**What is WinRM?**

Windows Remote Management (WinRM) is the Microsoft implementation of [WS-Management Protocol](https://msdn.microsoft.com/en-us/library/aa384470(v=vs.85).aspx), a standard Simple Object Access Protocol (SOAP)-based, firewall-friendly protocol that allows hardware and operating systems, from different vendors, to interoperate.

The WS-Management protocol specification provides a common way for systems to access and exchange management information across an IT infrastructure. WinRM and [Intelligent Platform Management Interface (IPMI)](https://msdn.microsoft.com/en-us/library/aa384465(v=vs.85).aspx#winrm.gloss_intelligent_platform_management_interface), along with the [Event Collector](http://go.microsoft.com/fwlink/p/?linkid=84396) are components of the [Windows Hardware Management](http://go.microsoft.com/fwlink/p/?linkid=45204) features.

(<https://msdn.microsoft.com/en-us/library/aa384426(v=vs.85).aspx)>

**How is WinRM used?**

You can use WinRM scripting objects, the WinRM command-line tool, or the Windows Remote Shell command line tool WinRS to obtain management data from local and remote computers that may have [baseboard management controllers (BMCs)](https://msdn.microsoft.com/en-us/library/aa384465(v=vs.85).aspx#winrm.gloss_baseboard_management_controller). If the computer runs a Windows-based operating system version that includes WinRM, the management data is supplied by [Windows Management Instrumentation (WMI)](https://msdn.microsoft.com/en-us/library/aa394582(v=vs.85).aspx).

You can also obtain hardware and system data from WS-Management protocol implementations running on operating systems other than Windows in your enterprise. WinRM establishes a session with a remote computer through the SOAP-based WS-Management protocol rather than a connection through DCOM, as WMI does. Data returned to WS-Management protocol are formatted in XML rather than in objects.

(<https://msdn.microsoft.com/en-us/library/aa384426(v=vs.85).aspx)>

**WinRM and WMI Scripting** (<https://msdn.microsoft.com/en-us/library/aa384463(v=vs.85).aspx)>

**What is WMI and what can it do for me?**

Windows Management Instrumentation is a core Windows management technology; you can use WMI to manage both local and remote computers. WMI provides a consistent approach to carrying out day-to-day management tasks with programming or scripting languages. For example, you can:

Start a process on a remote computer.

Schedule a process to run at specific times on specific days.

Reboot a computer remotely.

Get a list of applications installed on a local or remote computer.

Query the Windows event logs on a local or remote computer.

The word “Instrumentation” in WMI refers to the fact that WMI can get information about the internal state of computer systems, much like the dashboard instruments of cars can retrieve and display information about the state of the engine. WMI “instruments” by modeling objects such as disks, processes, or other objects found in Windows systems. These computer system objects are modeled using classes such as Win32\_LogicalDisk or Win32\_Process; as you might expect, the Win32\_LogicalDisk class models the logical disks installed on a computer, and the Win32\_Process class models any processes currently running on a computer. Classes are based on the extensible schema called the Common Information Model (CIM). The CIM schema is a public standard of the Distributed Management Task Force (http://www.dmtf.org).

WMI capabilities also include eventing, remoting, querying, views, user extensions to the schema, instrumentation, and more.

To learn more about WMI, go to http://msdn.microsoft.com/library/default.asp and search for the keyword phrase “About WMI.”