Cisco UCS SMASH Reference Guide

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Preface

This preface describes the audience and organization of the *Cisco UCS SMASH Reference Guide*. It also provides information on how to obtain related documentation. This preface contains the following topics:

- Objectives, page v
- Organization, page v
- Document Conventions, page vi
- Related Documentation, page vii
- Obtaining Documentation and Submitting a Service Request, page vii

Objectives

This document describes the SMASH support in the Cisco UCS Servers.

This document does not provide detailed instructions on how to use the SMASH management methods. For usage instructions, see the DMTF documentation at:

http://www.dmtf.org/standards/mgmt/smash

Audience

This reference guide is designed for users who are responsible for the following:

- Implementing Cisco UCS Server instances
- Managing Cisco UCS instances

Organization

This guide is organized into the following chapters:

- Chapter 1, “Introduction”
- Chapter 2, “Accessing and Using the SMASH CLP”
- Chapter 3, “Accessing and Using WS-Management”
- Chapter 4, “Supported Profiles”
Document Conventions

This document uses the following conventions:

**Note**

Means reader *take note*. Notes contain helpful suggestions or references to material not covered in the manual.

**Caution**

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

**Tip**

Means *the following information will help you solve a problem*.

Command descriptions use these conventions:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface font</strong></td>
<td>Commands and keywords are in boldface.</td>
</tr>
<tr>
<td><strong>italic font</strong></td>
<td>Arguments for which you supply values are in italics.</td>
</tr>
<tr>
<td>[ ]</td>
<td>Elements in square brackets are optional.</td>
</tr>
<tr>
<td>{ x</td>
<td>y</td>
</tr>
<tr>
<td>[ x</td>
<td>y</td>
</tr>
<tr>
<td><strong>string</strong></td>
<td>A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.</td>
</tr>
</tbody>
</table>

Screen examples use these conventions:

<table>
<thead>
<tr>
<th>screen font</th>
<th>Terminal sessions and information that the switch displays are in screen font.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface screen font</strong></td>
<td>Information that you must enter is in boldface screen font.</td>
</tr>
<tr>
<td><strong>italic screen font</strong></td>
<td>Arguments for which you supply values are in italic screen font.</td>
</tr>
<tr>
<td>^</td>
<td>The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key.</td>
</tr>
<tr>
<td>&lt;&gt;</td>
<td>Non-printing characters, such as passwords, are in angle brackets.</td>
</tr>
<tr>
<td>[ ]</td>
<td>Default responses to system prompts are in square brackets.</td>
</tr>
<tr>
<td>!, #</td>
<td>An exclamation point (!) or number sign (#) at the beginning of a line of code indicates a comment line.</td>
</tr>
</tbody>
</table>
Related Documentation

The documentation sets for the Cisco UCS B-Series and C-Series servers can be found at the following URLs:


Documentation for the Systems Management Architecture for Server Hardware (SMASH) can be found at the following URL:

- [http://www.dmtf.org/standards/mgmt/smash](http://www.dmtf.org/standards/mgmt/smash)

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What’s New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:


Subscribe to the *What’s New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS Version 2.0.
Introduction

This chapter provides an overview of SMASH support in the Cisco UCS Servers.

This chapter contains the following sections:

- About the Cisco Unified Computing System, page 1-1
- About the DMTF, page 1-1
- About the CIM, page 1-1
- About SMASH, page 1-2
- About This Guide, page 1-2

About the Cisco Unified Computing System

Cisco Unified Computing System (Cisco UCS) fuses access layer networking and servers. This high-performance, next-generation server system provides a data center with a high degree of workload agility and scalability. The hardware and software components support Cisco's unified fabric, which runs multiple types of data center traffic over a single converged network adapter.

About the DMTF

The Distributed Management Task Force (DMTF) is an industry organization that develops and promotes standards for the platform-independent management of enterprise servers and systems. Founded in 1992, the DMTF has a membership of more than 200 organizations and companies, including many universities and most major vendors of enterprise IT systems. The activities of the DMTF consist of several general initiatives, with multiple working groups addressing specific aspects of each initiative.

About the CIM

The central concept at the core of most DMTF standards is the Common Information Model (CIM), an object-oriented framework for modeling the logical and physical components of an information system. The CIM describes a common set of managed elements and the relationships between them.
The CIM Schema defines a hierarchy of classes in which subclasses inherit general attributes from parent classes while adding more specialized attributes. Each class will have one or more instances. Each instance has a number of properties and each property has a value. For example, a 2 gigabyte DIMM memory module is an instance of the CIM_PhysicalMemory class, which is a subclass of the CIM_Chip class, and has a Capacity property whose value is 2147483648 bytes.

The CIM further defines profiles, which comprise the classes, properties, methods, and values that are required to represent and manage a particular management domain or functional area. For example, the Fan profile describes the properties and methods of fans and redundant fans in a managed system. This profile associates the physical fan instance with a sensor instance and requires the ability to sense and set properties such as fan speed and state. The DMTF publishes specifications for many standard profiles, with most system vendors implementing a subset of the available profiles.

About SMASH

The Systems Management Architecture for Server Hardware (SMASH) initiative is a suite of specifications defining a common architectural model, standard protocols, and profiles to facilitate the management of a data center, independent of vendor, topology, or operating system. The SMASH initiative includes two methods of interaction for system management:

- Server Management Command Line Protocol (CLP)—A universal command line syntax allowing an operator or a script to execute common system tasks over a text-based transport protocol.
- WS-Management—A universal Web services interface for system management.

Either interface provides control of the managed elements of the CIM for the underlying system. Cisco UCS servers implement both interaction methods.

About This Guide

The purpose of the Cisco UCS SMASH Reference Guide is as follows:

- List the profiles, classes, properties, and methods of SMASH management that are supported by the Cisco UCS Servers.
- Provide instructions for accessing the SMASH management interfaces that are supported by the Cisco UCS Servers.

This guide does not provide detailed instructions on how to use the SMASH management methods. For usage instructions, see the DMTF documentation at the following URL:

http://www.dmtf.org/standards/mgmt/smash
Accessing and Using the SMASH CLP

This chapter describes how to access the SMASH CLP and provides limited information about its use. For detailed information about using the SMASH CLP, see the DMTF documentation at the following URL:

http://www.dmtf.org/standards/mgmt/smash

This chapter contains the following topics:

- Accessing the SMASH CLP, page 2-1
- Viewing the Available Commands, page 2-2
- Viewing the Properties, Targets, and Verbs, page 2-2
- Navigating to CLP Objects, page 2-3
- Configuring a CLP Property, page 2-3
- Task Examples, page 2-3

Accessing the SMASH CLP

The SMASH CLP interface is activated from within the Cisco UCS server command line interface. To access the SMASH CLP, connect to the command line interface of the UCS server using SSH or a console connection.

To activate the SMASH CLP, perform this task from the Cisco UCS server command line interface:

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
</tr>
<tr>
<td>Server# connect clp</td>
<td>Enters the CLP environment.</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
</tr>
<tr>
<td>/admin1-&gt;</td>
<td>This is the CLP prompt.</td>
</tr>
</tbody>
</table>

This example shows how to enter the CLP environment:

```
ucs-c460# connect clp
/admin1->
```
Viewing the Available Commands

The **help** command displays the SMASH CLP commands and options that are available at each level. To view the commands, perform this task:

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>/admin1-&gt; help</td>
<td>Displays the CLP commands and options.</td>
</tr>
</tbody>
</table>

This example shows how to view the CLP command options:

```
/admin1-> help
[Usage]
    show  [options] [target] [properties]
    [propertyname==propertyvalue]
    set   [options] [target] <propertyname>=<value>
    cd    [options] [target]
    create [options] [target] [property of new target]=<value>
    [property of new target]=<value>
    delete [options] [target]
    exit  [options]
    reset [options] [target]
    start [options] [target]
    stop  [options] [target]
    version [options]
    help  [options] [help topics]
    load -source <URI> [options] [target]
    dump -destination <URI> [options] [target]
```

```
/admin1->
```

**Tip**
You can use the Tab key to complete a command. Partially typing a command name and pressing Tab causes the command to be displayed in full, or to the point where another keyword must be chosen or an argument value must be entered.

Viewing the Properties, Targets, and Verbs

The **show** command displays the SMASH CLP properties, targets, and verbs that are available at each level. To view the properties, targets, and verbs, perform this task:

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>/admin1-&gt; show</td>
<td>Displays the CLP properties, targets, and verbs.</td>
</tr>
</tbody>
</table>

This example shows how to view the CLP properties, targets, and verbs:

```
/admin1-> show
/admin1
    properties
    ElementName = SM CLP Admin Domain
    targets
    hdwr1
    profiles1
    system1
    verbs
```
Navigating to CLP Objects

The `cd` command allows you to navigate to SMASH CLP targets. To navigate to a target, perform this task:

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>/admin1-&gt; cd target</code></td>
<td>Displays the CLP commands and options.</td>
</tr>
</tbody>
</table>

This example shows how to navigate from the root level to the `profiles1` target:

```
/admin1-> cd profiles1
/admin1/profiles1->
```

Configuring a CLP Property

The `set` command allows you to change a configurable SMASH CLP property. To configure a property, perform this task:

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>/admin1-&gt; cd target</code></td>
<td>Navigates to the target.</td>
</tr>
<tr>
<td><code>/admin1/target-&gt; set property=value</code></td>
<td>Configures a new value for the property.</td>
</tr>
</tbody>
</table>

This example shows how to change the `ActivationState` property of the indicator LED:

```
/admin1-> cd /admin1/system1/leds1/identifyled1
/admin1/system1/leds1/identifyled1-> set ActivationState=3
   activationstate=3
/admin1/system1/leds1/identifyled1->
```

Task Examples

This section contains the following examples:

- Configuring a Sensor Threshold, page 2-4
- Setting the Indicator LED, page 2-4
- Clearing the System Event Log, page 2-4
- Controlling System Power, page 2-5
Configuring a Sensor Threshold

To configure a sensor threshold, perform this task:

```
Command                      Purpose
Step 1                      /admin1-> cd target
Step 2                      /admin1/target-> set property=value
```

This example shows how to configure a sensor threshold:
```
/admin1-> cd /admin1/system1/sensors1/numsensor1
/admin1/system1/sensors1/numsensor1-> set LowerThresholdCritical=20000
     lowerthresholdcritical=19932
```

**Note**
Because some properties have limited resolution, the actual resulting value may be slightly different from the value specified in the `set` command, as in this example.

Setting the Indicator LED

To set the indicator LED, perform this task:

```
Command                      Purpose
Step 1                      /admin1-> cd /admin1/system1/leds1/identifyled1
Step 2                      /admin1/target-> set ActivationState=3
```

This example shows how to set the indicator LED by changing the Activation State to 3:
```
/admin1-> cd /admin1/system1/leds1/identifyled1
/admin1/system1/leds1/identifyled1-> set ActivationState=3
     activationstate=3
```

Clearing the System Event Log

The `reset` command allows you to clear the system event log (SEL). To clear the SEL, perform this task:

```
Command                      Purpose
Step 1                      /admin1-> cd /admin1/system1/log1
Step 2                      /admin1/system1/log1-> reset
```

This example shows how to clear the SEL:
```
/admin1-> cd /admin1/system1/log1
/admin1/system1/log1-> reset
/admin1/system1/log1 reset at Tue Jun 1 11:43:54 2010
```
Controlling System Power

A set of power commands allows you to stop, start, and reset the server power. To control the server power, perform one of these tasks:

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Navigates to the system1 target.</td>
</tr>
<tr>
<td>/admin1-&gt; cd /admin1/system1</td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>Sets the powerstate to 2 (On).</td>
</tr>
<tr>
<td>/admin1/system1-&gt; start</td>
<td></td>
</tr>
<tr>
<td>/admin1/system1-&gt; reset</td>
<td>Sets the powerstate to 5 (Power Cycle (Off-Soft)).</td>
</tr>
<tr>
<td>/admin1/system1-&gt; stop -f</td>
<td>Sets the powerstate to 8 (Off-Soft).</td>
</tr>
<tr>
<td>/admin1/system1-&gt; stop</td>
<td>Sets the powerstate to 12 (Off-Soft Graceful).</td>
</tr>
</tbody>
</table>

This example shows how to gracefully turn off the server power:

```
/admin1-> cd /admin1/system1
/admin1/system1-> stop
/admin1/system1 stopped at Wed Jun 2 07:31:15 2010
/admin1/system1->
```
Accessing and Using WS-Management

This chapter describes how to access the SMASH Web Services interface (WS-Management) and provides limited information about its use. For detailed information about using the SMASH WS-Management tool, see the DMTF documentation at this URL:

http://www.dmtf.org/standards/mgmt/smash

This chapter contains the following topics:

- Obtaining and Installing a WS-Management Client, page 3-1
- Configuring WinRM, page 3-2
- Viewing the Available Commands, page 3-2
- Command Structure, page 3-3
- Task Examples, page 3-4

Obtaining and Installing a WS-Management Client

To use WS-Management, you must obtain and install a WS-Management client for your operating system. Free clients are available for common operating systems, including Windows, Macintosh OS X, and Linux.

For this guide, we will use Microsoft Windows Remote Management (WinRM) as an example. WinRM is included with current Windows desktop and server versions, and is available as a download from Microsoft for selected earlier versions. Refer to Microsoft’s documentation for instructions on obtaining and installing the appropriate version of WinRM for your client computer.

After installation, WinRM can be run from a Windows command prompt in any directory. To test the installation, enter the `winrm id` command at the Windows command prompt. The command output should appear as in the following example:

```
C:\> winrm id
IdentifyResponse
ProductVendor = Microsoft Corporation
ProductVersion = OS: 5.1.2600 SP: 2.0 Stack: 1.1
```
Configuring WinRM

By default, WinRM has the following restrictions:
- Requires a secure connection (https)
- Disallows basic authentication
- Trusts no host

You must configure the client to allow unencrypted communication and basic authentication, and to trust certain hosts for unencrypted communication. To make these configuration changes, enter the following commands at the Windows command prompt:

```
winrm set winrm/config/client/auth @{Basic="true"}
winrm set winrm/config/client @{AllowUnencrypted="true"}
winrm set winrm/config/client @{TrustedHosts="*"}
```

This example shows how to verify the configuration:

```
C:\> winrm get winrm/config/client
Client
    NetworkDelayms = 5000
    URLPrefix = wsman
    AllowUnencrypted = true
    Auth
        Basic = true
        Digest = true
        Kerberos = true
        Negotiate = true
        Certificate = true
    DefaultPorts
        HTTP = 80
        HTTPS = 443
    TrustedHosts = *

C:\>
```

Viewing the Available Commands

To display the WinRM command options, enter the `winrm` command at the Windows command prompt, as in the following example:

```
C:\> winrm
Windows Remote Management Command Line Tool

Windows Remote Management (WinRM) is the Microsoft implementation of the WS-Management protocol which provides a secure way to communicate with local and remote computers using web services.

Usage:
    winrm OPERATION RESOURCE_URI [-SWITCH:VALUE [-SWITCH:VALUE] ...]
    [@{KEY=VALUE;KEY=VALUE}...]

For help on a specific operation:
    winrm g[et] -?  Retrieving management information.
    winrm s[et] -?  Modifying management information.
    winrm c[reate] -?  Creating new instances of management resources.
    winrm d[lete] -?  Remove an instance of a management resource.
    winrm e[numerate] -?  List all instances of a management resource.
    winrm i[nvoke] -?  Executes a method on a management resource.
```
winrm id[entify] -? Determines if a WS-Management implementation is running on the remote machine.
winrm quickconfig -? Configures this machine to accept WS-Management requests from other machines.
winrm configSDDL -? Modify an existing security descriptor for a URI.
winrm helpmsg -? Displays error message for the error code.

For help on related topics:
winrm help uris How to construct resource URIs.
winrm help aliases Abbreviations for URIs.
winrm help config Configuring WinRM client and service settings.
winrm help certmapping Configuring client certificate access.
winrm help customremoteshell Configures a shell executable and arguments corresponding to a shell URI.

winrm help remoting How to access remote machines.
winrm help auth Providing credentials for remote access.
winrm help input Providing input to create, set, and invoke.
winrm help switches Other switches such as formatting, options, etc.

The output of the winrm command lists many other help options. Explore these additional options for detailed information about WinRM commands.

### Command Structure

The following example shows a typical `winrm get` command:

C:\> winrm get
cimv2/CCIM_IndicatorLED?SystemCreationClassName=CCIM_ComputerSystem+SystemName=srv:1+CreationClassName=CCIM_IndicatorLED+DeviceID=LED_FPID -r:https://192.0.20.137:443 -a:Basic -u:admin -p:password -encoding:utf-8 -f:text -skipCAcheck -skipCNcheck

The following table describes the fields of this command:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>winrm</td>
<td>The main winrm command.</td>
</tr>
<tr>
<td>get</td>
<td>This command is a GET CIM Object instance WSMAN operation, which retrieves management information.</td>
</tr>
<tr>
<td>cimv2/</td>
<td>The cimv2 path is an alias to the full resource URI that we are trying to retrieve. In this case, it is an alias for a DMTF CIM schema. For more information, enter the winrm help aliases command.</td>
</tr>
<tr>
<td>CCIM_IndicatorLED?</td>
<td>This is the object whose properties are being queried.</td>
</tr>
<tr>
<td>SystemCreationClassName=CCIM_ComputerSystem</td>
<td>The first of four object identification keys.</td>
</tr>
<tr>
<td>+</td>
<td>The + operator links multiple instances of key=value pairs.</td>
</tr>
<tr>
<td>SystemName=srv:1</td>
<td>The second of four object identification keys.</td>
</tr>
<tr>
<td>CreationClassName=CCIM_IndicatorLED</td>
<td>The third of four object identification keys.</td>
</tr>
<tr>
<td>DeviceID=LED_FPID</td>
<td>The last of four object identification keys.</td>
</tr>
</tbody>
</table>
Task Examples

This section contains the following examples:

- Configuring a Battery Sensor Threshold, page 3-4
- Configuring a Chassis Locator LED, page 3-8
- Viewing and Clearing the System Event Log, page 3-11
- Performing a Power Control Operation, page 3-13

Configuring a Battery Sensor Threshold

This example reads the 3 volt battery sensor status, sets the LowerThresholdCritical property to a new value of 2000, and reads the sensor again to verify the new value (in this example, the value is shown in **bold** for readability):

```
\C\> winrm get
cciw2/CCIM_NumericSensor?CreationClassName=CCIM_NumericSensor+DeviceID=0.0.20.1+SystemName
sicr:1+SystemCreationClassName=CCIM_ComputerSystem -r:https://192.0.20.137 -a:Basic
-u:admin -p:password -encoding:utf-8 -f:text -skipCNcheck -skipCAcheck
```

```
CCIM_NumericSensor
Accuracy = null
AccuracyUnits = null
AdditionalAvailability = null
Availability = null
```

Field | Description
--- | ---
-r:https://192.0.20.137:443 | The resource URI. Specifies an HTTP secure connection to the server at the given IP address at port 443. For more information, enter the **winrm help remoting** command.
-a:Basic | Basic authentication will be used for the server connection. For more information, enter the **winrm help auth** command.
-u:admin | The username for logging in with basic authentication.
-p:password | The password for logging in with basic authentication.
-encoding:utf-8 | Data exchanged with the server will be in UTF-8 encoding. For more information on this field and the remaining fields, enter the **winrm help switches** command.
-f:text | The format of data exchanged with the server will be formatted as text.
-skipCAcheck | The SSL certificate authority (CA) of the server need not be a trusted root authority.
-skipCNcheck | The SSL common name (CN) of the server need not match the hostname of the server.
AvailableRequestedStates = null
BaseUnits = 5
Caption = null
CommunicationStatus = null
CreationClassName = CCIM_NumericSensor
CurrentReading = 30096
CurrentState = Normal
Description = null
DetailedStatus = null
DeviceID = 0.0.20.1
ElementName = P3V_BAT_SCALED(0.0.20)
EnabledDefault = 2
EnabledState = 1
EnabledThresholds = null
ErrorCleared = null
ErrorDescription = null
HealthState = 5
Hysteresis = null
IdentifyingDescriptions = null
InstallDate = null
IsLinear = null
LastErrorCode = null
LocationIndicator = null
**LowerThresholdCritical = 21780**
LowerThresholdFatal = 19932
LowerThresholdNonCritical = 0
MaxQuiesceTime = null
MaxReadable = null
MinReadable = null
Name = null
NominalReading = null
NormalMax = null
NormalMin = null
OperatingStatus = null
OperationalStatus = 2
OtherEnabledState = null
OtherIdentifyingInfo = null
OtherSensorTypeDescription = null
PollingInterval = null
PossibleStates = Normal, Upper Fatal, Upper Critical, Upper Non-Critical, Lower Fatal, Lower Critical, Lower Non-Critical, Unknown
PowerManagementCapabilities = null
PowerManagementSupported = null
PowerOnHours = null
PrimaryStatus = 1
ProgrammaticAccuracy = null
RateUnits = 0
RequestedState = 12
Resolution = null
SensorType = 3
SettableThresholds = 2, 3, 4
Status = null
StatusDescriptions = null
StatusInfo = null
SupportedThresholds = 2, 3, 4
SystemCreationClassName = CCIM_ComputerSystem
SystemName = srv:1
TimeOfLastStateChange = null
Tolerance = null
TotalPowerOnHours = null
TransitioningToState = 12
UnitModifier = -4
UpperThresholdCritical = 33000
UpperThresholdFatal = 0
UpperThresholdNonCritical = 0
ValueFormulation = 2

C:\> winrm set
ccm\2/C CIM\_NumericSensor?CreationClassName=CCIM\_NumericSensor+DeviceID=0.0.20.1+SystemName =srv\:1\SystemCreationClassName=CCIM\_ComputerSystem -r:https://192.0.20.137 -a:Basic
-u:admin -p:password -encoding:utf-8 -f:text -skipCNcheck -skipCAcheck
@{LowerThresholdCritical="2000"}

CCIM\_NumericSensor
    Accuracy = null
    AccuracyUnits = null
    AdditionalAvailability = null
    Availability = null
    AvailableRequestedStates = null
    BaseUnits = 5
    Caption = null
    CommunicationStatus = null
    CreationClassName = CCIM\_NumericSensor
    CurrentReading = 30096
    CurrentState = Normal
    Description = null
    DetailedStatus = null
    DeviceID = 0.0.20.1
    ElementName = P3V\_BAT\_SCALED(0.0.20)
    EnabledDefault = 2
    EnabledState = 1
    EnabledThresholds = null
    ErrorCleared = null
    ErrorDescription = null
    HealthState = 5
    Hysteresis = null
    IdentifyingDescriptions = null
    InstallDate = null
    IsLinear = null
    LastErrorCode = null
    LocationIndicator = null
    LowerThresholdCritical = 2000
    LowerThresholdFatal = 19932
    LowerThresholdNonCritical = 0
    MaxQuiesceTime = null
    MaxReadable = null
    MinReadable = null
    Name = null
    NominalReading = null
    NormalMax = null
    NormalMin = null
    OperatingStatus = null
    OperationalStatus = 2
    OtherEnabledState = null
    OtherIdentifyingInfo = null
    OtherSensorTypeDescription = null
    PollingInterval = null
    PossibleStates = Normal, Upper Fatal, Upper Critical, Upper Non-Critical, Lower Fatal, Lower Critical, Lower Non-Critical, Unknown
    PowerManagementCapabilities = null
    PowerManagementSupported = null
    PowerOnHours = null
    PrimaryStatus = 1
    ProgrammaticAccuracy = null
    RateUnits = 0
    RequestedState = 12
    Resolution = null
    SensorType = 3
SettableThresholds = 2, 3, 4
Status = null
StatusDescriptions = null
StatusInfo = null
SupportedThresholds = 2, 3, 4
SystemCreationClassName = CCIM_ComputerSystem
SystemName = srv:1
TimeOfLastStateChange = null
Tolerance = null
TotalPowerOnHours = null
TransitioningToState = 12
UnitModifier = -4
UpperThresholdCritical = 33000
UpperThresholdFatal = 0
UpperThresholdNonCritical = 0
ValueFormulation = 2

C:\> winrm get
  cimv2/CCIM_NumericSensor?CreationClassName=CCIM_NumericSensor+DeviceID=0.0.20.1+SystemName
  =srv:1+SystemCreationClassName=CCIM_ComputerSystem -r:https://192.0.20.137 -a:Basic
  -u:admin -p:password -encoding:utf-8 -f:text -skipCNcheck -skipCAcheck

CCIM_NumericSensor
Accuracy = null
AccuracyUnits = null
AdditionalAvailability = null
Availability = null
AvailableRequestedStates = null
BaseUnits = 5
Caption = null
CommunicationStatus = null
CreationClassName = CCIM_NumericSensor
CurrentReading = 30096
CurrentState = Normal
Description = null
DetailedStatus = null
DeviceID = 0.0.20.1
ElementName = P3V_BAT_SCALED(0.0.20)
EnabledDefault = 2
EnabledState = 1
EnabledThresholds = null
ErrorCleared = null
ErrorDescription = null
HealthState = 5
Hysteresis = null
IdentifyingDescriptions = null
InstallDate = null
IsLinear = null
LastErrorCode = null
LocationIndicator = null
LowerThresholdCritical = 1980
LowerThresholdFatal = 19932
LowerThresholdNonCritical = 0
MaxQuiesceTime = null
MaxReadable = null
MinReadable = null
Name = null
NominalReading = null
NormalMax = null
NormalMin = null
OperatingStatus = null
OperationalStatus = 2
OtherEnabledState = null
OtherIdentifyingInfo = null
Chapter 3      Accessing and Using WS-Management

Task Examples

OtherSensorTypeDescription = null
PollingInterval = null
PossibleStates = Normal, Upper Fatal, Upper Critical, Upper Non-Critical, Lower Fatal, Lower Critical, Lower Non-Critical, Unknown
PowerManagementCapabilities = null
PowerManagementSupported = null
PowerOnHours = null
PrimaryStatus = 1
ProgrammaticAccuracy = null
RateUnits = 0
RequestedState = 12
Resolution = null
SensorType = 3
SettableThresholds = 2, 3, 4
Status = null
StatusDescriptions = null
StatusInfo = null
SupportedThresholds = 2, 3, 4
SystemCreationClassName = CCIM_ComputerSystem
SystemName = srv:1
TimeOfLastStateChange = null
Tolerance = null
TotalPowerOnHours = null
TransitioningToState = 12
UnitModifier = -4
UpperThresholdCritical = 33000
UpperThresholdFatal = 0
UpperThresholdNonCritical = 0
ValueFormulation = 2

Note Because some properties have limited resolution, the actual resulting value may be slightly different from the value specified in the set command, as in this example.

Configuring a Chassis Locator LED

This example reads the current status of the chassis locator LED, turns the LED on by changing the Activation State from 4 to 3, and verifies the new status:

C:\> winrm get
    cimv2/CCIM_IndicatorLED?SystemCreationClassName=CCIM_ComputerSystem+SystemName=srv:1+CreationClassName=CCIM_IndicatorLED+DeviceID=LED_FPID -r:https://192.0.20.137:443 -a:Basic -u:admin -p:password -encoding:utf-8 -f:text -skipCAcheck -skipCNcheck

CCIM_IndicatorLED
  ActivationState = 4
  AdditionalAvailability = null
  Availability = null
  AvailableRequestedStates = null
  Caption = null
  Color = 6
  CommunicationStatus = null
  ControlMode = 3
  ControlPattern = null
  CreationClassName = CCIM_IndicatorLED
  DefaultActivationState = 4
  Description = null
  DetailedStatus = null
  DeviceID = LED_FPID
  ElementName = Chassis Identify LED

  ActivationState = 3
  AdditionalAvailability = null
  Availability = null
  AvailableRequestedStates = null
  Caption = null
  Color = 6
  CommunicationStatus = null
  ControlMode = 3
  ControlPattern = null
  CreationClassName = CCIM_IndicatorLED
  DefaultActivationState = 3
  Description = null
  DetailedStatus = null
  DeviceID = LED_FPID
  ElementName = Chassis Identify LED
EnabledDefault = 2
EnabledState = 5
ErrorCleared = null
ErrorDescription = null
HealthState = null
IdentifyingDescriptions = null
IndicatedConditions = 3
InstallDate = null
LastErrorCode = null
LocationIndicator = null
MaxQuiesceTime = null
Name = null
OperatingStatus = null
OperationalStatus = null
OtherColorDescription = null
OtherEnabledState = null
OtherIdentifyingInfo = null
OtherIndicatedConditionDescription = null
PowerManagementCapabilities = null
PowerManagementSupported = null
PowerOnHours = null
PrimaryStatus = null
RequestedState = 12
Status = null
StatusDescriptions = null
StatusInfo = null
SystemCreationClassName = CCIM_ComputerSystem
SystemName = srv:1
TimeOfLastStateChange = null
TotalPowerOnHours = null
TransitioningToState = 12

C:\> winrm set
cimv2/CCIM_IndicatorLED?SystemCreationClassName=CCIM_ComputerSystem+SystemName=srv:1+CreationClassName=CCIM_IndicatorLED+DeviceID=LED_FPID -r:https://192.0.20.137:443 -a:Basic -u:admin -p:password -encoding:utf-8 -f:text -skipCAcheck -skipCNcheck @{ActivationState="3"}
MaxQuiesceTime = null
Name = null
OperatingStatus = null
OperationalStatus = null
OtherColorDescription = null
OtherEnabledState = null
OtherIdentifyingInfo = null
OtherIndicatedConditionDescription = null
PowerManagementCapabilities = null
PowerManagementSupported = null
PowerOnHours = null
PrimaryStatus = null
RequestedState = 12
Status = null
StatusDescriptions = null
StatusInfo = null
SystemCreationClassName = CCIM_ComputerSystem
SystemName = srv:1
TimeOfLastStateChange = null
TotalPowerOnHours = null
TransitioningToState = 12

C:\> winrm get cimv2/CCIM_IndicatorLED?SystemCreationClassName=CCIM_ComputerSystem+SystemName=srv:1+CreationClassName=CCIM_IndicatorLED+DeviceID=LED_FPID -r:https://192.0.20.137:443 -a:Basic -u:admin -p:password -encoding:utf-8 -f:text -skipCAcheck -skipCNcheck

CCIM_IndicatorLED
   ActivationState = 3
   AdditionalAvailability = null
   Availability = null
   AvailableRequestedStates = null
   Caption = null
   Color = 6
   CommunicationStatus = null
   ControlMode = 3
   ControlPattern = null
   CreationClassName = CCIM_IndicatorLED
   DefaultActivationState = 4
   Description = null
   DetailedStatus = null
   DeviceID = LED_FPID
   ElementName = Chassis Identify LED
   EnabledDefault = 2
   EnabledState = 5
   ErrorCleared = null
   ErrorDescription = null
   HealthState = null
   IdentifyingDescriptions = null
   IndicatedConditions = 3
   InstallDate = null
   LastErrorCode = null
   LocationIndicator = null
   MaxQuiesceTime = null
   Name = null
   OperatingStatus = null
   OperationalStatus = null
   OtherColorDescription = null
   OtherEnabledState = null
   OtherIdentifyingInfo = null
   OtherIndicatedConditionDescription = null
   PowerManagementCapabilities = null
   PowerManagementSupported = null
   PowerOnHours = null
PrimaryStatus = null
RequestedState = 12
Status = null
StatusDescriptions = null
StatusInfo = null
SystemCreationClassName = CCIM_ComputerSystem
SystemName = srv:1
TimeOfLastStateChange = null
TotalPowerOnHours = null
TransitioningToState = 12

Viewing and Clearing the System Event Log

This example reads the system event log (SEL) entries, reads the log details, clears the log, and reads the log details again:

C:\> \winrm Enumerate cimv2/CCIM_SELLogEntry -r:https://192.0.20.137:443 -a:Basic -u:admin
-p:password -encoding:utf-8 -f:text -skipCAcheck -skipCNcheck

CCIM_SELLogEntry
  Caption = null
  CreationTimeStamp = 20100607145556.000000+000
  Description = null
  ElementName = System Event Log Entry
  InstanceID = CCIM:SEL:Entry:1
  Locale = null
  LogInstanceID = CCIM:SEL:1
  LogName = System Event Log
  Message = null
  MessageArguments = null
  MessageID = null
  OwningEntity = null
  RecordData = *1*LED_FPID: Platform sensor, OFF event was asserted
  RecordFormat = *string Severity*string Description
  RecordID = 1

CCIM_SELLogEntry
  Caption = null
  CreationTimeStamp = 20100607145600.000000+000
  Description = null
  ElementName = System Event Log Entry
  InstanceID = CCIM:SEL:Entry:2
  Locale = null
  LogInstanceID = CCIM:SEL:1
  LogName = System Event Log
  Message = null
  MessageArguments = null
  MessageID = null
  OwningEntity = null
  RecordData = *1*LED_FPID: Platform sensor, FAST BLINK event was asserted
  RecordFormat = *string Severity*string Description
  RecordID = 2

C:\> \winrm get
-skipCAcheck -skipCNcheck

CCIM_SELRecordLog
  AvailableRequestedStates = null
  Caption = null
CommunicationStatus = null
CurrentNumberOfRecords = 2
Description = null
DetailedStatus = null
ElementName = System Event Log
EnabledDefault = 2
EnabledState = 2
HealthState = 5
InstallDate = null
InstanceID = CCIM:SEL:1
LogState = 2
MaxNumberOfRecords = 3008
Name = null
OperatingStatus = null
OperationalStatus = 2
OtherEnabledState = null
OverwritePolicy = 7
PrimaryStatus = null
RequestedState = 12
Status = null
StatusDescriptions = null
TimeOfLastStateChange = null
TransitioningToState = 12

C:\> winrm invoke ClearLog
-skipCAsCheck -skipCNCheck

ClearLog_OUTPUT
ReturnValue = 0

C:\> winrm get
-skipCAsCheck -skipCNCheck

CCIM_SELRecordLog
AvailableRequestedStates = null
Caption = null
CommunicationStatus = null
CurrentNumberOfRecords = 0
Description = null
DetailedStatus = null
ElementName = System Event Log
EnabledDefault = 2
EnabledState = 2
HealthState = 5
InstallDate = null
InstanceID = CCIM:SEL:1
LogState = 2
MaxNumberOfRecords = 3008
Name = null
OperatingStatus = null
OperationalStatus = 2
OtherEnabledState = null
OverwritePolicy = 7
PrimaryStatus = null
RequestedState = 12
Status = null
StatusDescriptions = null
TimeOfLastStateChange = null
TransitioningToState = 12
Performing a Power Control Operation

This example queries the system power management capabilities with a WinRM `enumerate` command, displays an XML file containing the desired power control changes, and invokes the changes by applying the XML file with a WinRM `invoke` command:

```
```

```
CCIM_CSPowerManagementCapabilities
  Caption = null
  Description = null
  ElementName = Power Management Capabilities
  InstanceID = CCIM:pwrmgtpcap1
  OtherPowerCapabilitiesDescriptions = null
  OtherPowerChangeCapabilities = null
  PowerCapabilities = null
  PowerChangeCapabilities = 3, 4, 7, 8
  PowerStatesSupported = 2, 5, 8, 10, 11, 12
```

```
C:\> type pwrcntrl_req.xml

<p:RequestPowerStateChange_INPUT
  xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'
  xmlns:wsa='http://schemas.xmlsoap.org/ws/2004/08/addressing'
  xmlns:wsman='http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd'>
  <p:ManagedElement>
    <wsa:ReferenceParameters>
      <wsman:SelectorSet>
        <wsman:Selector Name="Name">srv:1</wsman:Selector>
        <wsman:Selector Name="CreationClassName">CCIM_ComputerSystem</wsman:Selector>
      </wsman:SelectorSet>
    </wsa:ReferenceParameters>
    <wsman:SelectorSet>
      <wsman:Selector Name="Name">srv:1</wsman:Selector>
      <wsman:Selector Name="CreationClassName">CCIM_ComputerSystem</wsman:Selector>
    </wsman:SelectorSet>
  </p:ManagedElement>
  <p:PowerState>5</p:PowerState>
  <p:Time>00000000000000.000000:000</p:Time>
  <p:TimeoutPeriod>00000000000000.000000:000</p:TimeoutPeriod>
</p:RequestPowerStateChange_INPUT>

C:\> winrm invoke RequestPowerStateChange
  "cimv2/CCIM_CSPowerManagementService?CreationClassName=CCIM_CSPowerManagementService+Name=pwrmgtsvc:1+SystemName=CIMC:1+SystemCreationClassName=CCIM_SPComputerSystem"
  -skipCAcheck -skipCNcheck -file:pwrcntrl_req.xml

<n1:RequestPowerStateChange_OUTPUT
  xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CCIM_CSPowerManagementService"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <n1:Job xsi:nil="true"></n1:Job>
  <n1:ReturnValue>2</n1:ReturnValue>
</n1:RequestPowerStateChange_OUTPUT>
Supported Profiles

This chapter describes the SMASH profiles supported by the Cisco UCS Servers. Profile specifications are available from the DMTF at this URL:

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

This chapter contains the following topics:

- Base Server Profile, page 4-1
- CLP Admin Domain Profile, page 4-2
- CLP Service Profile, page 4-2
- CPU Profile, page 4-3
- Fan Profile, page 4-4
- Indicator LED Profile, page 4-4
- Physical Asset Profile, page 4-5
- Power State Management Profile, page 4-6
- Power Supply Profile, page 4-6
- Profile Registration Profile, page 4-7
- Record Log Profile, page 4-7
- Sensors Profile, page 4-8
- Service Processor Profile, page 4-8
- System Memory Profile, page 4-9

Base Server Profile

The specification for this profile can be found at this URL:

http://www.dmtf.org/standards/published_documents/DSP1004_1.0.1.pdf

This profile supports the following classes:

<table>
<thead>
<tr>
<th>Cisco Class</th>
<th>CIM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCIM_ComputerSystem</td>
<td>CIM_ComputerSystem</td>
</tr>
<tr>
<td>CCIM_SystemDevice</td>
<td>CIM_SystemDevice</td>
</tr>
<tr>
<td>CCIM_CSEnabledLogicalElementCapabilities</td>
<td>CIM_EnabledLogicalElementCapabilities</td>
</tr>
</tbody>
</table>
Chapter 4  Supported Profiles

CLP Admin Domain Profile

The specification for this profile can be found at this URL:
http://www.dmtf.org/standards/published_documents/DSP1007_1.0.0.pdf

This profile supports the following classes:

<table>
<thead>
<tr>
<th>Cisco Class</th>
<th>CIM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCIM_AdminDomain</td>
<td>CIM_AdminDomain</td>
</tr>
<tr>
<td>CCIM_HardwareConcreteCollection</td>
<td>CIM_ConcreteCollection</td>
</tr>
<tr>
<td>CCIM_SMCLPADHardwareMemberOfCollection</td>
<td>CIM_MemberOfCollection</td>
</tr>
<tr>
<td>CCIM_SMCLPADOwningCollectionElement</td>
<td>CIM_OwningCollectionElement</td>
</tr>
<tr>
<td>CCIM_SMCLPADSystemComponent</td>
<td>CIM_SystemComponent</td>
</tr>
<tr>
<td>CCIM_ADMProfilesOwningCollectionElement</td>
<td>CIM_OwningCollectionElement</td>
</tr>
<tr>
<td>CCIM_ADMProfilesMemberOfCollection</td>
<td>CIM_MemberOfCollection</td>
</tr>
<tr>
<td>CCIM_ADMProfilesConcreteCollection</td>
<td>CIM_ConcreteCollection</td>
</tr>
</tbody>
</table>

CLP Service Profile

The specification for this profile can be found at this URL:
http://www.dmtf.org/standards/published_documents/DSP1005_1.0.1.pdf

This profile supports the following classes:

<table>
<thead>
<tr>
<th>Cisco Class</th>
<th>CIM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCIM_CLPProtocolEndpoint</td>
<td>CIM_CLPProtocolEndpoint</td>
</tr>
<tr>
<td>CCIM_CLPConcreteJob</td>
<td>CIM_ConcreteJob</td>
</tr>
<tr>
<td>CCIM_CLPProtocolService</td>
<td>CIM_ProtocolService</td>
</tr>
</tbody>
</table>
### Modifiable Properties

The following properties of this profile can be modified:

<table>
<thead>
<tr>
<th>Property</th>
<th>Class</th>
<th>Required User Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>RequestStateChange</td>
<td>CCIM_CLPConcreteJob</td>
<td>user or admin</td>
</tr>
<tr>
<td>GetError</td>
<td>CCIM_CLPConcreteJob</td>
<td>user or admin</td>
</tr>
</tbody>
</table>

## CPU Profile

The specification for this profile can be found at this URL:

http://www.dmtf.org/standards/published_documents/DSP1022_1.0.1.pdf

This profile supports the following classes:

<table>
<thead>
<tr>
<th>Cisco Class</th>
<th>CIM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCIM_TCPEndPoint</td>
<td>CIM_TCPProtocolEndpoint</td>
</tr>
<tr>
<td>CCIM_CLPSettingData</td>
<td>CIM_CLPSettingData</td>
</tr>
<tr>
<td>CCIM_CLPJobQueue</td>
<td>CIM_JobQueue</td>
</tr>
<tr>
<td>CCIM_CLPCapabilities</td>
<td>CIM_CLPCapabilities</td>
</tr>
<tr>
<td>CCIM_CLPJobDestinationJobs</td>
<td>CIM_JobDestinationJobs</td>
</tr>
<tr>
<td>CCIM_CLPEndpointOwningJobElement</td>
<td>CIM_OwningJobElement</td>
</tr>
<tr>
<td>CCIM_CLPServiceOwningJobElement</td>
<td>CIM_OwningJobElement</td>
</tr>
<tr>
<td>CCIM_CLPProvidesEndpoint</td>
<td>CIM_ProvidesEndpoint</td>
</tr>
<tr>
<td>CCIM_HostedCLPAccessPoint</td>
<td>CIM_HostedAccessPoint</td>
</tr>
<tr>
<td>CCIM_SPHostedJobDestination</td>
<td>CIM_HostedJobDestination</td>
</tr>
<tr>
<td>CCIM_CLPElementSettingData</td>
<td>CIM_ElementSettingData</td>
</tr>
<tr>
<td>CCIM_CLPServiceAffectsJobQueue</td>
<td>CIM_ServiceAffectsElement</td>
</tr>
<tr>
<td>CCIM_CLPElementCapabilities</td>
<td>CIM_ElementCapabilities</td>
</tr>
<tr>
<td>CCIM_CLPServiceAffectsAdminDomain</td>
<td>CIM_ServiceAffectsElement</td>
</tr>
<tr>
<td>CCIM_HostedTCPAccessPoint</td>
<td>CIM_HostedAccessPoint</td>
</tr>
<tr>
<td>CCIM_CLPAccessByTCP</td>
<td>CCIM_CLPAccessByTCP</td>
</tr>
</tbody>
</table>
Fan Profile

The specification for this profile can be found at this URL:
http://www.dmtf.org/standards/published_documents/DSP1013_1.0.1.pdf

This profile supports the following classes:

<table>
<thead>
<tr>
<th>Cisco Class</th>
<th>CIM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCIM_Fan</td>
<td>CIM_Fan</td>
</tr>
<tr>
<td>CCIM_FanRedundancySet</td>
<td>CIM_RedundancySet</td>
</tr>
<tr>
<td>CCIM_FanMemberOfCollection</td>
<td>CIM_MemberOfCollection</td>
</tr>
<tr>
<td>CCIM_AssociatedCooling</td>
<td>CIM_AssociatedCooling</td>
</tr>
<tr>
<td>CCIM_FanOwningCollectionElement</td>
<td>CIM_OwningCollectionElement</td>
</tr>
<tr>
<td>CCIM_CHostedFanRedundancy</td>
<td>CIM_HostedCollection</td>
</tr>
<tr>
<td>CCIM_FanSetCollection</td>
<td>CIM_ConcreteCollection</td>
</tr>
<tr>
<td>CCIM_FanSetMemberOfCollection</td>
<td>CIM_MemberOfCollection</td>
</tr>
<tr>
<td>CCIM_OwningFanSetCollectionElement</td>
<td>CIM_OwningCollectionElement</td>
</tr>
</tbody>
</table>

Indicator LED Profile

The specification for this profile can be found at this URL:
http://www.dmtf.org/standards/published_documents/DSP1074_1.0.0.pdf

This profile supports the following classes:

<table>
<thead>
<tr>
<th>Cisco Class</th>
<th>CIM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCIM_IndicatorLED</td>
<td>CIM_IndicatorLED</td>
</tr>
<tr>
<td>CCIM_IndicatorLEDCapabilities</td>
<td>CIM_IndicatorLEDCapabilities</td>
</tr>
<tr>
<td>CCIM_AssociatedIndicatorLED</td>
<td>CIM_AssociatedIndicatorLED</td>
</tr>
<tr>
<td>CCIM_LEDElementCapabilities</td>
<td>CIM_ElementCapabilities</td>
</tr>
<tr>
<td>CCIM_FaultDiagnosisLED</td>
<td>CIM_IndicatorLED</td>
</tr>
<tr>
<td>CCIM_FaultDiagnosisLEDCapabilities</td>
<td>CIM_IndicatorLEDCapabilities</td>
</tr>
<tr>
<td>CCIM_LEDCollection</td>
<td>CIM_ConcreteCollection</td>
</tr>
<tr>
<td>CCIM_LEDMemberOfCollection</td>
<td>CIM_MemberOfCollection</td>
</tr>
</tbody>
</table>

Modifiable Properties

The following properties of this profile can be modified:

<table>
<thead>
<tr>
<th>Property</th>
<th>Class</th>
<th>Required User Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>ActivationState</td>
<td>CCIM_IndicatorLED</td>
<td>user or admin</td>
</tr>
</tbody>
</table>
Physical Asset Profile

The specification for this profile can be found at this URL:
http://www.dmtf.org/standards/published_documents/DSP1011_1.0.2.pdf

This profile supports the following classes:

<table>
<thead>
<tr>
<th>Cisco Class</th>
<th>CIM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCIM_PhysicalAssetCapabilities</td>
<td>CIM_PhysicalAssetCapabilities</td>
</tr>
<tr>
<td>CCIM_CPUChip</td>
<td>CIM_Chip</td>
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<tr>
<td>CCIM_CPUSlot</td>
<td>CIM_Slot</td>
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<tr>
<td>CCIM_BaseBoard</td>
<td>CIM_Card</td>
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<tr>
<td>CCIM_MemoryRiser</td>
<td>CIM_Card</td>
</tr>
<tr>
<td>CCIM_MemoryRiserSlot</td>
<td>CIM_Slot</td>
</tr>
<tr>
<td>CCIM_MemorySlot</td>
<td>CIM_Slot</td>
</tr>
<tr>
<td>CCIM_ChassisFanPhysicalComponent</td>
<td>CIM_PhysicalComponent</td>
</tr>
<tr>
<td>CCIM_ChassisFanSlot</td>
<td>CIM_Slot</td>
</tr>
<tr>
<td>CCIM_PowerSupplyPhysicalComponent</td>
<td>CIM_PhysicalComponent</td>
</tr>
<tr>
<td>CCIM_PowerSupplySlot</td>
<td>CIM_Slot</td>
</tr>
<tr>
<td>CCIM_StoragePhysicalComponent</td>
<td>CIM_PhysicalComponent</td>
</tr>
<tr>
<td>CCIM_StorageSlot</td>
<td>CIM_Slot</td>
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<tr>
<td>CCIM_PhysicalAssetElementCapabilities</td>
<td>—</td>
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<tr>
<td>CCIM_ChassisContainer</td>
<td>CIM_Container</td>
</tr>
<tr>
<td>CCIM_BaseBoardContainer</td>
<td>CIM_Container</td>
</tr>
<tr>
<td>CCIM_MemoryRiserContainer</td>
<td>CIM_Container</td>
</tr>
<tr>
<td>CCIM_ChassisFanInSlot</td>
<td>CIM_PackageInConnector</td>
</tr>
<tr>
<td>CCIM_PowerSupplyInSlot</td>
<td>CIM_PackageInConnector</td>
</tr>
<tr>
<td>CCIM_StorageInSlot</td>
<td>CIM_PackageInConnector</td>
</tr>
<tr>
<td>CCIM_CPUInSlot</td>
<td>CIM_PackageInConnector</td>
</tr>
<tr>
<td>CCIM_MemoryRiserInSlot</td>
<td>CIM_PackageInConnector</td>
</tr>
<tr>
<td>CCIM_ChassisFanRealizes</td>
<td>CIM_Realizes</td>
</tr>
<tr>
<td>CCIM_CPURealizes</td>
<td>CIM_RealizesProcessor</td>
</tr>
<tr>
<td>CCIM_PowerSupplyRealizes</td>
<td>CIM_Realizes</td>
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</table>
Power State Management Profile

The specification for this profile can be found at this URL:
http://www.dmtf.org/standards/published_documents/DSP1027_1.0.1.pdf

This profile supports the following classes:

<table>
<thead>
<tr>
<th>Cisco Class</th>
<th>CIM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCIM_CSPowerManagementService</td>
<td>CIM_PowerManagementService</td>
</tr>
<tr>
<td>CCIM-CSAssociatedPowerManagementService</td>
<td>CIM_AssociatedPowerManagementService</td>
</tr>
<tr>
<td>CCIM_PMSElementCapabilities</td>
<td>CIM_ElementCapabilities</td>
</tr>
<tr>
<td>CCIM_CSPowerManagementCapabilities</td>
<td>CIM_PowerManagementCapabilities</td>
</tr>
</tbody>
</table>

Modifiable Properties

The following properties of this profile can be modified:

<table>
<thead>
<tr>
<th>Property</th>
<th>Class</th>
<th>Required User Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>RequestPowerChange</td>
<td>CCIM_CSPowerManagementService</td>
<td>user or admin</td>
</tr>
</tbody>
</table>

Power Supply Profile

The specification for this profile can be found at this URL:
http://www.dmtf.org/standards/published_documents/DSP1015_1.1.0.pdf

This profile supports the following classes:

<table>
<thead>
<tr>
<th>Cisco Class</th>
<th>CIM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCIM_PowerRedundancySet</td>
<td>CIM_RedundancySet</td>
</tr>
<tr>
<td>CCIM_PowerSupply</td>
<td>CIM_PowerSupply</td>
</tr>
<tr>
<td>CCIM_PSMemberOfCollection</td>
<td>CIM_MemberOfCollection</td>
</tr>
<tr>
<td>CCIM_PSOwningCollectionElement</td>
<td>CIM_OwningCollectionElement</td>
</tr>
<tr>
<td>CCIM_CSHostedPowerRedundancy</td>
<td>CIM_HostedCollection</td>
</tr>
<tr>
<td>CCIM_PSAssociatedSensor</td>
<td>CIM_AssociatedSensor</td>
</tr>
</tbody>
</table>
Profile Registration Profile

The specification for this profile can be found at this URL:
http://www.dmtf.org/standards/published_documents/DSP1033_1.0.0.pdf

This profile supports the following classes:

<table>
<thead>
<tr>
<th>Cisco Class</th>
<th>CIM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCIM_ElementConformsToProfile</td>
<td>CIM_ElementConformsToProfile</td>
</tr>
<tr>
<td>CCIM_RegisteredProfile</td>
<td>CIM_RegisteredProfile</td>
</tr>
<tr>
<td>CCIM_ElementConformsToProfile</td>
<td>CIM_ElementConformsToProfile</td>
</tr>
<tr>
<td>CCIM_CSReferencedProfile</td>
<td>CIM_RegisteredProfile</td>
</tr>
<tr>
<td>CCIM_SPReferencedProfile</td>
<td>CIM_RegisteredProfile</td>
</tr>
</tbody>
</table>

Record Log Profile

The specification for this profile can be found at this URL:
http://www.dmtf.org/standards/published_documents/DSP1010_2.0.0.pdf

This profile supports the following classes:

<table>
<thead>
<tr>
<th>Cisco Class</th>
<th>CIM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCIM_SELRecordLog</td>
<td>CIM_RecordLog</td>
</tr>
<tr>
<td>CCIM_SELLogEntry</td>
<td>CIM_LogEntry</td>
</tr>
<tr>
<td>CCIM_SELLogManagesRecord</td>
<td>CIM_LogManagesRecord</td>
</tr>
<tr>
<td>CCIM_CSUseOfLog</td>
<td>CIM_UseOfLog</td>
</tr>
<tr>
<td>CCIM_SysRecordLog</td>
<td>CIM_RecordLog</td>
</tr>
<tr>
<td>CCIM_SysLogEntry</td>
<td>CIM_LogEntry</td>
</tr>
<tr>
<td>CCIM_SysLogManagesRecord</td>
<td>CIM_LogManagesRecord</td>
</tr>
<tr>
<td>CCIM_SPUseOfLog</td>
<td>CIM_UseOfLog</td>
</tr>
</tbody>
</table>

Modifiable Properties

The following properties of this profile can be modified:

<table>
<thead>
<tr>
<th>Property</th>
<th>Class</th>
<th>Required User Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>ClearLog</td>
<td>CCIM_SELRecordLog</td>
<td>user or admin</td>
</tr>
</tbody>
</table>
Sensors Profile

The specification for this profile can be found at this URL:
http://www.dmtf.org/standards/published_documents/DSP1009_1.0.2.pdf

This profile supports the following classes:

<table>
<thead>
<tr>
<th>Cisco Class</th>
<th>CIM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCIM_Sensor</td>
<td>CIM_Sensor</td>
</tr>
<tr>
<td>CCIM_NumericSensor</td>
<td>CIM_NumericSensor</td>
</tr>
<tr>
<td>CCIM_AssociatedSensor</td>
<td>CIM_AssociatedSensor</td>
</tr>
<tr>
<td>CCIM_CSSensorsConcreteCollection</td>
<td>CIM_ConcreteCollection</td>
</tr>
<tr>
<td>CCIM_CSSensorsMemberOfCollection</td>
<td>CIM_MemberOfCollection</td>
</tr>
</tbody>
</table>

Modifyable Properties

The following properties of this profile can be modified:

<table>
<thead>
<tr>
<th>Property</th>
<th>Class</th>
<th>Required User Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>LowerThresholdNonCritical</td>
<td>CCIM_NumericSensor</td>
<td>admin</td>
</tr>
<tr>
<td>LowerThresholdCritical</td>
<td>CCIM_NumericSensor</td>
<td>admin</td>
</tr>
<tr>
<td>LowerThresholdFatal</td>
<td>CCIM_NumericSensor</td>
<td>admin</td>
</tr>
<tr>
<td>UpperThresholdNonCritical</td>
<td>CCIM_NumericSensor</td>
<td>admin</td>
</tr>
<tr>
<td>UpperThresholdCritical</td>
<td>CCIM_NumericSensor</td>
<td>admin</td>
</tr>
<tr>
<td>UpperThresholdFatal</td>
<td>CCIM_NumericSensor</td>
<td>admin</td>
</tr>
</tbody>
</table>

Service Processor Profile

The specification for this profile can be found at this URL:
http://www.dmtf.org/standards/published_documents/DSP1018_1.0.0.pdf

This profile supports the following classes:

<table>
<thead>
<tr>
<th>Cisco Class</th>
<th>CIM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCIM_SPComputerSystem</td>
<td>CIM_ComputerSystem</td>
</tr>
<tr>
<td>CCIM_TimeService</td>
<td>CIM_TimeService</td>
</tr>
<tr>
<td>CCIM_SPHostedService</td>
<td>CIM_HostedService</td>
</tr>
<tr>
<td>CCIM_SystemComponent</td>
<td>CIM_SystemComponent</td>
</tr>
</tbody>
</table>

Modifyable Properties

The following properties of this profile can be modified:

<table>
<thead>
<tr>
<th>Property</th>
<th>Class</th>
<th>Required User Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>ManageTime</td>
<td>CCIM_TimeService</td>
<td>read-only, user, or admin</td>
</tr>
</tbody>
</table>
## System Memory Profile

The specification for this profile can be found at this URL:

http://www.dmtf.org/standards/published_documents/DSP1026_1.0.0.pdf

This profile supports the following classes:

<table>
<thead>
<tr>
<th>Cisco Class</th>
<th>CIM Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCIM_Memory</td>
<td>CIM_Memory</td>
</tr>
<tr>
<td>CCIM_PhysicalMemory</td>
<td>CIM_PhysicalMemory</td>
</tr>
<tr>
<td>CCIM_MemoryRealizes</td>
<td>CIM_Realizes</td>
</tr>
</tbody>
</table>
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