemented under that initiative would be represented similarly to the ip1 and ip2 instances.

8.2 Use case: DetermineAllInitiatives

Determine all management initiatives to which the implementation conforms, and their versions.

This use case has the following preconditions:

- The interop namespace of the WBEM server is known.

The main flow for this use case consists of the following step:

1. Enumerate CIM_RegisteredSpecification instances in the interop namespace of the WBEM server, restricting the result set to instances where SpecificationType = 3 (Initiative Wrapper).

The resulting instances conform to the RegisteredInitiative adaptation and represent all initiatives to which the implementation (on the WBEM server) conforms. The RegisteredName and RegisteredVersion properties of the returned CIM_RegisteredSpecification instances identify name and version of the management initiative.

Note that there may be initiatives implemented in the WBEM server for which this profile was not implemented. Such initiatives would not be represented in the result set of this use case.

8.3 Use case: DetermineInitiativesOfProfile

Determine to which management initiatives a given implemented profile belongs.

This use case has the following preconditions:

- The InitiativeProfiles feature is implemented for the initiatives in question.
- The CIM_RegisteredProfile instance representing the given implemented profile is known.

The main flow for this use case consists of the following step:

1. From the given CIM_RegisteredProfile instance, traverse the CIM_ReferencedSpecification association, restricting the associated instances to those of class CIM_RegisteredSpecification where SpecificationType = 3 (Initiative Wrapper).

The resulting CIM_RegisteredSpecification instances conform to the RegisteredInitiative adaptation and represent the initiatives to which the given profile belongs.

Note that there may be initiatives to which the given profile belongs but for which this profile or the InitiativeProfiles feature was not implemented. Such initiatives would not be represented in the result set of this use case.
8.4 Use case: DetermineProfilesOfInitiative

Determine to which profiles of a given implemented initiative the implementation conforms.

This use case has the following preconditions:

- The InitiativeProfiles feature is implemented for the given initiative.
- The CIM_RegisteredSpecification instance representing the given initiative is known.

The main flow for this use case consists of the following step:

1. From the given CIM_RegisteredSpecification instance, traverse the CIM_ReferencedSpecification association, restricting the associated instances to those of class CIM_RegisteredProfile.

The resulting CIM_RegisteredProfile instances conform to the InitiativeProfile adaptation and represent the profiles that advertise conformance to the given initiative.

Note that there may be profiles that belong to the given initiative but for which the InitiativeProfiles feature was not implemented. Such profiles would not be part of the result set of this use case.
### Change log

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0.0</td>
<td>2014-05-22</td>
<td></td>
</tr>
</tbody>
</table>