Solution Deployment Descriptor Starter Profile Version 1.0

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Abstract:
This expository document provides non-normative information to supplement the Solution Deployment Descriptor (SDD) specification and serves as a companion guide for the SDD Starter Profile Schema.

Status:
This document was last revised or approved by the Solution Deployment Descriptor (SDD) Technical Committee on the above date. The level of approval is also listed above. Check the "Latest Version" or "Latest Approved Version" location noted above for possible later revisions of this document.

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1 Introduction

The *Solution Deployment Descriptor* (SDD) *Starter Profile* supplements the current specification **[SDD]** and associated schema **[SDD_Schema]**. The intent is to capture the knowledge of the SDD community to promote interoperability.

- This Starter Profile exploits and extends CIM models as necessary. Other profiles might use other resource models.
- All profiles are non-normative.

Ontology is a data model that represents a set of concepts within a domain and the relationships between those concepts. It is used to *reason* about the objects within that domain.

An informal ontology may be specified by a catalog of types that are either undefined or defined only by statements in a *natural language.* An informal ontology may be specified by a collection of names for concept and relation types organized in a *partial ordering* by the type-subtype relation.

The Starter Profile presented here along with associated information presented here constitute an *informal ontology* that leverages natural language, partial ordering and provides a means of reasoning about objects within the domain.

Profiles provide the mechanism for communicating which *resource types* an implementation supports and on which a particular SDD depends. A core assumption is that an understanding of specific resource types and resource characteristics is *shared* by the deployment descriptor author (SDD producer) and the deployment environment (SDD consumer).

For example, if an SDD author declares a resource type for a particular operating system, deployment software operating on that SDD needs to understand how to discover operating systems of that type to honor the SDD author's intent when deploying that SDD. Moreover, the SDD producer and SDD consumer need to agree on the common vocabulary for expressing that particular operating system and resource type.

SDD producers and consumers should strive for interoperability in implementations. Profiles are intended to aid interoperability between implementations in support of the SDD standard. Profiles do not guarantee interoperability, however.

1.1 Terminology

Classes as used in this document refer to type of a resource for which most are defined by DMTF's Common Information Model **[CIM]**. Consumers and producers that implement profiles are encouraged to use a terminology appropriate to map the profile to the resource model referenced and/or extended. Resources, properties, constraints and other attributes associated with resources are used in the context of SDD v1.0. For definition of these terms in the context of SDD v1.0, refer to the SDD v1.0 specification **[SDD]** and the SDD v1.0 schema **[SDD_Schema]**.

1.2 Purpose

The purpose of this document is to specify and describe accepted starter profile terms, definitions and the context in which the terms and definitions have meaning. The Starter Profile serves as an example from which other profiles may be constructed.

1.3 Scope

The scope of this document is the definition of a Starter Profile that is associated with the SDD v1.0 specification. Resource types documented herein are for illustrative purposes only. The Starter Profile serves only to provide the list of commonly used resources that software engineers may use when creating SDDs. The profile is not meant to document all possible resource types or relationships among those resources, although common relationships, such as a connect relationship, may be explicitly expressed within the profile.

Runtime implementations to process SDDs should take into account profiles and differing resource models that may be expressed within a profile. Implementers should consider how resources defined in a profile will be discovered, managed, operated on, and so on by a runtime.

1.4 Audience

This document is intended to assist the community of SDD producers and consumers.

1.5 Motivation

The motivation for producing this document is to promote interoperability and to engage the greater SDD technical community in the *production and consumption* of the SDD specification.

1.6 Requirements

The Starter Profile is to provide a first reference source for producers of SDDs.

1.7 Notational Conventions

This document contains cross-references. Such references appear as the referenced section number inside square brackets, for example, [4.5]. In electronic versions of this specification, the cross-references can act as links to the target section.

1.8 Normative References

[SDD] OASIS, Solution Deployment Descriptor Specification v1.0, http://docs.oasis-open.org/sdd/v1.0/pr01/sdd-spec-v1.0-pr01-r01.doc.

[SDD_Schema] OASIS, Solution Deployment Descriptor Specification v1.0, Full Schema, http://docs.oasis-open.org/sdd/v1.0/pr01/FullSchema/.

1.10 Non-Normative References

[CIM] Distributed Management Task Force, Inc., Common Information Model (CIM) http://www.dmtf.org/standards/cim/.

[SDDEX] Solution Deployment Descriptor Examples, http://docs.oasis-open.org/sdd/v1.0/pr01/expository/sdd-examples-v1.0-cd01.zip.

[SDDP] Solution Deployment Descriptor Primer, http://docs.oasis-open.org/sdd/v1.0/pr01/expository/sdd-primer-v1.0-cd01.doc.

[SDDSPS] Solution Deployment Descriptor Starter Profile Schema, http://docs.oasis-open.org/sdd/v1.0/pr01/expository/cd01-sdd-starter-profile-v1.0.xsd.

2 Starter Profile

Classes defined and referenced in the Starter Profile serve as an aid to SDD authors for defining values for well known resource types. Potential uses of the classes defined herein are for specifying *ResourceType*, *PropertyConstraint*, *ConsumptionConstraint* and other elements and attributes of an SDD. For illustrations of how to use values defined in this Starter Profile, refer to the SDD examples **[SDDEX]** and SDD Primer **[SDDP]**.

This Starter Profile is:

- Based on the CIMv2.1.5 model and associated classes **[CIM]**
- Based on plausible extensions to CIM
- A set of declarations based on the needs of the SDD specification

Other profiles could be based on other models.

The classes and attributes for the Starter Profile are defined in Appendix A. A schema representation of the Starter Profile is also available; see **[SDDSPS]**.

2.1 Profile Usage

The OASIS SDD TC does not formally govern the production of profiles. The OASIS SDD TC does, however, recommend certain guidelines for producing profiles. These guidelines include:

- Before creating new profiles, search for existing profiles that meet implementation needs. The OASIS SDD TC will maintain pointers to well known and frequently used profiles when the TC is made aware of these.
- Where applicable to implementation requirements, extend existing profiles before creating new ones. For example, if the Starter Profile published here lacks a class needed for the implementation, a simple extension to this Starter Profile is preferred over creating a new profile. An extension to a profile is an additional profile that defines the additional types and values needed. Consumers and producers would refer to both the Starter Profile and the profile that extends it. Consumers and producers can use and support any number of profiles.
- If implementation requirements are not met by using or extending an existing profile, a new profile should be created. The OASIS SDD TC recommends publishing the new profile into a namespace. The OASIS SDD TC may also be contacted for awareness of the new profile.

The OASIS SDD TC does not govern consumption of profiles. The OASIS SDD TC does, however, recommend certain guidelines for consumers of profiles. These guidelines include:

- Consumers of profiles should explicitly state which profile(s) is (are) supported.
- Implementations of SDD consumption tools, such as deployment runtime software, should allow for extensions of the supported profiles. SDD tools that do not allow for extension and are tightly coupled with a single profile or collection of profiles may not be viable as new resource models emerge. Tools that allow for extension are preferred.

SDD producers should compare profile needs with published profiles supported by SDD tools. For a producer to use a consumer tool, the producer's profile must match a subset of the consumer's profile. If it does not, producers should, where possible, extend the consuming tool or determine if another tool that supports the profile is available.

The OASIS SDD TC will maintain pointers to well known and frequently used tools that correspond to well known and frequently used profiles when the TC is made aware of these.

SDD producers should use the following recommended best practices to create a new profile or extend an existing profile:

1. When extending an existing profile, such as the Starter Profile, include namespace references to the profile that is extended as well as the additional (extended) profile(s).
2. Producers should not copy content from an existing profile to include in a new profile.
    a. The existing profile(s) that contains the desired content should be referenced via namespace in the SDD, rather than being copied into a new profile.
    b. The new (extended) profile should contain just the extensions to the profile that is extended.
3. If no profile exists that meets the requirements of the SDD producer, and extending an existing profile does not meet those requirements, then a new profile may be created.
    a. The new profile should be a schema document and referenced via namespace in the SDD in the same manner as an existing profile is referenced. The Starter Profile schema can be used as a model or example for the new profile.
    b. When an SDD producer creates a new profile, the producer's profile must match a subset of some consumer's profile to be useful. This might be accomplished by producing new deployment runtime software or extending an existing runtime to process the resources defined in the new profile

SDD consumers should provide for interoperability by allowing extensions to the consumer software. The OASIS SDD TC recommends the following best practices for consumers of SDD and profile documents.

1. SDD consumers can achieve this extensibility by using a framework/plug-in implementation model (or equivalent) such that if an SDD producer has a need to extend a profile, then the producer or other party can provide plug-in code to extend the runtime software to add capabilities to process resources defined in the extended profile.
2. In addition to allowing for extension of the runtime software to process newly defined resources within a particular hosting environment, runtime implementations also should allow for extension of hosting environments.
    - For example, if an SDD runtime implementation supports only Windows™ [1], then the runtime software should allow extensions to add support for other hosting environments, such as Linux® [2], similar to the model described for extensions to process new resource types.

The OASIS SDD TC recommends that producers and consumers strive to promote interoperability as SDDs and software are developed according to the SDD v1.0 specification.

[1] Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

[2] Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.

A. Starter Profile Classes and Attributes

Class Name	Description
CIM_OperatingSystem	CIMv2.15 CIM_OperatingSystem
CIM_Processor	CIMv2.15 CIM_Processor
CIM_FileSystem	CIMv2.15 CIM_FileSystem
CIM_Directory	CIMv2.15 CIM_Directory
CIM_LogicalFile	CIMv2.15 CIM_LogicalFile
CIM_InstalledProduct	CIMv2.15 CIM_InstalledProduct
CIM_ApplicationSystem	CIMv2.15 CIM_ApplicationSystem
CIM_J2eeServer	CIMv2.15 CIM_J2eeServer
CIM_J2eeServlet	CIMv2.15 CIM_J2eeServlet
CIM_J2eeApplication	CIMv2.15 CIM_J2eeApplication
CIM_DatabaseSystem	CIMv2.15 CIM_DatabaseSystem
CIM_ConnectedTo	CIMv2.15 CIM_ConnectedTo
ArtifactEnumeration	Enumeration of valid artifact types in SDDv1.0

Note: Valid values as defined below are case insensitive.

CIM_OperatingSystem

Class Reference

Source: CIMv2.15 CIM_OperatingSystem
Consumes Artifacts: SDD, TargetResourceRef, ArtifactType
Hosts: CIM_FileSystem, CIM_InstalledProduct, CIM_Application, CIM_J2eeServer, CIM_DatabaseSystem
Completion Actions: Restart, Logout
SDD Usage: Resource.type, requiredBase

Attributes

OSType

Source: CIMv2.15 CIM_OperatingSystem.OSType
SDD Usage: PropertyConstraint
Valid Values: AIX, FreeBSD, HPUX, LINUX, MACOS, OpenVMS, Solaris, Windows 2000, Microsoft Windows Server 2003 , Windows XP, Windows Vista, z/OS, OS/390, other

Version

Source: CIMv2.15 CIM_OperatingSystem.Version
SDD Usage: PropertyConstraint
Valid Values: Strings of form x.y.z where x, y, and z are numeric

CIM_Processor

Class Reference
Source: CIMv2.15 `CIM_Processor`
Consumes Artifacts: N/A
Hosts: N/A
Completion Actions: N/A
SDD Usage: `Resource.type`

Attributes
Type
Source: CIMv2.15 `CIM_Processor.Type`
SDD Usage: `PropertyConstraint`
Valid Values: `Pentium(R) brand, Pentium(R) II Xeon(TM), Intel(R) Itanium(R) 2, AMD Athlon(TM) Processor Family, MD Athlon(TM) 64 Processor Family, PA-RISC Family, SPARC Family, AS400 Family, Power PC Family, Alpha Family, S/390 and zSeries Family, other`

CIM_FileSystem
Class Reference
Source: CIMv2.15 `CIM_FileSystem`
Consumes Artifacts: N/A
Hosts: `CIM_Directory`
Completion Actions: N/A
SDD Usage: `Resource`.type

Attributes
`Name`
Source: CIMv2.15 `CIM_FileSystem.Name`
SDD Usage: `Name`
Valid Values: `String`
`Root`
Source: CIMv2.15 `CIM_FileSystem.Root`
SDD Usage: `PropertyConstraint`
Valid Values: `/usr, c:\, d:\ , other`
`AvailableSpace`
Source: CIMv2.15 `CIM_FileSystem.AvailableSpace`
SDD Usage: `ConsumptionConstraint`
Valid Values: Values are *numbers* and *units of measure. Default is total number of free space for filesystem in bytes.*
`Type`
Source: CIMv2.15 `CIM_FileSystem.FileSystemType`
SDD Usage: `PropertyConstraint`
Valid Values: `JFS, NTFS, FAT32, zFS_z/OS, zFS_Solaris, other`
`ReadOnly`
Source: CIMv2.15 `CIM_FileSystem.ReadOnly`
SDD Usage: `PropertyConstraint`
Valid Values: `True, False`

CIM_Directory
Class Reference
Source: CIMv2.15 `CIM_Directory`
Consumes Artifacts: N/A
Hosts: `CIM_LogicalFile`
Completion Actions: N/A
SDD Usage: Resource.type

Attributes

Name

Source: CIMv2.15 CIM_LogicalFile.Name

SDD Usage: Name

Valid Values: String

Readable

Source: CIMv2.15 CIM_LogicalFile.Readable

SDD Usage: PropertyConstraint

Valid Values: True, False

Writeable

Source: CIMv2.15 CIM_LogicalFile.Writeable

SDD Usage: PropertyConstraint

Valid Values: True, False

CIM_LogicalFile

Class Reference

Source: CIMv2.15 CIM_Directory

Consumes Artifacts: N/A

Hosts: N/A

Completion Actions: N/A

SDD Usage: Resource.type

Attributes

Name

Source: CIMv2.15 CIM_LogicalFile.Name

SDD Usage: Name

Valid Values: String

Readable

Source: CIMv2.15 CIM_LogicalFile.Readable

SDD Usage: PropertyConstraint

Valid Values: True, False

Writeable

Source: CIMv2.15 CIM_LogicalFile.Writeable

SDD Usage: PropertyConstraint

Valid Values: True, False

Executable

Source: CIMv2.15 CIM_LogicalFile.Executable

SDD Usage: PropertyConstraint

Valid Values: True, False

CIM_InstalledProduct

Class Reference

Source: CIMv2.15 CIM_InstalledProduct

Consumes Artifacts: N/A

Hosts: N/A

Completion Actions: N/A

SDD Usage: Resource.type

Attributes

Name

Source: CIMv2.15 CIM_Product.Name

SDD Usage: Name

Valid Values: String

Vendor

Source: CIMv2.15 CIM_Product.Vendor

SDD Usage: PropertyConstraint

Valid Values: String

Version

Source: CIMv2.15 CIM_Product.Version

SDD Usage: PropertyConstraint

Valid Values: Strings of form x.y.z where x, y, and z are numeric

Directory

Source: CIMv2.15 CIM_Directory.Name

SDD Usage: PropertyConstraint

Valid Values: String

CIM_ApplicationSystem

Class Reference

Source: CIMv2.15 CIM_ApplicationSystem

Consumes Artifacts: N/A

Hosts: N/A

Completion Actions: N/A

SDD Usage: Resource.type

Attributes

Name

Source: CIMv2.15 CIM_Product.Name

SDD Usage: Name

Valid Values: String

Vendor

Source: CIMv2.15 CIM_Product.Vendor

SDD Usage: PropertyConstraint

Valid Values: String

Version

Source: CIMv2.15 CIM_Product.Version

SDD Usage: PropertyConstraint

Valid Values: Strings of form x.y.z where x, y, and z are numeric

Directory

Source: CIMv2.15 CIM_Directory.Name

SDD Usage: PropertyConstraint

Valid Values: String

State

Source: CIMv2.15 CIM_ApplicationSystem.EnabledState

SDD Usage: PropertyConstraint

Valid Values: Unknown, Enabled, Disabled, Shutting down, Starting, other

CIM_J2eeServer

Class Reference

Source: CIMv2.15 CIM_J2eeServer

Consumes Artifacts: N/A

Hosts: CIM_J2eeServlet, CIM_J2eeApplication
Completion Actions: N/A
SDD Usage: Resource.type

Attributes
Type
Source: SDD:CIM_J2eeServer.Type
SDD Usage: PropertyConstraint
Valid Values: JBoss, Tomcat, WebLogic, WebSphere, other
Name
Source: CIMv2.15 CIM_Product.Name
SDD Usage: Name
Valid Values: String
Vendor
Source: CIMv2.15 CIM_Product.Vendor
SDD Usage: PropertyConstraint
Valid Values: String
Version
Source: CIMv2.15 CIM_Product.Version
SDD Usage: PropertyConstraint
Valid Values: Strings of form x.y.z where x, y, and z are numeric
Directory
Source: CIMv2.15 CIM_Directory.Name
SDD Usage: PropertyConstraint
Valid Values: String
State
Source: CIMv2.15 CIM_ApplicationSystem.EnabledState
SDD Usage: PropertyConstraint
Valid Values: Unknown, Enabled, Disabled, Shutting down, Starting, other

CIM_J2eeServlet
Class Reference
Source: CIMv2.15 CIM_J2eeServlet
Consumes Artifacts: N/A
Hosts: N/A
Completion Actions: N/A
SDD Usage: Resource.type

Attributes
Name
Source: CIMv2.15 CIM_J2eeServlet.Name
SDD Usage: Name
Valid Values: String
Vendor
Source: CIMv2.15 CIM_Product.Vendor
SDD Usage: PropertyConstraint
Valid Values: String
Version
Source: CIMv2.15 CIM_Product.Version
SDD Usage: PropertyConstraint
Valid Values: Strings of form x.y.z where x, y, and z are numeric
Directory
Source: CIMv2.15 CIM_Directory.Name
SDD Usage: PropertyConstraint

Valid Values: String

CIM_J2eeApplication

Class Reference

Source: CIMv2.15 CIM_J2eeApplication
Consumes Artifacts: N/A
Hosts: N/A
Completion Actions: N/A
SDD Usage: Resource.type

Attributes

Name

Source: CIMv2.15 CIM_Product.Name
SDD Usage: Name
Valid Values: String

Vendor

Source: CIMv2.15 CIM_Product.Vendor
SDD Usage: PropertyConstraint
Valid Values: String

Version

Source: CIMv2.15 CIM_Product.Version
SDD Usage: PropertyConstraint
Valid Values: Strings of form x.y.z where x, y, and z are numeric

Directory

Source: CIMv2.15 CIM_Directory.Name
SDD Usage: PropertyConstraint
Valid Values: String

State

Source: CIMv2.15 CIM_ApplicationSystem.EnabledState
SDD Usage: PropertyConstraint
Valid Values: Unknown, Enabled, Disabled, Shutting down, Starting, other

CIM_DatabaseSystem

Class Reference

Source: CIMv2.15 CIM_DatabaseSystem
Consumes Artifacts: N/A
Hosts: CIM_DatabaseFile, CIM_DatabaseSegment
Completion Actions: N/A
SDD Usage: Resource.type

Attributes

Type

Source: SDD:CIM_DatabaseSystem.Type
SDD Usage: PropertyConstraint
Valid Values: DB2, DB4, DB6, Derby, MSSQL, MySQL, Oracle, Sybase, Teradata, other

Name

Source: CIMv2.15 CIM_Product.Name
SDD Usage: Name
Valid Values: String

Vendor

Source: CIMv2.15 CIM_Product.Vendor
SDD Usage: PropertyConstraint
Valid Values: String

Version

Source: CIMv2.15 `CIM_Product.Version`

SDD Usage: `PropertyConstraint`

Valid Values: `Strings` of form `x.y.z` where `x`, `y`, and `z` are numeric

`Directory`

Source: CIMv2.15 `CIM_Directory.Name`

SDD Usage: `PropertyConstraint`

Valid Values: `String`

`State`

Source: CIMv2.15 `CIM_ApplicationSystem.EnabledState`

SDD Usage: `PropertyConstraint`

Valid Values: `Unknown, Enabled, Disabled, Shutting down, Starting, other`

CIM_ConnectedTo

Class Reference

Source: CIMv2.15 `CIM_ConnectedTo`

Consumes Artifacts: N/A

Hosts: N/A

Completion Actions: N/A

SDD Usage: `Resource.type`

Attributes

`Protocol`

Source: `SDD:CIM_ConnectedTo.Protocol`

SDD Usage: `PropertyConstraint`

Valid Values: `FTP, HTTPS, HTTP, JDBC, ODBC, RMI-IIOP, Telnet, other`

ArtifactTypeEnumeration

SDD Usage: `Artifacts`

Valid Values: `MSI, RPM, TAR, ZIP, JAR, XMT, EXE, SCRIPT, DDL, other`

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