Manage Surface Docks with WMI

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Windows Management Instrumentation (WMI) support provides a rich set of diagnostic information enabling IT admins to remotely monitor and manage the latest firmware, policy state, and related data for Surface Dock 2 and Surface Thunderbolt 4 Dock devices. You can use WMI with Windows PowerShell, System Center Operations Manager, and other tools. For more information about WMI, see Working with WMI.

Enable WMI support

Surface Thunderbolt 4 Dock

Go to Surface Thunderbolt 4 Dock Firmware and Drivers   and download the appropriate package:

SurfaceDock_WmiInstanceProvider_Win10_Win11_19041_23.021.21048.0_x64.msi

- Surface Pro (fifth generation and later)
- Surface Book (second generation and later)
- Surface Go (all generations)
- Surface Laptop (all generations)
- Surface Laptop Go (all generations)

SurfaceDock_WmiInstanceProvider_Win10_Win11_19041_23.021.21048.0_arm64.msi

- Surface Pro 9 with 5G
- Surface Pro X

Surface Dock 2

Go to Surface Dock 2 Firmware and Drivers   and download the appropriate package:

SurfaceDock2_WmiInstanceProvider_Win10_17763_20.072.32423.0_x64.msi

- Surface Pro (fifth generation and later)
- Surface Book (second generation and later)
- Surface Go (all generations)

- Surface Laptop (all generations)
- Surface Laptop Go (all generations)

SurfaceDock2_WmiInstanceProvider_Win10_17763_20.072.32491.0_arm64.msi

- Surface Pro 9 with 5G
- Surface Pro X

Using WMI with Surface Dock

The following instructions apply to Surface Dock 2 and Surface Thunderbolt 4 Dock.

1. To enumerate all dock component instances:

   PowerShell

   ```
   Get-CimInstance -Namespace "root/Surface" -Class "SurfaceDockComponent"
   ```

2. To access WMI Class Property descriptions, open a command prompt and enter WMI commands where **Property** is one of the properties listed in Table 1.

   PowerShell

   ```
    Get-CimClass -Namespace "root/Surface" -Class
   "SurfaceDockComponent").CimClassProperties["<Property>"]
   ```

- **Example:** To access the description for the **Version** Common Information Model (CIM) property, enter the following:

   PowerShell

   ```
   (Get-CimClass -Namespace "root/Surface" -Class
   "SurfaceDockComponent").CimClassProperties["Version"].Qualifiers["Descript
   ion"].Value
   ```

Table 1. Surface Dock WMI reference

Property	Type	Expected Value(s)	Description
ComponentName	String	**Surface Thunderbolt 4 Dock**	The following property lists the specific name of the device component that the

Property	Type	Expected Value(s)	Description
			accompanying Common Information Model (CIM) class data corresponds to.
		"Microcontroller" "Thunderbolt 4 Controller" "USB Hub" "Power Delivery Controller 1" "Power Delivery Controller 2" "Audio Codec" "Ethernet Controller" "DockSerialNumber" (length: 14 - For example, 0V3379X22463GH) **Surface Dock 2** "Microcontroller" "USB Hub 1" "USB Hub 2" "Display Port Hub" "Power Delivery Controller" "Audio Codec" "Ethernet Controller"	
DeviceName	String	"Surface Dock 1" "Surface Dock 2" "Microsoft Surface Thunderbolt 4 Dock"	The following property contains the name of the dock device that the specific device component belongs to.
DockSerialNumber	String	A twelve (12) digit serial number containing only numerical values	The following property records the serial number of the attached dock device. This serial number is the exact same for every component as they belong to the same dock device. For reference, this serial number can be found physically on the underside of the Surface Dock itself.
Id	uint16	0, 1, 2, ..., 65535	The following property is a unique Id that starts from zero (0) and counts up. This variable is used for numbering the enumerated WMI instances.

Property	Type	Expected Value(s)	Description
LastUpdateStatus	String	"Success" "PendingDockReattach" "Failed"	The following property details the last attempted Component Firmware Update (CFU) status for the device component in question. Possible values are: **Success, Pending Dock Reattach,** and **Failed.** - **Success** indicates that previously applied new firmware was applied successfully - **Pending Dock Reattach** indicates there's a new update pending for the device component and the user must detach and reattach the Dock's Surface connector in order to apply the new update. - **Failed** indicates that a possible legitimate error occurred during the CFU process or the peripheral didn't boot up in the expected version. In the **Failed** case, this isn't an indication that the device isn't working, but rather something erroneous occurred when trying to update the device. In such case, the previous firmware continues to run.
PolicyState	String	"Enabled" "Disabled"	The following property indicates the current Surface Enterprise Management Mode (SEMM) policy for the device component. Possible values are: **Enabled** and **Disabled.** - **Enabled** indicates that the SEMM system has allowed the host device to access and use the device component - **Disabled** indicates that the SEMM system has disallowed and thereby prevented the host machine from accessing and using the device component.

Property	Type	Expected Value(s)	Description
ProductId	String[]	A list of hex strings, which can each range from "0x0000" to "0xFFFF"	The following property classifies the Product Id (PID) of the device component. It's possible for there to be more than one PID listed. In the case of a USB Hub, for example, both Super Speed (SS) and High Speed (HS) devices are lumped into a singular "Hub." Therefore, two (2) PIDs would be listed within this array.
ProvisionedState	boolean	True or False	The following property describes the Surface Enterprise Management Mode (SEMM) provisioned state of the Surface Dock device. The provisioned state is the exact same for every component as they belong to the same dock device. Possible values are: True or False. A value of true indicates the Surface Dock device is currently managed and thereby, port functionality may be restricted. See the "PolicyState" property field for more information. A value of false indicates the Surface Dock device is currently not managed and has no feature restrictions imposed.
Status	String	"OK" "Disconnected" "Error" "Missing" "DeviceHandleInUse" "Disabled" "NotSupportedByWmi"	The following property describes the state of the Dock's connection to the host machine. Possible values are: **OK, Disconnected, Error, Missing, DeviceHandleInUse, Disabled,** and **NotSupportedByWmi.** - **OK** indicates that the device is successfully connected to the host machine and no problems exist, which would inhibit its functionality - **Disconnected** indicates that the Surface connector, which provides the connection for all the device components, is currently not attached to the host machine. - **Error** indicates a potential issue with the device instance and the device interface has more than likely been

Property	Type	Expected Value(s)	Description
			labeled with a yellow exclamation point in the Device Manager – check the **StatusCode** property for more detailed information on the type of error that occurred. - **Missing** indicates that the device was expected to have enumerated on the host machine, but for some reason didn't. The **StatusCode** property will hold the value of 24 to indicate this erroneous situation. - **DeviceHandleInUse** indicates that another process is currently communicating with the device, which prohibits this Windows Management Instrumentation (WMI) Instance Provider from its communication requests. Try executing your WMI command again! - **Disabled** indicates that the current Surface Enterprise Management Mode (SEMM) policy has disallowed and thereby prevented the host machine from accessing and using the device component. See the **PolicyState** property field for more information. - **NotSupportedByWmi** indicates the connected dock is currently not supported by this WMI Provider. This status appears for the Surface Dock 1, which is currently not supported by this WMI Instance Provider.
StatusCode	uint32	Device Manager Error Code obtained from the CIM_LogicalDevice WMI Class (within *cimwin32.mof*)	The following property provides the Device Manager error code for the given dock component. A value of zero (0) indicates that the dock component is working correctly; a value greater than zero (0) indicates an issue or a possible error with the dock component. Because the dock component may enumerate with several device interfaces, it's possible there may be other Device Manager error codes. This property field only lists a single error code even if multiple are available. The Device

Property	Type	Expected Value(s)	Description
			Manager labels the device with a yellow exclamation point only when certain error codes have occurred.
VendorId	String	A hex string that can range from "0x0000" to "0xFFFF"	The following property notes the specific Vendor ID (VID) of the device component.
Version	String	A version string, which has the form as follows: "x.y.z", where x, y, and z are numerical values.	The following property specifies the current version of the firmware, which is currently running on the device component.

Learn more

- [Secure Surface Dock ports with SEMM](#)
- [What's new in Surface Thunderbolt 4 Dock](#)
- [Surface Dock 2 overview](#)
- [Device Manager error codes](#)
- [Working with WMI](#)