

CIM Explorer - Help Manual

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1 Welcome to CIM Explorer

Accessing data about a computer has never been easier!



CIM Explorer is the premier tool for accessing managed data about any local or remotely connected computer. Whether you are using Windows Management Instrumentation (WMI) or Common Information Model (CIM), CIM Explorer is the tool of choice. Let CIM Explorer help you get a handle on classes along with their properties and methods.

For a complete list of current features, visit the <u>CIM Explorer product page</u>.

About this documentation

This help is designed to show you how to use CIM Explorer and also as an ongoing reference while you are working with the tool. You can do a quick overview to get started, work through the topics in detail, and refer back to this guide for additional information when needed.

Getting started - new users

- Download and install CIM Explorer.
- Quickly learn the basics of the program in <u>Getting Started</u> 10.
- Visit the support forum to get help from SAPIEN staff and other experienced CIM Explorer users.

2 Introduction

This section provides an overview of the CIM Explorer features, lets you know how to get answers to your questions, and shows you how to purchase directly online or through a reseller.

2.1 About CIM Explorer

CIM Explorer allows you to use Common Information Model (CIM) and Windows Management Instrumentation (WMI) to view the vast landscape of managed data on any computer. Utilizing a simple, intuitive design, CIM Explorer enables newcomers and experts alike to be more productive.

Key Features

- View all CIM and WMI managed data in a hierarchical tree structure, including namespaces and classes.
- View all properties and methods of a class, with help descriptions.
- Search for text in the name or description of a class, property, method, or all of the above, and then filter the results.
- Explore and query any class on a local or remote computer. Use CIM Explorer preset queries or write your own.
- Run in PowerShell or PowerShell Core. Click to run a <u>Get-CimInstance</u> command for any class or property in the built-in Windows PowerShell console.
- Export query results in HTML, XML, CSV, or text format.
- View and run built-in help examples customized for your computer. Or, click to search for the class description in Google or MSDN.

WMI and CIM

Windows Management Instrumentation (WMI) envisions all of Windows hardware and software as a set of management classes that you can use to view and script any Windows system. It's the Microsoft version of <u>WBEM</u>, an industry-wide environment-independent system that abstracts generic computer system features—like physical and logical disks—so you can view, automate, and manage them on any system.

WMI is Microsoft's implementation of the Common Information Model (CIM), an industry standard that represents systems, applications, networks, devices, and other managed components. CIM adheres to the <u>DMTF</u> standard, which makes it ideal for cross-platform environments. The CIM classes are the parent classes upon which the WMI classes are built.

Beginning in Windows PowerShell 3.0, Microsoft recommends using CIM cmdlets, such as <u>Get-</u> <u>CimInstance</u>, instead of the traditional Get-WMIObject cmdlet. Beginning with PowerShell 7, Get-WMIObject is no longer available.

Why use CIM Explorer?

CIM Explorer is like having an assistant who is a CIM and WMI expert. It knows the classes, namespaces, and properties. It caches in advance to speed up searches. It writes queries for you and runs them with a click, either in its handy display or in its Windows PowerShell browser. It knows VBScript and PowerShell, and it teaches you its query language by generating commands that you can view, copy, and reuse.

i See a real-life example of how to use CIM Explorer **5**.

CIM Explorer does not run elevated by default. Some CIM classes and their properties, or methods, require elevation. You will need to run CIM Explorer elevated to access protected elements.

Product Updates

You can learn about product updates on our blog and in the release build log, and you can also submit product feedback and suggestions.

- Check out the CIM Explorer articles on the SAPIEN blog.
- View the CIM Explorer version history.
- Submit feedback and suggestions.

2.2 Real-life Example

Below is an example of how CIM Explorer can be used in a real-life scenario:

You work in IT Support, and you get a call about a failing battery in a user's computer. Instead of trying to get information from the busy and inexperienced user, you decide to use Windows Power-Shell.

You do not know which of the hundreds of CIM and WMI classes contain information about the battery. You can use Get-CimInstance -List, but it's quicker to launch CIM Explorer and search for battery classes.

You start by connecting to the user's computer from CIM Explorer.

• On the Home tab > in the CIM section, click Connect and then connect to the user's computer.

Connect		×
Computer:	\\Marketing_331B	 ОК
Root	\root	Cancel
User:	Admin01	
Password	•••••	

Next, you search for battery classes on the target computer. To make the search as efficient as possible, you uncheck all **Search in** options other than **Class names**.



for the Home tab > in the Find section, click the Search icon.

The search results appear in the Output panel.

Introduction

Output		▼ 4	×
Name	Туре	Namespace	
CIM_AssociatedBattery	Class	\root\CIMV2	
✓CIM_Battery	Class	\root\CIMV2	
Win32_Battery	Class	\root\CIMV2	
Win32_PortableBattery	Class	\root\CIMV2	
SatteryCycleCount	Class	\root\WMI	
BatteryFullChargedCapacity	Class	\root\WMI	
SatteryRuntime	Class	\root\WMI	
PatteryStaticData	Class	\root\WMI	
PatteryStatus	Class	\root\WMI	
BatteryStatusChange	Class	\root\WMI	
BatteryTagChange	Class	\root\WMI	
BatteryTemperature	Class	\root\WMI	

You are not familiar with these classes, so you use the **Class** and **Property/Method** displays to scan the properties for the ones that would be useful. You settle on the **Win32_PortableBattery** class.

Class	1	Description
✓Win32_PointingDevice		The Win32_PointingDevice class represents an input device used to point to and select regions on the display of a Win32 compute
Win32_PortableBattery		The Win32_PortableBattery class contains the the population of the DMTF Portable Battery group, as defined in the DMTF Mobile
Superior Win32_PortConnector		The Win32_PortConnector class represents physical connection ports, such as DB-25 pin male, Centronics, and PS/2.
Property / Method	CIMType / .NET Type	Description
🥩 ManufactureDate	string / System.String	The ManufactureDate property identifies the date when the battery was manufactured.
Manufacturer 🖉	string / System.String	The Manufacturer property indicates the manufacturer of the battery.
MaxBatteryError	uint16 / System.UInt16	The MaxBatteryError property indicates the difference between the highest estimated amount of energy left in the battery and
MaxRechargeTime	uint32 / System.UInt32	MaxRechargeTime indicates the maximum time, in minutes, to fully charge the battery. This property represents the time to r
🧼 Name	string / System.String	
PNPDeviceID	string / System.String	Indicates the Win32 Plug and Play device ID of the logical device. Example: *PNP030b
PowerManagementCapabilities	uint16 / System.UInt16	Indicates the specific power-related capabilities of the logical device. The array values, 0="Unknown", 1="Not Supported" anc
PowerManagementSupported	boolean / System.Boolean	Boolean indicating that the Device can be power managed - ie, put into a power save state. This boolean does not indicate th
SmartBatteryVersion	string / System.String	The Smart Battery Data Specification version number supported by this battery. If the battery does not support this function, t
🧼 Status	string / System.String	
🥩 StatusInfo	uint16 / System.UInt16	StatusInfo is a string indicating whether the logical device is in an enabled (value = 3), disabled (value = 4) or some other (1) c
SystemCreationClassName	string / System.String	The scoping System's CreationClassName.

Then you run a basic query on the **Win32_PortableBattery** class on the user's computer. You find two portable batteries, one in back and one in front.

in the Class window > right-click Win32_PortableBattery, and then click Query this.

Output											→ ₽ ×
	Availability	BatteryStatus	CapacityMultiplier	Caption	Chemistry	ConfigManagerErrorCode	ConfigManagerUserConfig	CreationClassName	Description	DesignCapacity	DesignVoltage
1				Portable Battery				Win32_PortableBattery	Portable Battery		11250
2				Portable Battery				Win32_PortableBattery	Portable Battery	26330	11400

To drill down, you examine the property values for the suspect battery and find the information needed.

Click a battery class entry > in the **Query** section of the ribbon, click **Property List**.

Introduction

Output		
	Property	Value
21	Location	Front
22	ManufactureDate	
23	Manufacturer	SANYO
24	MaxBatteryError	0
25	MaxRechargeTime	
26	Name	00HW022
27	PNPDeviceID	
28	PowerManagementCapabilities	
29	PowerManagementSupported	
30	SmartBatteryVersion	03.01
31	Status	

You export the information to a CSV file for your records.

if In the Export section of the ribbon > click CSV.

Query 2 PowerS	Query 2 y List PowerShell Por	werShell PowerShe) В 13 Б 26 3 Б	 ✓ PowerShell ✓ Help ✓ 	Query Results Search Results	(† 12 12 12 12 12 12 12 12 12 12 12 12 12 1
Query	Script	Code	Export	Find	Viev	N	User-Defined Tools
Class Win32_Pointin Win32_Portab Win32_PortCo	Save As $\leftarrow \rightarrow \checkmark \uparrow \square$	> This PC > Do	ocuments >	~ Ŭ	♀ Search Doc	uments	splay of a Wir ined in the D
Property / Metho	File name Save as type	: PortableBattery : CSV Files (*.csv)					
 Availability BatteryStatus CapacityMulti 							bility property harged" (value r of the Desig
Caption Chemistry	✓ Browse Folders ErrorCode	uint32 / System.Ulr	it32	Indicates the Win32 Cor	Save	Cancel	e following values n

You would like to use this query in some scripts so you run it in the CIM Explorer PowerShell console. Then, you copy the PowerShell command into your script.

In the Query section of the ribbon, click **PowerShell** > then **right-click PowerShell** and click **Copy PowerShell Code**.

Output		▼ Ŧ ×
Microsoft Windows PowerShell 64 bit		•
PS C:\Program Files\SAPIEN T	<pre>Fechnologies, Inc\CIM Explorer > Get-CIMInstance -ClassName Win32_PortableBattery -NameSpace root\CIMV2</pre>	^
Caption	: Portable Battery	
Description	: Portable Battery	
InstallDate		
Name	: 00HW022	
Status		
Availability		
ConfigManagerErrorCode		
ConfigManagerUserConfig		
CreationClassName	: Win32 PortableBattery	
DeviceID	: Portable Battery 0	
ErrorCleared		
ErrorDescription		
LastErrorCode		
PNPDeviceTD		
PowerManagementCanabilities		
PowerManagementSupported		
StatusInfo		
Suctom(nootion(loccNomo	·	
Systemereactoriciassiname	. winsz_computersystem	\sim
Help Search results Query results	Windows PowerShell	A D

2.3 How to Buy CIM Explorer

You can buy CIM Explorer online with all major credit cards. As soon as your transaction completes you can download and install the program.

For answers to your pre-order questions, check out the <u>SAPIEN Frequently Asked Questions</u> or post in the <u>Trial Software / Pre-sales Technical Questions</u> forum.

Order link and CIM Explorer product page

Online orders:

https://www.sapien.com/store/cim-explorer

Worldwide authorized resellers:

https://www.sapien.com/company/resellers

CIM Explorer product page:

https://www.sapien.com/software/cimexplorer

3 Getting Started

This section provides information to help you install CIM Explorer and keep it up-to-date.

3.1 Installing CIM Explorer

To get started using CIM Explorer, follow the instructions below to download and install the program.

Downloading CIM Explorer

All SAPIEN Technologies software products are downloadable only. Download registered products from your <u>SAPIEN Account Registered Products page</u>.

Select the 64-bit version of CIM Explorer to download. The installer software will save to your default download folder (e.g., *CIM24Setup_2.4.111_010424_x64.exe*).

Starting with the CIM Explorer 2020 product release, 32-bit versions are no longer available. Current owners of a license that includes a 32-bit product will have access to that from their <u>SAPIEN Account Registered Products page</u>.

Want to try before you buy? You can download a trial version here.

Installing CIM Explorer

Follow these instructions to install CIM Explorer.

How to install CIM Explorer

- 1. In your default download folder, double-click on the downloaded program (e.g., *CIM24Setup_2.4.111_010424_x64.exe*).
- 2. Reply Yes to the "Do you want to allow this app to make changes to your device?" prompt.

The installation wizard will first check several items, such as available disk space and the presence of previous builds. If the environment is adequate, the installer will display the legal agreement which you must accept to proceed:

- a. Read the terms of the license agreement.
- **b.** Accept the terms of the license agreement. You should never accept license terms unless you have read them, and you understand them.
- c. Once you have accepted the terms, click Install.

🛈 The software will install in the default location as shown, unless you change the path.



3. The installation may take several minutes.

1 The install time may take longer if the setup determines that some of the prerequisites needed to run CIM Explorer are missing.

Getting Started

	×
SAPIEN Technologies, Inc.	
Please wait while the Setup Wizard installs CIM Explorer. This may take several minutes.	
Status: Building WMI Cache	1

4. CIM Explorer will build the WMI cache.



5. When CIM Explorer successfully completes the installation, click Finish.



Troubleshooting Installation

If you encounter problems installing CIM Explorer, please report them in the <u>Installation Issues support forum</u>.

Activating and Deactivating CIM Explorer

Software activations are outlined in our <u>End-User License Agreement</u>. The number of activations allowed will differ depending on your type of license. For Perpetual Licenses, each licensed user is allowed to have a maximum of two devices activated and operating at any given time for personal use. For <u>Subscriptions</u>*, each licensed user is allowed to have the software activated on a total of 20 devices with a maximum of two devices operating simultaneously at any given time for personal use.

Product Activation

Registration is required to activate and operate the product, and also to obtain any customer service

or technical support benefits. Registration only takes a few moments to complete and provides you with access to special offers including preferred pricing on renewals. *You will need an active internet connection to complete product registration*.

An active internet connection may not be required if you have a legitimate reason for needing <u>offline</u> <u>access</u>. To request offline activation <u>please fill out this request</u>. All requests are considered on a caseby-case basis. Please note: Activation keys belonging to <u>Subscriptions</u>* are not eligible for Offline Activation.

* Information about software activations for Subscriptions only applies to SAPIEN Technologies products with a Subscription purchase offer.

To activate CIM Explorer

The first time you launch a SAPIEN product, the Welcome screen is displayed.

Welcome to			×
	Welcome to the Trial version of		Continue
	Your remaining trial period is 45 day(s).		Buy Now
	If your trial has expired you can use the "Buy Now" but immediately unlock your copy of	tton on the right to purchase and	Cancel
	If you have an Activation Key, please enter or paste yo	our information in the fields below.	
	Username:	Create account	
	Password:	Activation file	
	Activation Key:		
	Note: Username and password are not required when u	using an offline activation file.	
			Version

The steps to activate the product vary depending on whether or not you already have a SAPIEN account.

Follow the steps in the <u>Quick Guide to SAPIEN Software Activation</u> to activate the software.

If you are unable to activate the product, contact <u>sales@sapien.com</u>.

Product Deactivation

Removing a software activation, also known as "deactivating", allows you to free up an activation for use on another device.

You may deactivate your devices to free up your activations at your leisure, but there are certain circumstances where proper deactivation is crucial to prevent the loss of your allotted activations 13.

Uninstalling the software from your device does *not* deactivate the activation key.

To deactivate your activation key

In the top-right of CIM Explorer above the ribbon, click the Activation Information button.



The Activation Information window will open.

Follow the steps in the <u>SAPIEN Software Activation / Deactivation FAQ</u> to deactivate your activation key.

3.2 Staying Up-to-date

We are continually updating CIM Explorer, both to remove bugs and to add and improve product features. We recommend always staying current with the most recent version to ensure that you are taking advantage of the latest features, functionality, and product stability.

🛈 The details for every CIM Explorer release are available in the <u>version history</u>.

Check for Updates

By default, CIM Explorer will automatically check for software updates. You can also manually check for updates.

To check for updates

• On the **Tools** ribbon (Updates section) > click **Check Now** to open the <u>SAPIEN Updates</u> tool and see if there is a new CIM Explorer build available:



3.3 Getting Help

This help manual has been designed to provide all the information you will need for using CIM Explorer. In addition to the information in this guide, you can also ask questions in the <u>online support forums</u> [16].

Wiew CIM Explorer product feature demonstrations and release details on <u>our blog</u>.

Accessing the help manual

To view the help manual online

- In CIM Explorer, select the **Tools** ribbon > then in the **Help** section, click **View Manual**.
- The SAPIEN Information Center provides direct access to <u>all of the SAPIEN product manuals</u>.

User forums and support

Every registered CIM Explorer perpetual license with active maintenance includes basic support in our <u>CIM Explorer product support forum</u>.

i If your CIM Explorer maintenance has expired, you must <u>renew</u> in order to obtain support.

Support Forums

Use the SAPIEN forums to get help with CIM Explorer, get answers to your scripting questions, submit feature requests, and more.

- <u>CIM Explorer forum</u>
- <u>CIM Explorer feature requests</u>
- <u>Scripting support forums</u>
- <u>All SAPIEN support options</u>

To report a problem in the CIM Explorer forum, you will need to provide your SAPIEN product and OS version information.

How to copy version information

To report a problem in the <u>CIM Explorer forum</u>, you will need to include the product version and build, and also your OS version and build—and indicate 32 or 64-bit for each.

To copy the required version information

1. Click the About button in the top-right of the CIM Explorer workspace.

- 2. In the About CIM Explorer window, select Copy Version Info.
- **3.** Paste the version information into your <u>CIM Explorer forum</u> post.

4 Basic Orientation

This section shows you how to easily customize your workspace, and explains the basic tasks you will use when working with CIM Explorer. The topics are presented roughly in the order that you would perform the tasks.

4.1 Customizing Your Workspace

The CIM Explorer workspace can be easily customized to suit your personal preference.

Changing the color themed style

You can change the style (color theme) of the application to a predefined style.

To change the style

• Click the Style menu on the top-right of the CIM Explorer window, then select a style:



Manipulating workspace elements and the Ribbon

Output window

The Output window at the bottom of the CIM Explorer workspace can be resized, hidden, floated, or docked:



The Ribbon

The tabbed ribbon automatically resizes and compresses as you adjust the size of the CIM Explorer application.

You can also easily hide the ribbon.

To minimize the ribbon

• On the top-right above the ribbon, **click the arrow** to the left of the Send Feedback button (*Ctrl+F1*):



4.2 Find the Current Computer

This is the first in a series of brief topics to help you quickly get oriented to using CIM Explorer.

By default, CIM Explorer displays and queries CIM/WMI on the local computer.

The name of the current computer is displayed in the title bar at the top of the screen and in the status bar at the bottom of the screen.



4.3 Search

Search is one of the most valuable features of CIM Explorer. You can search for a phrase in the name or description of a CIM or WMI class, property, or method. You can also filter your search to make it more efficient.

- **w** Looking for the **Win32_*** classes? They're in the CIMV2 namespace.
 - In the namespace tree, click CIMV2.
 - Then, in the Class window, click any entry, and then type W.

CIM Explorer has two related features, <u>Search</u> and <u>Find</u> 3.

w Start with **Search**, and then, if you need to filter further, use **Find**.

Search finds a text string in the name or description of a class, property, or method.

To start a search

1. To start a search, in the Find section of the menu, click Search.



2. In Search for, type the search phrase.

🛈 Search is literal, so don't enter wildcard characters (*), quotation marks, or escape symbols.

Set the Scope and Search in attributes.

Search				×
Search for: disk				ОК
Scope All namespaces			•	Cancel
 Search in ✓ Class nam ✓ Class descriptio 	 ✓ Property names ✓ Property descriptions 	 ✓ Method names ✓ Method descriptions 		

3. You can also select a Filter (either before or after the search completes).



4. View the results in the **Search results** pane. (It's one of the tabs in the Output window at the bottom of the screen.)

Output		▲ 廿 ×
Name	Туре	Namespace
CIM_ManagedSystemElement	Description	\root\CIMV2\power\MS_409
CIM_ManagedSystemElement	Description	\root\CIMV2\power
CIM_CacheMemory	Description	\root\CIMV2
CIM_Chassis	Description	\root\CIMV2
CIM_DiskDrive	Class	\root\CIMV2
CIM_DiskDrive	Description	\root\CIMV2
CIM_DisketteDrive	Class	\root\CIMV2
CIM_DisketteDrive	Description	\root\CIMV2
CIM_DiskPartition	Class	\root\CIMV2
CIM_DiskPartition	Description	\root\CIMV2
CIM_DiskSpaceCheck	Class	\root\CIMV2
CIM_DiskSpaceCheck	Description	\root\CIMV2
Help Search results Query results Windows	PowerShell	
Namespace: \\LAPTOP- \root\CIMV2	1218 classes of 1218 shown	

5. To review the results, **double-click each entry** in Search results. Or, in the Find section of the menu, click **Previous Result** and **Next Result**.



6. When you select an entry in Search results, the class and its members appear in the Class and Property/Method panes.

Basic Orientation

CIMV2 Class Class Class Class Class Cli Cli Cli Cli Cli Cli Cli Cli	otServiceAccessBvSAP cheMemory d dInSlot dOnCard ROMDrive	Description CIM BootServiceAcces Capabilities and manage The CIM_Card class rep Slots are special types Cards may be plugged The CIM_CDROMDrive	sBvSAP is the relationship be gement of cache memory. C presents a type of physical co of connectors into which ad into motherboards/basebo class represents a CD-ROM	etween a boot service an ache memory is dedicate ontainer that can be plug apter cards are inserted. ards, are daughtercards c drive on the system.
 Intel Intel_ME Interop Lenovo Microsoft Associat Availabi BlockSiz 	Method nalErrorData iivity lity re	CIMType / .NET Type uint16 / System.UInt16 uint8 / System.Byte uint16 / System.UInt16 uint16 / System.UInt16 uint64 / System.UInt64	Description Access describes wh An array of octets h An integer enumera The availability and Size in bytes of the	hether the media is reada olding additional error in tion defining the system status of the device. For blocks which form this St
Output				→ ₽ ×
Name CIM_ManagedSystemElement CIM_CacheMemory CIM_Chassis CIM_DickDrive Help_Search results_Ouencresults	Type Description Description Description	Nam \rov \rov \rov	nespace ot\CIMV2\power ot\CIMV2 ot\CIMV2	· · · · · · · · · · · · · · · · · · ·
Namespace: \LAPTOP- \root\CIMV2 1218 dasses of 1218 shown Properties: 46				

4.4 Find a String

The **Find** feature searches for a string in the results of a search or a query.

To find a string

- 1. In the Find section of the menu, type a string.
 - i Find is literal, so don't enter wildcard characters (*), quotation marks, or escape symbols.



2. To find more matches, in the Find section of the menu, click Find Previous and Find Next.

Basic Orientation



4.5 Query

CIM and WMI objects represent the manageable aspects of a computer, including its hardware, software, and environment. When you perform a successful query, the query returns a CIM/WMI object with its properties and methods. You can use that information to manage the computer.

To query CIM/WMI, you can use <u>WMI Query Language (WQL)</u> or the <u>Get-WMIObject</u> or <u>Get-CIMInstance</u> cmdlets. But, CIM Explorer does it for you!

To query all properties of a CIM or WMI class

1. Select a CIM or WMI class.

You can use the Namespace and Class windows to navigate to the class, or use the Search and Find features to find the class.

2. In the Query section of the ribbon, click Query (Ctrl+Q).



-OR-

Right-click the class name and select Query this.

Class	Desc	ription			
Win32_Directory				The	Win32_Di
Win32_DirectorySp		This	class repr		
✓Win32_DiskDrive	m	MSDN Help	Ctrl+	м	Win32_Di
✓Win32_DiskDrivePl	G	Google this	Ctrl+G	Win32_Ph	
✓Win32_DiskDriveT	Ē.	Сору	Ctrl+Shift+	۲C	Win32_Di
✓Win32_DiskPartitic	_				Win32_Di
1		Query this	Ctrl+	·Q	

To query selected properties of a CIM or WMI class

1. Select a CIM or WMI class.

You can use the Namespace and Class windows to navigate to the class, or use the Search and Find features to find the class.

2. In the Property/Method pane, select properties.

to select multiple properties, use *Ctrl+Click* and *Shift+Click*.

3. In the Query section of the ribbon, click **Query** (Ctrl+Q).

Basic Orientation

∑ ₹ File Home Tools		Laptop CIM E	xplorer	
Connect G Google	: ₩ III Query Query Query PowerShell *	PowerShell PowerShell Script Form Studio Project	Text	♪ 時時 70 % 第 8
CIM Filt	ter Query	Code	Export	Find
Appv CIMV2 CMV2 Organized for the second	Class Win32_Directory Win32_DirectorySpecification Win32_DiskDrive Win32_DiskDrivePhysicalMedia Win32_DiskDriveToDiskPartition Win32_DiskDriveToDiskPartition Win32_DiskPartition Vin32_DiskPartition Capability BytesPerSector Capability BytesPerSector Capabilities CapabilityDescriptions Caption CompressionMethod ConfigManagerUserConfig CreationClassName DefaultBlockSize Description DeviceID ErrorCleared CapabilityDescriptions DeviceID	Description The Win32_Direct This class represe The Win32_DiskD Uint16 / System.Ulnt16 Uint32 / System.Ulnt32 uint16 / System.Ulnt16 Cfstring / System.String string / System.String string / System.Ulnt32 uint32 / System.Ulnt32 uint32 / System.Ulnt32 string / System.String String / System.String	tory class represent nts the directory la rive class represen calElementsOfDiskl riveToDiskPartition artition class represent Description The availability and The BytesPerSector Capabilities of the An array of free-for A free form string i ndicates the Win32 ndicates whether t CreationClassName Default block size, The DeviceID prop ErrorCleared is a bo	ts a directory entry on a Wir yout for the product. Each i ts a physical disk drive as se Drive association defines the o class represents an associa sents the capabilities and m distatus of the device. For e property indicates the num media access device. For e m strings providing more and cating the algorithm or configuration Manager e he device is using a user-d e indicates the name of the in bytes, for this device. erty contains a string unique polean property indicating
1 512 Help Search results Query result Namespare: \\\ APTOP-	UJ=Random Access: [1]=Supp \\\PHYSIC	Properties: 51 Methods: 2		

-OR-

Right-click any highlighted item (a class name or a property name) and then click Query this.

Basic Orientation

Class			Description		
✓Win32_Directory			The Win32_	Dire	ectory class represents a directory
✓ Win32_DirectorySpecificat	ion		This class re	pre	sents the directory layout for the p
Win32_DiskDrive			The Win32_	Disk	cDrive class represents a physical c
Win32_DiskDrivePhysicalM	ledia		The Win32_	Phys	sicalElementsOfDiskDrive associat
✓ Win32_DiskDriveToDiskPar	titio	n	The Win32_	Disk	cDriveToDiskPartition class represe
✓Win32_DiskPartition			The Win32_	Disk	Partition class represents the capa
(
Property / Method CIMType / .NET T			Т Туре		Description
Availability		uint16 / Syste	em.UInt16		The availability and status of the
BytesPerSector		uint32 / Syste	em.UInt32	.UInt32 The BytesPerSector pro	
Capabilities		uint16 / Syste	em.UInt16		Capabilities of the media access
CapabilityDescriptions		ctring / Syste	m String		An array of free-form strings pro
Caption	m	MSDN Help	Ctrl+M		
CompressionMethod	Ģ	Google this	Ctrl+G		A free form string indicating the
ConfigManagerErrorCode	"B	Сору	Ctrl+Shift+C		Indicates the Win32 Configuration
ConfigManagerUserConfig		Query this	Ctrl+Q		Indicates whether the device is u
CreationClassName	-	string / Syste	m.string		CreationClassName indicates the
DefaultBlockSize		uint64 / Syste	em.UInt64		Default block size, in bytes, for th
Description		string / System.String			
DeviceID		string / Syste	m.String		The DeviceID property contains a
ErrorCleared		boolean / Sy	stem.Boolean		ErrorCleared is a boolean proper
4					

To get the query command that CIM Explorer ran, in the Query section of the menu, click the arrow key below the Query icon, and then click **Custom Query**:



Custom Query	×
Query: Select BytesPerSector,CapabilityDescriptions,DeviceID from Win32_DiskDrive	OK Cancel

4.6 Query in PowerShell

You can also run CIM/WMI queries in a Windows PowerShell console. CIM Explorer runs a Get-CIMInstance command in the Windows PowerShell console of the Output panel.

To create a PowerShell Query

1. In the Namespace and Class panes, select a class (or search for a class).

To query particular properties of the class, in the Property/Method pane, select the properties.

2. In the Query section on the ribbon, click **PowerShell** (*Ctrl+P*).

÷ 🔽			LAPTOP CI	M Explorer		
File Home	Tools					
Connect G Google	🛠 🍸 🖄 💀	Cancel Query	PowerShell PowerShell	HTML	♪ 牀 iù 7 為 周 馬	✓ PowerShell ✓ Q ✓ Help ✓ Se
CIM	Filter	Query	Code	Export	Find	View
{		Class	Description	LAPOIT		
E CIMV2		≪Win22 BaseSenvice	The Win22 BaseService class repres	ents executable of	piects that are installed in a	registry database m
🖬 { } Cli		Win32 Batteny	The Win32 Batteny class represents	a battery connecte	of to the computer system	This class applies to
{} DEFAULT		Win32_Ballery	Instances of this class represent hina	ny information (su	ch as hitmanns, icons, ever	utables etc.) that are
🖽 🚺 directory		Win32_BindImageAction	The Bindimage action binds each ex	vecutable that nee	ds to be bound to the DLLs	imported by it by co
{} Hardware			The Win32 BIOS class represents the	e attributes of the	computer system's basic in	nut/output services (
Intel					computer system's basic in	put output services (i
		Property / Method	CIMType / .NET Type	Description		
			uint16 / System.UInt16	The availability	and status of the device.	or example, the Avai
Hicrosoft		✓ BattervRechargeTime	uint32 / System.UInt32	The BattervRec	hargeTime property indica	tes the time required
-{} msdtc		✓ BatteryStatus	uint16 / System UInt16 Description of the battery's charge status Value			Values such as "Fully
{ } PEH	-	<			, ,	,
Output						
PowerShell Core 7						
PS C:\Program F:	iles\SAPIEN [·]	Technologies, Inc\CIM Expl	orer> Get-CIMInstance -Cl	assName Wi <u>n32</u>	Battery -NameSpace	root\CIMV2
Caption Description InstallDate Name Status Availability		: Internal Battery : Internal Battery : : 00HW022 : 0K : 2				
	0 1					
Help Search results	Query results	Windows PowerShell				
Namespace: \\LAPTOP\root\CIMV2 1218 classes of 1218 shown Properties: 33 Methods: 2						

3. You can view and copy the output in the Windows PowerShell console and run follow-up com-

mands.

Output	•	ł×
PowerShell Core 7		•
TimeToFullCharge		^
BatteryRechargeTime		
ExpectedBatteryLife		
PSComputerName		
PS C:\Program Files\SAPIEN	Technologies, Inc\CIM Explorer > _	~
Help Search results Query results	Windows PowerShell	4 🖻

To recall the command that CIM Explorer ran, click the arrow key beside the PowerShell icon and then click **Copy PowerShell Code**:



4.7 Export Query Results

You can export the results of the most recent CIM/WMI query to a file and save it on any available file system or cloud service.

To export the results of the most recent query

• In the Export section of the menu, click an output format.



To export the results of the most recent query in PowerShell

• In the Windows PowerShell console in CIM Explorer, recall the command and pipe the result to an Export cmdlet, such as Export-Csv or Export-Clixml.

To export an HTML representation of the query results, use the <u>ConvertTo-Html</u> cmdlet and <u>redir-ect the output</u> (>) or pipe it to the <u>Out-File</u> cmdlet.

Basic Orientation

Output				
Microsoft Wi	indows PowerShell 64 bit			
PS C:\>	Get-CIMInstance -ClassNam	e Win32_Desktop -Na	ameSpace root\CIMV	2
SettingI	D Name	ScreenSaverActive	ScreenSaverSecure	ScreenSaverTimeout
	NT AUTHORITY\SYSTEM LAPTOP- \Paulette .DEFAULT	False False False	False	60
PS C:\> PS C:\> PS C:\>	Get-CIMInstance -ClassNam Get-CIMInstance -ClassNam	e Win32_Desktop -Na e Win32_Desktop -Na	ameSpace root\CIMV ameSpace root\CIMV	2 Export-Clixml -Path .\SAPIEN\DesktopInfo.xml 2 ConvertTo-Html Out-File .\SAPIEN\DesktopInfo.htm
Help Sear	ch results Query results Windows	PowerShell		

5 Remote Connections

You can use CIM Explorer to search and query CIM/WMI on a local or remote computer. This section shows you how to work with remote connections.

5.1 Connect to a Remote Computer

To connect to a remote computer, either make a new connection or select from a list of connected computers.

To connect to a remote computer

- 1. In the CIM group on the ribbon, click Connect.
- 2. In the **Connect box**, type the **computer name**, an **SSH root** (if necessary), and the **credentials** of a user with connection privileges:



To select from a list of connected computers

- 1. In the CIM group on the ribbon, click Connect.
- 2. Click the ellipsis (...) in the Connect box, then select a remote computer and click OK:

Connect		imes iption	
Computer: Root: User:	SAPIEN Vroot	OK CIM_Action is an oper CIM_ActionSequen Cancel AdjacentSlots desc Cancel Cancel	ation that is part o ice association is u ssociation indicate ribes the layout of cent class provides
Password:	CIM_AllocatedResource CIM_ApplicationSystem CIM_ApplicationSystemSoftwareFeature	Browse for Computer Select Remote Computer	×
Vindows Pow /2 1165 cla	Value erShell sses of 1165 shown Properties: 9 Methods: 1	PS3VM	Cancel

i When the command completes, the name of the remote computer appears in the title bar and status bar:



5.2 Disconnect and Reconnect

When you connect to a remote computer, CIM Explorer saves the connection settings for that computer, including the user name and password:



To reconnect to the local computer

• Click the Connect arrow, and select the name of the local computer.

To reconnect to a remote computer

• Click the **Connect arrow**, and select the name of the **remote computer**.

To connect to a new computer

• Click Connect.

5.3 Update Connection Data

When you connect to a remote computer, CIM Explorer saves your connection information, which makes it quick and easy to reconnect.

To update changed credentials

 Click Connect and enter the same computer name with the new credentials. CIM Explorer will automatically update the entry.

To manage stored connection information

• Click the File tab, and then click Servers... > then click a computer name and edit or delete the stored information.

Servers			×
DEVBOX SAPIEN	Computer	DEVBOX	ОК
PS3VM	Root	\root	Cancel
	User.		Remove
	Password	ĺ.	

5.4 Update CIM/WMI Data

To improve CIM Explorer responsiveness, the CIM and WMI structures for the current computer are cached during install. CIM and WMI structures do not change frequently, so the cache does not need to be refreshed for each session. If necessary, you can update the CIM and WMI structures for the local or remote computers as needed.

To update the CIM/WMI cache for a computer

- On the ribbon, click **File** > **Clear Cache**.
- CIM Explorer prompts you for confirmation, explaining that it updates the cache when it connects. Click **Yes** to update the CIM/WMI cache on the local computer.
- 🛈 The cache update may take a few minutes to complete.

5.5 Troubleshooting Connections

Follow the instructions below if you are having issues establishing a connection to a Windows computer from CIM Explorer.

Requirements for enabling CIM Explorer to connect to a remote machine

- Allow Remote Administration through the Windows Firewall.
- Allow remote access to COM security.
- Allow remote access to WMI root namespace and sub-namespaces.

To set these permissions you can <u>run a script</u> that we have provided that sets WMI access permissions for Windows 8 and Windows 10. This script must be run elevated, that is, with the permissions of a member of the Administrators group on the computer.

You can open or copy the script from CIM Explorer, on the Tools tab > Permissions group:



Still need help?

If you have followed these instructions and you still cannot connect, create a post on the SAPIEN <u>CIM Explorer forum</u>.

6 Run in PowerShell

You can run the CIM Explorer search and query features in Windows PowerShell. This feature helps you to automate your CIM/WMI queries and to learn the equivalent Windows PowerShell commands.

6.1 About Windows PowerShell Console

CIM Explorer includes a fully-featured Windows PowerShell console in the Windows PowerShell tab of the Output panel. You can use the console to run any Windows PowerShell or PowerShell Core scripts and commands, as well as import modules, and export objects.

The versions of PowerShell available in the Windows PowerShell panel are determined by the versions that you have installed. The console choices are determined dynamically on startup, so if you install a new PowerShell Core version you simply need to restart CIM Explorer.

The Windows PowerShell console is added, not hosted, so it uses the same Windows PowerShell profile as the standard Windows PowerShell console, *Microsoft.PowerShell_profile.ps1*.

To select a PowerShell version in the Windows PowerShell console

• Click the drop-down arrow in the top-right of the console and select a PowerShell version:

Outpu	t			→ ₽ ×
Micros	soft Windows Pov	verShell 64 bit		
Power	Shell Core 7			
Micros	oft Windows Pov	verShell 64 bit		
Micros	oft Windows Pov	verShell 32 bit		
				· · · · · · · · · · · · · · · · · · ·
Help	Search results	Query results	Windows PowerShell	

Switching between different instances enables you to verify that different CIM and WMI classes can be used from PowerShell Core or from a different bit-level console.

To run a session without your profile

• In the Windows PowerShell panel of CIM Explorer (or any Windows PowerShell console), at the prompt, type:

```
powershell.exe -noprofile
```

To start a new session of Windows PowerShell console in CIM Explorer

• Right-click the console and then click Reset.

6.2 Run a CIM Query in PowerShell

You can run any CIM Explorer query in the PowerShell console in CIM Explorer.

To run a query

- 1. Create a query by selecting a class (with or without properties) or writing a <u>custom query</u> 45
- 2. In the Query group of the ribbon, click **PowerShell** (*Ctrl+P*).



CIM Explorer runs the query in the Windows PowerShell console.

- To run a default query, CIM Explorer uses the <u>Get-CIMInstance</u> cmdlet with the *ClassName* and *Runspace* parameters.
- If the query includes properties, CIM Explorer pipes the output of the *Get-CIMInstance* command to the <u>Format-Table</u> cmdlet. It uses the *Property* parameter with the specified properties as values, and the *AutoSize* parameter which formats the output without extraneous spaces.

To save the output of the command (or any part of the command in a variable)

• In the console, use the up-arrow to recall the last command and then edit the command line.

Output	џ х
Microsoft Windows PowerShell 64 bit	•
PS C:\Program Files\SAPIEN Technologies, Inc\CIM Explorer > Get-CIMInstance -ClassName Win32_LogicalDisk -NameSpace root\CIMV2 Format-Table -Property Caption,Size -AutoSize	^
Caption Size	
C: 510650216448	
PS C:\Program Files\SAPIEN Technologies, Inc\CIM Explorer> ≸disk = Get-CIMInstance -ClassName Win32_LogicalDisk -NameSpace root \CIMV2 Format-Table -Property Caption,Size -AutoSize	
	~
Help Search results Query results Windows PowerShell	

To run a <u>Get-CimInstance</u> command for the Win32_Computer class on the local computer, do not use the *ComputerName* parameter.

6.3 Get the PowerShell Command for a Query

After testing a query in CIM Explorer you might want to add it to a script that you are writing in a Windows PowerShell editor, such as <u>PowerShell Studio</u>, <u>PrimalScript</u>, or <u>PrimalPad</u>.

To get the equivalent Windows PowerShell command for a query

- 1. Create a query by selecting a class (with or without properties) or writing a custom query.
- 2. In the Query group of the ribbon, click the arrow beside **PowerShell** (*Ctrl+P*), and then click **Copy PowerShell Code**.

File H	ome Tools		
Connect CIM	🛠 🍸 🛍 💀 🎫	Query Copy PowerShell PowerShell	PowerShell Studio Project
{		Class 🛛 New PowerShell instan	2 Copy PowerShell Code
CIMV2 CIi OEFAULT		 Win32_LocalTime Win32_LoggedOnUser Win32_LogicalDisk 	Copies the PowerShell code to query for the current selection to the clipboard.
Hardwar	e	Win32_LogicalDiskRootDirector	y

Copy PowerShell Code copies the Windows PowerShell command to your Windows clipboard.

To paste the command in a standard Windows PowerShell console

• Simply right-click.

To paste the command in most other documents and editors, including the PowerShell console in CIM Explorer

• Right-click and select **Paste** (*Ctrl*+*V*).

To edit the command after pasting the command in the CIM Explorer PowerShell console

• You can use the <u>Select-Object</u> cmdlet to specify property names instead of using the <u>Format-Table</u> cmdlet. The result is a custom object (PSCustomObject) that you can pipe to other cmdlets.

```
Get-CimInstance -ComputerName SAPIEN01 -ClassName Win32_LogicalDisk | Select-Object -Property DeviceID, Caption
```

6.4 Show and Hide the Console

The PowerShell console in CIM Explorer appears in the Windows PowerShell tab in the Output panel. By default, the Output panel and its tabs appear at the bottom of the CIM Explorer window.

To display the PowerShell console

• In the Output panel at the bottom of the screen, click the Windows PowerShell tab.

-OR-

• If the Output panel or the tab are hidden, in the View group on the ribbon, click PowerShell.

Run in PowerShell

	LAPTOP CIM Explorer	- 🗆 ×			
File Home Tools		😨 Style 🛛 🔚 🍈			
	Image: Constraint of the state of the st	Jser-Defined Tools			
CIM Filter	Query Code Export Find View				
Appv	Class Description				
e cii	Win32_Binary Instances of this class represent binary information	i (such as bitmap			
DEFAULT	Win32_BindImageAction The BindImage action binds each executable that	needs to be bot			
a () directory	Win32_bio3 The Win32_bio3 class represents the attributes of Win32_bio4Configuration The Win32_BootConfiguration	e hoot configura			
Hardware		. Door coningular			
		~			
		• + *			
Dicrosoff Vindows Powersheller Bit PS C:\Program Files\SAPIEN To -Table -Property BuildNumber, BuildNumber Manufacturer Name	MicrosoftWindows PowerShell64 bit PS C:\Program Files\SAPIEN Technologies, Inc\CIM Explorer> Get-CIMInstance -ClassName Win32_BIOS -NameSpace root\CINV2 Format Table -Property BuildNumber,Manufacturer,Name,SerialNumber,SMBIOSBIOSVersion,Version -AutoSize BuildNumber Manufacturer Name SerialNumber SMBIOSBIOSVersion Version				
LENOVO N1WET41W (1.20) PC0MZ7EV N1WET41W (1.20) LENOVO - 1200 PS C:\Program Files\SAPIEN Technologies, Inc\CIM Explorer >					
Help Search results Query results	ndawa PowerShell				
Namespace: \\LAPTOP-\\root\Cl	VV2 1218 dasses of 1218 shown Properties: 31 Methods: 0	1 a			

To hide the PowerShell console

• In the View group on the ribbon, uncheck PowerShell.

To hide the Output panel (and all of its tabs)

• Right-click the title bar of the Output panel, and then click **Hide**.

Output		▼ ₽ ×
Microsoft Windows PowerShell 64 bit	Floating	•
PS C:\Program Files\SAPIEN Technologies, Inc\CIM Explorer > Get-CIMInstance -ClassName ro -Table -Property BuildNumber,Manufacturer,Name,SerialNumber,SMBIOSBIOSVersion,Version -Aut	Docking Tabbed Document Auto Hide	Â
BuildNumber Manufacturer Name SerialNumber SMBIOSBIOSVersion Version	Hide	
LENOVO N1WET41W (1.20) PC0MZ7EV N1WET41W (1.20) LENOVO - 1200		
PS C:\Program Files\SAPIEN Technologies, Inc\CIM Explorer >		~ ·
Help Search results Query results Windows PowerShell		

7 Create and Run Queries

You can use CIM Explorer to create and run queries on local and remote computers. This section shows you how to run queries and examine query results.

7.1 Ways to Query Data

The simplest way to create and run a query for any CIM or WMI class on the currently connected computer is to select a class and click the Query button, or right-click and select Query this.

To query all properties of a CIM or WMI class

1. Select a CIM or WMI class.

You can use the Namespace and Class windows to navigate to the class, or use the Search and Find features to find the class.

2. In the Query section of the ribbon, click **Query** (Ctrl+Q).



-OR-

Right-click the class name and select Query this.

Class					ription
Win32_Directory				The	Win32_Dir
✓Win32_DirectorySp		This	class repr		
Win32_DiskDrive	m	MSDN Help	Ctrl+	-M	Win32_Dis
✓Win32_DiskDrivePl	G	Google this	Ctrl·	+G	Win32_Phy
✓Win32_DiskDriveT	Ē.	Copy	Ctrl+Shift	+C	Win32_Dis
Win32_DiskPartitic					Win32_Dis
1		Query this	Ctrl	+Q	

To query selected properties of a CIM or WMI class

1. Select a CIM or WMI class.

You can use the Namespace and Class windows to navigate to the class, or use the Search and Find features to find the class.

- 2. In the Property/Method pane, select properties.
 - To select multiple properties, use *Ctrl+Click* and *Shift+Click*.
- 3. In the Query section of the ribbon, click **Query** (Ctrl+Q).

	_		Laptop CIM E	Explorer
File Home	Tools			
Copy	🛠 Y 🌣 💀	Cancel Query	PowerShell PowerShell Script Form Studio Project	HTML Scsv
CIM	Filter	Query	Code	Export Find
Appv CIMV2 CIMV2 Orgonal Orgonal		Class Win32_Directory Win32_DirectorySpecification Win32_DiskDrive Win32_DiskDrivePhysicalMedi Win32_DiskDriveToDiskPartitic Win32_DiskPartition	Description The Win32_Direc This class represe The Win32_DiskE a The Win32_Physic on The Win32_DiskE The Win32_DiskP	tory class represents a directory entry on a Wi ents the directory layout for the product. Each Drive class represents a physical disk drive as s calElementsOfDiskDrive association defines th DriveToDiskPartition class represents an associ Partition class represents the capabilities and n
-{} Hardware -{} Intel -{} Intel -{} Intel_ME -{} Interop		Property / Method Availability BytesPerSector	CIMType / .NET Type	Description The availability and status of the device. For e The BytesPerSector property indicates the nur
{} Lenovo {} Microsoft {} msdtc {} PFH		Capabilities CapabilityDescriptions Caption	uint16 / System.UInt16 string / System.String string / System.String string / System.String	Capabilities of the media access device. For e An array of free-form strings providing more A free form string indicating the algorithm or
		ConfigManagerErrorCode ConfigManagerUserConfig CreationClassName	uint32 / System.UInt32Indicates the Win32 Configuration Maboolean / System.BooleanIndicates whether the device is usingstring / System.StringCreationClassName indicates the namuint64 / System.UInt64Default block size, in bytes, for this de	Indicates the Win32 Configuration Manager e Indicates whether the device is using a user-d CreationClassName indicates the name of the Default block size, in bytes, for this device.
		Description DeviceID ErrorCleared	string / System.String string / System.String boolean / System.Boolean	The DeviceID property contains a string uniqu ErrorCleared is a boolean property indicating
Output				
BytesPerSec	tor Capa [0]=R:	bilityDescriptions DeviceID andom Access: [1]=Supp \\\PHYSI	CALDRIVE0	
Help Search results	Query results \ P- \root\C	Windows PowerShell IMV2 1218 classes of 1218 shown	Properties: 51 Methods: 2	

-OR-

Right-click any highlighted item (a class name or a property name) and then click Query this.

Class			Description			
✓Win32_Directory			The Win32_	Direc	tory class represents a directory	
🔗 Win32_DirectorySpecificati	ion		This class re	prese	ents the directory layout for the p	
Win32_DiskDrive			The Win32_	Disk[Drive class represents a physical c	
Win32_DiskDrivePhysicalM	edia		The Win32_	Physi	calElementsOfDiskDrive associat	
🖉 🖉 Win 32_Disk Drive To Disk Part	titio	n	The Win32_	Disk[DriveToDiskPartition class represe	
✓ Win32_DiskPartition			The Win32_	DiskF	Partition class represents the capa	
Ŕ.						
Property / Method		CIMType / .NET	Туре		Description	
Availability		uint16 / System	n.UInt16		The availability and status of the	
BytesPerSector		uint32 / System.UInt32			The BytesPerSector property inc	
Capabilities		uint16 / System	System.UInt16		Capabilities of the media access	
CapabilityDescriptions		string / System	Ctring		An array of free-form strings pro	
Caption	m	MSDN Help	Ctrl+M			
CompressionMethod	9	Google this	Ctrl+G		A free form string indicating the	
ConfigManagerErrorCode	Ē	Сору С	Ctrl+Shift+C		Indicates the Win32 Configuration	
ConfigManagerUserConfig		Query this	Ctrl+Q		Indicates whether the device is u	
CreationClassName		string / System	.string		CreationClassName indicates the	
DefaultBlockSize		uint64 / System	n.UInt64		Default block size, in bytes, for th	
Description		string / System	.String			
DeviceID		string / System	.String		The DeviceID property contains	
ErrorCleared		boolean / Syste	em.Boolean		ErrorCleared is a boolean prope	
<						

7.2 Run a PowerShell Query

You can run queries in the Windows PowerShell console in CIM Explorer.

i For more details, see <u>Run in PowerShell</u> ြာ ါ.

When you run a query in the PowerShell console, you can view and edit the PowerShell command that CIM Explorer generates, and pipe the command to other cmdlets.

To create a PowerShell Query

1. In the Namespace and Class panes, select a class (or search for a class).

to query particular properties of the class, in the Property/Method pane, select the proper-

ties.

÷ 🔽			LAPTOP CI	M Explorer		
File Home Tools	s					
Connect G Google	۲ 🌣 💀 📰	Cancel Query	PowerShell PowerShell Script Form Studio Project	HTML) 株職 家 冬 周 国	PowerShell 🗹 Q
CIM	Filter	Query	Code	Export	Find	View
Appv	▲ Class		Description			
CIMV2	✓Win32	2_BaseService	The Win32_BaseService class represe	ents executable of	ojects that are installed in a	registry database m
E Cli	🛹 Win32	2_Battery	The Win32_Battery class represents a	a battery connecte	ed to the computer system.	This class applies to
DEFAULT	🔗 Win32	2_Binary	Instances of this class represent bina	ry information (su	ch as bitmapps, icons, exec	utables, etc) that ar
Hardware	🛷 Win32	2_BindImageAction	The BindImage action binds each ex	ecutable that nee	ds to be bound to the DLLs	imported by it by co
	Win32	2_BIOS	The Win32_BIOS class represents the	e attributes of the	computer system's basic in	put/output services (
-{} Intel_ME						
{} Interop	Property	/ Method	CIMType / .NET Type	Description		
{} Lenovo	availa 🖉	bility	uint16 / System.UInt16	The availability	and status of the device.	For example, the Ava
🛄 🚺 Microsoft	🧼 Batter	yRechargeTime	uint32 / System.UInt32	The BatteryRec	hargeTime property indica	tes the time required
	Batter	yStatus	uint16 / System.UInt16	Description of	the battery's charge status.	Values such as "Fully
PEH	▼ 4					
Output						
PowerShell Core 7						
PS C:\Program Files\S	SAPIEN Technolo	gies, Inc\CIM Expl	orer> Get-CIMInstance -Cla	assName Win32_	Battery -NameSpace	root\CIMV2
Caption Description InstallDate Name Status Availability	: Inter : Inter : 00HW0 : OK : 2	nal Battery nal Battery 022				
Help Search results Query	results Windows P	owerShell				
Namespace: \\LAPTOP-	\root\CIMV2 1	218 classes of 1218 showr	Properties: 33 Methods: 2			

2. In the Query section on the ribbon, click **PowerShell** (*Ctrl+P*).

3. You can view and copy the output in the Windows PowerShell console and run follow-up commands.

Output	▼ 9	×
PowerShell Core 7		•
TimeToFullCharge		^
BatteryRechargeTime		
ExpectedBatteryLife		
PSComputerName		
PS C:\Program Files\SAPIEN	Technologies, Inc\CIM Explorer > _	~
Help Search results Query results	Windows PowerShell	

t To recall the command that CIM Explorer ran, click the arrow key beside the PowerShell icon and then click **Copy PowerShell Code**:



7.3 Run a Custom Query

Most CIM/WMI queries are relatively simple, but occasionally you may want to create a more complex query.

To create a custom query

Start with a basic query:

1. Select a CIM or WMI class.

Vou can use the Namespace and Class windows to navigate to the class, or use the <u>Search</u> and <u>Find</u> shows to find the class.

2. [Optional] In the Property/Method pane, select properties.

w To select multiple properties, use *Ctrl*+*Click* and *Shift*+*Click*.

3. On the ribbon, in the Query group, click the arrow under the Query button, and then select **Cus**-**tom Query**.

CIM Explorer displays the current query in WMI Query Language (WQL).

4. In the Custom Query window, edit the original WQL query to **include the custom options**, then click **OK**.

Cancel Query	PowerShell PowerShell PowerShell Script Form Studio Project Code	HTML CSV Export	win32	× 71 F	✓ PowerShell ✓ Help
Class		D	escription		
Win32_AllocatedRes	source	Т	he Win32_Allocate	edResourc	e class represer
Win32_ApplicationC	CommandLine	٦	The ApplicationCo	mmandLii	ne association a
Win32_ApplicationS	iervice	T	he Win32_Applica	tionServic	e class represer
Custom Query	Original			COULC CO	× the auto
Query: Select *	from Win32_ApplicationService		÷	ОК	
Custom Qu	ery Edi	ted			×
logies Query: Se	lect Caption from Win32_ApplicationService	e where StartMode !	= 'Manual'		OK Cancel

7.4 Examine Query Results

When you run a query, CIM Explorer automatically displays the results in table format in the Query Results tab of the Output pane:

Output							φ×
	DesignVoltage	DeviceID	EstimatedChargeRemaining	Name	PowerManagementSupported	Status	\square
1	12788	369SANYO00HW022	100	00HW022	False	OK	
2	12796	1999SANYO01AV405	100	01AV405	False	ОК	
Help	Help Search results Query results Windows PowerShell Image: Comparison of the second s						

i By default, query results are displayed in a table with one row for each result.

To get the query command that CIM Explorer ran, in the Query section of the menu, click the arrow key below the Query icon, and then click **Custom Query**.

To view the same query results in list format

• On the ribbon, in the Query group, click **Property List**:

Output		
	Property	Value
1	DesignVoltage	12788
2	DevicelD	369SANYO00HW022
3	EstimatedChargeRemaining	100
4	Name	00HW022
5	PowerManagementSupported	False
6	Status	ОК
7		
8	DesignVoltage	12796
9	DevicelD	1999SANYO01AV405
10	EstimatedChargeRemaining	100
11	Name	01AV405
12	PowerManagementSupported	False
13	Status	ОК
14		
Help	Search results Query results	Windows PowerShell

To see the property values of a selected object in the results

• In the Query results pane, **click to select an object**. Then, in the Query section of the menu, click **Property List**.

If you need help understanding the classes or the property values, use the Description field of the Class and Property/Method displays.

Create and Run Queries

File	Home	Tools										
Connec	Copy M MSDN	* Y ©		Query PowerShe	ery ist I - Powe	rShell PowerShe	II PowerShell Studio Project	HTML	Text	win32	7 6 /%	
	CIM	Fil	ter	Query		Code		Ð	port		Find	
Appv CIMV2 CI CI CI DEFAULT directory Hardware Intel Intel_ME Interop		Î	Class Win32_BaseBoard Win32_BaseService Win32_Battery Win32_Battery Win32_Binary Property / Method DesignCapacity		CIMType / .NET uint32 / Systen	Description The Win32_E The Win32_E Instances off Type n.UInt32	BaseBoar BaseServ Battery c this class Descript The des	rd class re ice class r lass repre: represent ion ion	presents a epresents o sents a bat t binary inf	base bo executal tery cor ormatic pattery i	oard (also ble objec nnected to on (such a n milliwa	
Microsoft msdtc PEH Output				Designvoitage DeviceID FrrorCleared		uint64 / Systen string / System hoolean / Syst	n.UInto4 n.String em Roolean	The des The De	sign voitag viceID pro Pared is a	ge of the b operty cont boolean n	attery ir ains a s' roperty	n millivoit tring iden indicating
	Property			Value								
10 11 12 13 14 15 16 17 18	DesignCapac DesignVoltag DeviceID ErrorCleared ErrorDescripti EstimatedCha EstimatedRun ExpectedBatte ExpectedLife	e on ırgeRemainin Time eryLife		12788 369SANYO00HW022 100 71582788								
Help	FullChargeCa Search results	Query resul	ts Win	ndows PowerShell				_			_	

To examine the results in Windows PowerShell

• On the ribbon, in the Query group, click **PowerShell**:

Output				- # ×			
Microsoft Windows PowerShell 64 bit							
PS C:\Program EstimatedCharg	Files\SAPIEN Techr eRemaining,Name,Po	nologies, Inc\CIM Explorer> Get owerManagementSupported,Status -	-CIMInstance -ClassName Win32_Battery -NameSpace root\CIMV2 AutoSize	Â			
DesignVoltage	DeviceID	EstimatedChargeRemaining Name	PowerManagementSupported Status				
12788	369SANY000HW022	100 00HW02	2 False OK				
12796	1999SANY001AV405	100 01AV40	5 False OK				

8 Advanced Features

In addition to the features covered in <u>Basic Orientation</u> (18), CIM Explorer has advanced features to make it easier to search CIM/WMI and refine your queries.

8.1 Find a Class, Property or Method

The Find feature finds strings in the names of classes, properties, and methods that CIM Explorer displays. If you click a namespace and use Find, Find locates classes in the namespace. If you click a class, it finds properties and methods in the class.

To find a string in a class name



- 1. In the Namespace pane, select a namespace.
- 2. On the ribbon, in the Find group, enter the word you want to find.
- 3. Press Enter, or click Find Next or Find Previous.

To find a string in a property or method name

- 1. In the Namespace pane, select a namespace.
- 2. In the Class pane, select a class.
- 3. On the ribbon, in the Find group, enter the word you want to find.
- 4. Press Enter, or click Find Next or Find Previous.

8.2 Filter Results

You can filter the results of the *Search*, *Find*, and *Query* features in CIM Explorer. When set, the Filter feature includes strings and excludes categories of classes from the results.

To exclude categories of classes from CIM Explorer results



• Click the buttons to select from the options.

From left to right:

- o Exclude CIM classes (class names that begin with 'CIM_')
- o Exclude Win32 classes (class names that begin with 'Win32_')
- o Exclude system classes (class names that begin with '_System')
- o Exclude performance classes (class names that include 'Perf')
- o Exclude MSFT classes (class names that begin with 'MSFT_')

To include only classes with a specified word in the class name

• In the Filter box, type the word.

For example, if you type Alarm, CIM Explorer displays only classes with 'Alarm' in the class name.

8.3 Export Results

You can export query results in HTML, Text, XML, or CSV format.

To export results

- 1. Run a query. For help, see <u>Create and Run Queries</u> 41.
- 2. On the ribbon, in the Export group, select an output format:



3. Navigate to the path and assign a file name for the exported file.

To export results from a Windows PowerShell query, use the cmdlets

HTML

51

ConvertTo-HTML | Out-File

Text

Out-File or Set-Content

- XML Export-Clixml
- CSV Export-CSV

8.4 Display WMI Help and Examples

CIM Explorer includes help for all classes, properties, methods, and dynamically generated examples that you can run to query WMI on your local computer.

Output 🗸	џ ×
Win32_Battery	^
The Win32_Battery class represents a battery connected to the computer system. This class applies to both batteries in Laptop Systems and other internal/external batteries.	
Samples:	
PowerShell:	
Get-CIMInstance -ClassName Win32_Battery -ComputerName LAPTOP-EI34D2K3 -NameSpace root\CIMV2 Run Copy	
PowerShell (Local machine):	
Get-CIMInstance -ClassName Win32_Battery -NameSpace root\CIMV2 Run Copy	
VBScript: Copy	
Set objWMIService = GetObject("winmgmts://" & "LAPTOP-EI34D2K3" & "\" & "root\CIMV2")	
For Each item In colWMI	
Handle query results nere Next	~
Help Search results Query results Windows PowerShell	

To display help for a class, property, or method

• Select the element > in the Output panel, click the Help tab.

To run an example

• Click the Run link.

9 Reference

This section provides an overview of the SAPIEN Updates tool, and lists the keyboard shortcuts available in CIM Explorer.

9.1 SAPIEN Updates

We are continually updating our software, both to remove bugs and to add and improve product features. We recommend always staying current with the most recent versions to ensure that you are taking advantage of the latest features, functionality, and product stability.

Every SAPIEN product has a built-in update tool—**SAPIEN Updates**—which will check for updates on all current activations and unexpired trial versions of our products. Available product updates are indicated in the SAPIEN Updates tool and also in the <u>Notifications dialog</u> (see below).

SAPIEN Notifications

SAPIEN products provide automatic notifications when there is a software update available, or when your maintenance is about to expire. Notifications are indicated by a 'flag' icon in the top-right of the program window:



How to view SAPIEN notifications

• Click the notification flag icon above the ribbon to open the Notifications dialog:

Notifications	×
PowerShell ModuleManager 2022 update version 1.2.15 is available.	Close
	Dismiss All

• If a product update is available, click the update notification to open the SAPIEN Updates tool.

Click the X button to dismiss individual notifications or select **Dismiss All**. Dismissed notifications will not be shown again.

SAPIEN Updates - Tool Overview

The SAPIEN Updates tool indicates when an update is available for any SAPIEN program installed on your computer.

1 To minimize the impact on your system, the tool does not run during Windows startup or continuously in the system tray.

How to access the SAPIEN Updates tool

• On the Help or Tools ribbon > click Check Now or Check For Updates (Updates section).

-OR-

• Click the <u>notification icon</u> above the ribbon > then in the Notifications dialog, click the update notification.

SAPIEN Updates						<u> </u>		×
Check for updates now	View your Downloads folder							
View Downloads folder View update history Check your product update history	Product upda	ites are available				Downlo Dow	ad and li or mload or	nstall 1ly
-	Available					_	<u>+</u>	
Select one or more	Product	Installed Version	Available Version	License sta	atus 🔶	Down	load and I	Install
SAPIEN products	PrimalScript	7.4.127	7.6.133	Active		i construction in the second s		
	VersionRecall	1.6.148	1.6.150	Active		Do	wnload or	ily
	PowerShell Studio	5.6.161	5.6.167	Active			Class	
	PrimalSQL	4.5.68	4.5.69	Active			Close	
	PrimalXML	4.5.54	4.5.58	Active				
Click a product to view	PowerShell HelpWriter	2.3.44	2.3.45	Active				
the release notes	• • • • • • • • • • • • • • • • • • •							
	Notes:							
See also	7.6.133 Released September 25t Add: New ribbon group 'Test' add	h, ed			1			
Installed software Add: Windows Sandbox support (requires build Windows 10 build 1903 or later) Add: Application title shows (Administrator) if process is elevated Add: SAPIEN Script Packager is a new tool to get and build ackaged executables								
SAPIEN Account	Fix: Function calls in watch panel during debug session prevented							
SAPIEN Home page								

SAPIEN Updates Tool

SAPIEN Updates Tool

SAPIEN Updates - Options	
Check for updates now	Immediately checks to see if additional product updates are available.
View Downloads folder	Displays the Downloads folder in File Explorer.
View update history	Displays the history of all downloaded and in- stalled product updates.
Available	Displays a selectable list of available product updates. Select one or more products to Download or Download and Install.
Download and Install	Downloads and installs the updates for the product(s) selected in the Available updates list.
Download only	Downloads the updates for the product(s) selec- ted in the Available updates list.
Close	Closes the SAPIEN Updates tool.
Notes	Displays a brief synopsis of what was changed, added, or fixed for the products selected in the Available window. The build history for all SAPIEN products is <u>available here</u> .

Update On-Demand

You don't need to wait to be notified when an update is available; you can check for updates at any time. This is particularly useful if you've heard about a new update and want to install it immediately, or if you are ready to start a new project and want to complete all updates before you begin.

How to check for updates on-demand

- On the Help or Tools ribbon > select Check Now or Check For Updates to open the SAPIEN Updates tool.
 - i These instructions may vary between SAPIEN products.

• In the SAPIEN Updates tool, select Check for updates now:



The latest product updates are displayed in the SAPIEN Updates Available window.

Security and Permissions

Installing updates to programs in a Program Files directory requires the permissions of a member of the Administrators group on the computer. When you click **Download and Install** in the SAPIEN Updates tool, or if you install after downloading, you will be prompted for administrator credentials.

The update tool requires a functioning internet connection and unimpeded access through your internet firewall. For some installations, you might need to create a firewall rule to allow access or make some accommodations.

9.2 Keyboard Shortcuts

This section covers the keyboard shortcuts available in CIM Explorer.

General Commands

Сору	Ctrl + Shift + C	
Connect to another computer	Ctrl + N	
Minimize the Ribbon	Ctrl + F1	
Search Commands		
Search Microsoft Learn	Ctrl + M	
Search Google	Ctrl + G	

Find Commands

Search classes, properties, or methods	Ctrl + S
Previous Result	Shift + 4
Next Result	F4
Find Previous	Shift + F3
Find Next	F3

Query Commands

Query	Ctrl + Q
Query - select multiple properties	Ctrl + Click or Shift + Click
Query Property List	Ctrl + L
Query with PowerShell	Ctrl + P

9.3 Appendices

Appendices for CIM Explorer Help Manual

Appendix A: Manual and Product Version Appendix B: Icon License Attribution

9.3.1 Appendix A: Manual Version

Appendix A

Manual Version

This help manual is in the process of being updated. Some features and images in this manual version may not reflect the current product functionality.

Blog articles

For the latest product tips and feature demonstrations, check out the CIM Explorer articles on the <u>SAPIEN blog</u>.

Release details

To view a brief description of what was changed, added, or fixed in the most recent CIM Explorer builds, view the product <u>version history</u>.

Need more help?

Please direct your product related questions to the <u>CIM Explorer support forum</u>, and your scripting questions to the appropriate <u>Scripting Answers forum</u>.

9.3.2 Appendix B: Icon License Attribution

Appendix B

Icon License Attribution

Some of the icons used in this manual were made by <u>Freepik</u> at <u>www.flaticon.com</u> and are licensed under <u>CC BY 3.0</u>: 1