



# Lenovo BIOS Windows Management Instrumentation Interface Deployment Guide for Desktop

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## Preface

The purpose of this guide is to explain how to modify BIOS settings, boot order using Windows Management Instrumentation (WMI) through the Lenovo client-management interface. This guide is intended for skilled IT administrators who are familiar with configuring BIOS settings on computers in their organizations.

This guide is provided in a ZIP file package that contains this deployment guide as well as Visual Basic sample scripts to use when configuring BIOS settings.

This deployment guide is developed for IT professionals to assist with the unique challenges that they encounter. If you have suggestions or comments, communicate with your Lenovo® authorized representative. To learn more about the technologies that can help you lower the total cost of ownership and to check for periodic updates to this guide, visit the following Web site:

[www.lenovo.com/support](http://www.lenovo.com/support)





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## Chapter 1. Overview

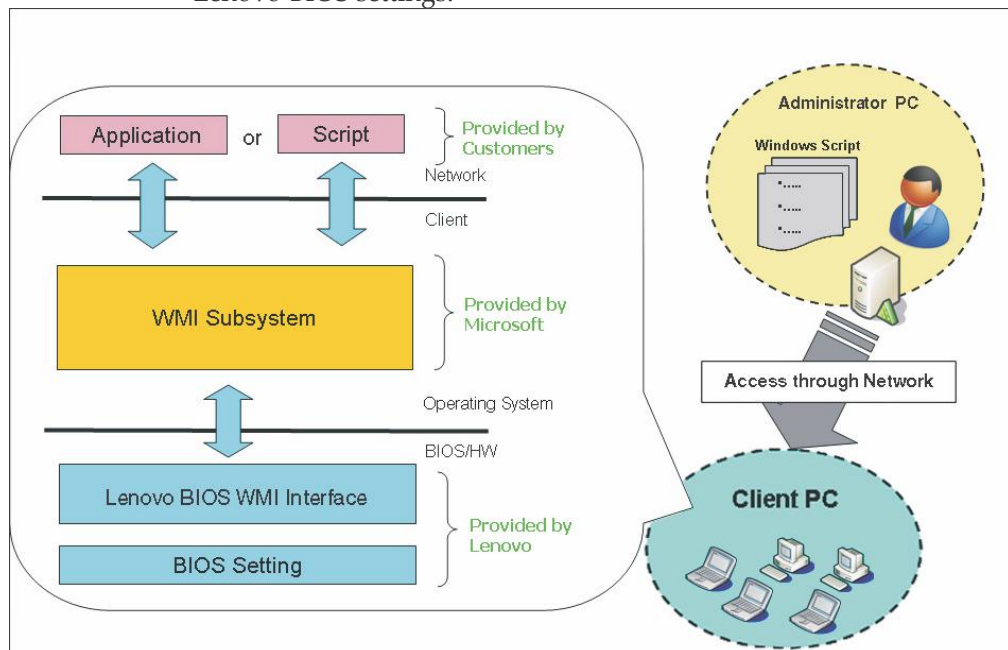
IT administrators are always looking for easier ways to manage client computer BIOS settings, which include hardware settings, and the boot order. The Lenovo BIOS WMI interface provides a simplified way to change these settings. Lenovo has developed a BIOS interface that can be manipulated through Windows Management Instrumentation (WMI). The Lenovo BIOS WMI interface enables IT administrators to make queries on current BIOS settings, restore settings to their factory defaults, change single settings, reset or change passwords, and modify the boot order either at client computers or remotely.

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### Using Windows Management Instrumentation

WMI is provided as a standard feature in most Windows® operating systems. It provides a powerful set of functions, such as query-based information retrieval and event notification, which enables users to manage both local and remote computers. The Lenovo BIOS WMI interface extends the capabilities of WMI to allow management of BIOS settings.

The following illustration shows how WMI can be used to access Lenovo BIOS settings.



WMI uses Windows Script host (WSH) to interpret scripts. You can write your scripts in either Windows Visual Basic Scripting Edition (VBScript) or JavaScript.

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### Key benefits

The Lenovo BIOS WMI interface provides the following benefits:

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## Function

- Flexible BIOS configuration, including the ability to change a single BIOS setting or all BIOS settings
- Bios password management , including update Administrator passwords, power-on passwords(POP), hard disk drive(HDD)passwords
- No dependency on a specific BIOS level

## Environment

- Remote or local capabilities
- Support of unattended operations
- No software installation, including managed object format (MOF), required
- Replaces DOS-based BIOS configuration tools

## Interface

- Easy to adopt for various management servers
- Replaces current SMI interface
- Common interface for different products

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## Supported computers

BIOS setup through WMI described in this document is supported on the following new Thinkcentre/Thinkstation products only:

- Thinkcentre M92/M92p/M82
- Thinkstation E31

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## Chapter 2. Script Classes and Parameter

This chapter contains WMI implementation details for configuring BIOS settings.

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### Configuring BIOS settings

The following interface details can be used to access Lenovo BIOS settings.

- Namespace: "\root\WMI"
- Base Class: "Lenovo\_BIOSElement"
- Interface details (see [Table 1](#))

*Table 1. Interface Details*

| Class Name                  | Type   | Parameter/Return  | Example  |
|-----------------------------|--------|---|--|
| Lenovo_BiosSetting          | Query  | CurrentSetting:"Item,Value"   | "Wake Up on LAN, Eanbled"  |
| Lenovo_SetBiosSetting       | Method | "Item,Value;"   | "Wake Up on LAN,Disabled;"   |
| Lenovo_SaveBiosSettings     | Method | "Password,Encoding,KbdLang;"  | "pswd,ascii,us;"   |
| Lenovo_DiscardBiosSettings  | Method | ","   | ","  |
| Lenovo_LoadDefaultSettings  | Method | ","   | ","  |
| Lenovo_BiosPasswordSettings | Query  | PasswordMode:"Value"<br>-0:Legacy Mode<br>-Others: Reserved<br>PasswordState:"Value"<br>-BIT0=1: User password is installed<br>-BIT1=1:Admin password is installed<br>-BIT2=1:Hard disk passwords are installed<br>MinLength:"Value"<br>-1:always one byte<br>MaxLength:"Value"<br>-64:always 64 byte<br>SupportedKeyboard:"Value"<br>"<br>-BIT0=1:Support US keyboard<br>-BIT1=1:Support French keyboard<br>-BIT2=1:Support German keyboard<br>SupportedEncodings:"Value"<br>"<br>-BIT0=1: support ASCII password input<br>-BIT1=1:support scancode password input<br>Port0HardDiskPasswordState:"Value"<br>-BIT0=1:User hard disk password is installed<br>-BIT1=1:Master hard disk password is installed<br>Port1HardDiskPasswordState:"Value"<br>Port2HardDiskPasswordState:"Value"<br>Port3HardDiskPasswordState:"Value"<br>Port4HardDiskPasswordState:"Value"<br>Port5HardDiskPasswordState:"Value" | PasswordMode:1<br>PasswordState:0<br>MinLength:1<br>MaxLength:64<br>SuportedKeyboard:7<br>SupportedEncodings:3<br>Port0HardDiskPasswordState:00<br>Port1HardDiskPasswordState:00<br>Port2HardDiskPasswordState:00<br>Port3HardDiskPasswordState:00<br>Port4HardDiskPasswordState:00<br>Port5HardDiskPasswordState:00 |
| Lenovo_SetBiosPassword      | Method | "PasswordType,CurrentPassword,NewPassword,Encoding,Kb   | "pop,oldpop,newpop,ascii,us;"  |

|  |  |         |  |
|--|--|---------|--|
|  |  | dLang;" |  |
|--|--|---------|--|

**Notes:**

1. See [Appendix A, "Sample Visual Basic scripts for configuring BIOS settings,"](#) on page 19 for Visual Basic sample scripts.
2. See [Table 4 on page 6](#) for a listing of acceptable setting names.

## Return types

You will receive one of the following return types after making changes to BIOS settings:

*Table 2. Return Types*

| Return Type       | Description   |
|-------------------|---|
| Success           | Operation completed successfully.   |
| Not Supported     | The feature is not supported on this system.  |
| Invalid Parameter | The item or value provided is not valid.  |
| Access Denied     | The change could not be made due to an authentication problem. If a supervisor password exists, the correct supervisor password must be provided. |
| System Busy       | BIOS changes have already been made that need to be committed. Reboot the system and try again  |

## Password Authentication

If an Administrator password is already set, you must specify that administrator password before you can change any BIOS settings.

The format for password parameters is "abc,ascii,us" with descriptions in [Table 3](#).

*Table 3. Password parameters format, password authentication*

| Parameter   | Description  | Possible selections   |
|-------------|--|---|
| Parameter 1 | Current password                                       | <ul style="list-style-type: none"> <li>• "abc" - raw ascii character</li> <li>• "1e302e" - scancode</li> </ul>  |
| Parameter 2 | Password encoding                                      | <ul style="list-style-type: none"> <li>• "ascii"</li> <li>• "scancode"</li> </ul>   |
| Parameter 3 | Keyboard languages (valid only if encoding is "ascii") | <ul style="list-style-type: none"> <li>• "us" - English US, English, French-Canadian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Spanish-European, Spanish-Latin American, Swiss, Turkish</li> <li>• "fr" - French-European, Belgian</li> <li>• "gr" - German, Czech, Slovak, Slovenian</li> </ul> |

## Available BIOS setting names

Some BIOS settings are dependent on the presence of certain hardware features. Settings might vary on different computers.

**Notes:**

1. BIOS settings and values are case sensitive.
2. The security-related options are not changed even if the "load default" is requested.

Table 4. List of available BIOS settings

| Item Name             | Option Value   | Related item          |
|-----------------------|--|-----------------------|
| Serial Port1 Address  | "Disabled", "3F8/IRQ4", "2F8/IRQ3", "3E8/IRQ4", "2E8/IRQ3" | N                     |
| Serial Port2 Address  | "Disabled", "2F8/IRQ3", "2E8/IRQ3"                         | N                     |
| Parallel Port Address | "Disabled", "378", "278", "3BC"                            | N                     |
| Parallel Port Mode    | "ECP+EPP", "ECP", "EPP"                                    | Parallel Port Address |
| EPP Version           | "1.9", "1.7"   | Parallel Port Address |
| ECP Mode DMA Channel  | "DMA3", "DMA1"   | Parallel Port Address |
| Parallel Port IRQ     | "IRQ7", "IRQ5"   | Parallel Port Address |
| USB 3.0 extended Card | "Enabled", "Disabled"                                      | N                     |
| USB Support           | "Enabled", "Disabled"                                      | N                     |
| USB Legacy Support    | "Enabled", "Disabled"                                      | USB Support           |
| Front USB Ports       | "Enabled", "Disabled"                                      | USB Support           |

|                     |                       |                              |
|---------------------|-----------------------|------------------------------|
| Rear USB Ports      | "Enabled", "Disabled" | USB Support                  |
| USB Port 1          | "Enabled", "Disabled" | USB Support &Front USB Ports |
| USB Port 2          | "Enabled", "Disabled" | USB Support &Front USB Ports |
| USB Port 3          | "Enabled", "Disabled" | USB Support &Rear USB Ports  |
| USB Port 4          | "Enabled", "Disabled" | USB Support &Rear USB Ports  |
| USB Port 5          | "Enabled", "Disabled" | USB Support &Rear USB Ports  |
| USB Port 6          | "Enabled", "Disabled" | USB Support &Rear USB Ports  |
| USB Port 7          | "Enabled", "Disabled" | USB Support &Rear USB Ports  |
| USB Port 8          | "Enabled", "Disabled" | USB Support &Rear USB Ports  |
| USB Port 9          | "Enabled", "Disabled" | USB Support &Front USB Ports |
| USB Port 10         | "Enabled", "Disabled" | USB Support &Front USB Ports |
| SATA Controller     | "Enabled", "Disabled" | N                            |
| SATA Drive 1        | "Enabled", "Disabled" | SATA Controller              |
| SATA Drive 2        | "Enabled", "Disabled" | SATA Controller              |
| SATA Drive 3        | "Enabled", "Disabled" | SATA Controller              |
| SATA Drive 4: eSATA | "Enabled", "Disabled" | SATA Controller              |

|                                    |   |                             |
|------------------------------------|---|-----------------------------|
| SATA Drive 5                       | "Enabled", "Disabled"   | SATA Controller             |
| SATA Drive 6                       | "Enabled", "Disabled"   | SATA Controller             |
| Configure SATA as                  | "IDE", "AHCI", "RAID"   | SATA Controller             |
| Native Mode Operation              | "Enabled", "Disabled"   | Configure SATA as           |
| Hard Disk Pre-delay                | "Disabled", "3 Seconds", "6 Seconds", "9 Seconds", "12 Seconds", "15 Seconds", "21 Seconds", "30 Seconds" | SATA Controller             |
| Select Active Video                | "IGD", "PCI", "PEG", "Auto"   | N                           |
| Pre-Allocated Memory Size          | "32MB", "64MB", "128MB"   | Select Active Video         |
| Total Graphics Memory              | "128MB", "256MB", "Maximum"   | Select Active Video         |
| Multi-Monitor Support              | "Disabled", "Enabled"   | Select Active Video         |
| Onboard Audio Controller           | "Enabled", "Disabled"   | N                           |
| Onboard Ethernet Controller        | "Enabled", "Disabled"   | N                           |
| Boot Agent                         | "PXE", "SMC", "Disable"   | Onboard Ethernet Controller |
| Intel(R) SpeedStep(TM) Technology  | "Disabled", "Enabled"   | N                           |
| Core Multi-Processing              | "Enabled", "Disabled"   | N                           |
| Hyper Threading Technology         | "Disabled", "Enabled"   | N                           |
| Intel (R)Virtualization Technology | "Disabled", "Enabled"   | N                           |



|                                |  |   |
|--------------------------------|--|---|
| VT-d                           | "Enabled", "Disabled"  | Intel (R) Virtualization Technology         |
| TxT                            | "Enabled", "Disabled"  | Intel (R) Virtualization Technology or VT-d |
| C State Supported              | "C1", "C1C3", "C1C3C6"   | N   |
| Turbo Mode                     | "Disabled", "Enabled"  | N   |
| Intel(R) Manageability Control | "Disabled", "Enabled"  | Onboard Ethernet Controller                 |
| Intel(R) Manageability Reset   | "Disabled", "Enabled"  | Onboard Ethernet Controller                 |
| Press <CTRL-P> to enter MEBx   | "Disabled", "Enabled"  | Onboard Ethernet Controller                 |
| Console Type                   | "VT100/VT100", "8bit/PC-ANSI", "7bit/PC ANSI/VT100+/VT-UTF8/ASCII" | Onboard Ethernet Controller                 |
| Enhanced Power Saving Mode     | "Disabled", "Enabled"  | N   |
| Intel(R) SIPP Support          | "Enabled", "Disabled"  | N   |
| CPU CRID                       | "Enabled", "Disabled"  | Intel(R) SIPP Support                       |
| Chipset CRID                   | "Enabled", "Disabled"  | Intel(R) SIPP Support                       |
| After Power Loss               | "Power Off", "Power On", "Last State"                              | N   |
| Enhanced Power Saving Mode     | "Disabled", "Enabled"  | N   |
| ICE Performance Modes          | "Better Acoustic Performance", "Better Thermal Performance"        | N   |

|                            |  |  |
|----------------------------|--|--|
| ICE Thermal Alert          | "Enabled", "Disabled"  | N  |
| Wake Up on LAN             | "Primary", "Automatic", "Disabled"   | N  |
| Wake from PCI Modem        | "Primary", "Automatic", "Disabled"   | N  |
| Wake from Serial Port Ring | "Primary", "Automatic", "Disabled"   | N  |
| Wake from PCI Device       | "Primary", "Automatic", "Disabled"   | N  |
| Wake Up on Alarm           | "Single Event", "Daily Event",<br>"Weekly Event", "Disabled"   | N  |
| Startup Sequence           | "Primary", "Automatic"   | Wake Up on Alarm   |
| Alarm Time (HH:MM:SS)      | 00:00:00   | Wake Up on Alarm   |
| Alarm Date (MM/DD/YYYY)    | 01/01/1999   | Wake Up on Alarm   |
| Alarm Day of Week          | "Sunday", "Monday", "Tuesday",<br>"Wednesday", "Thursday", "Friday",<br>"Saturday"   | Wake Up on Alarm   |
| Primary Boot Sequence      | "USB FDD", "USB Key", "SATA 1",<br>"SATA 2", "SATA 3", "SATA<br>4", "SATA 5", "SATA 6", "Network 1",<br>"USB HDD", "USB CDROM" | SATA<br>Controller&<br>Onboard<br>Ethernet<br>Controller&<br>USB Support |
| Automatic Boot Sequence    |  | SATA<br>Controller&<br>Onboard<br>Ethernet<br>Controller&<br>USB Support |
| Error Boot Sequence        |  | SATA<br>Controller&<br>Onboard<br>Ethernet<br>Controller&<br>USB Support |
| Boot Mode                  | "Auto", "UEFI", "Legacy"   | N  |

|                                   |   |                  |
|-----------------------------------|---|------------------|
| <b>Boot Priority</b>              | "UEFI First", "Legacy First"                        | <b>Boot Mode</b> |
| <b>Quick Boot</b>                 | "Enabled", "Disabled"                               | <b>N</b>         |
| <b>Boot Up Num-Lock Status</b>    | "On", "Off"   | <b>N</b>         |
| <b>Keyboardless Operation</b>     | "Disabled", "Enabled"                               | <b>N</b>         |
| <b>Option Keys Display</b>        | "Disabled", "Enabled"                               | <b>N</b>         |
| <b>Option Keys Display Style</b>  | "Normal", "Legacy"                                  | <b>N</b>         |
| <b>Startup Device Menu Prompt</b> | "Enabled", "Disabled"                               | <b>N</b>         |
| <b>Serial Number Style</b>        | "Legacy Style", "MTM&SN-1", "MTM&SN-2", "1S-MTM-SN" | <b>N</b>         |

**Note:**

for "Serial Number Style":

Legacy Style means display the legacy seven digit serial number

MTM&SN-1 means concatenation of Machine Type with Serial Number

(mmmmssssss)

MTM&SN-2 means concatenation of Machine Type/Model and Serial Number

(mmmmmmssssss)

1S-MTM-SN means concatenation of "1S", Machine Type/Model and Serial Number

(1Smmmmmmssssss)



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## Chapter 3. Typical Usage

Through WMI, you can configure BIOS settings in the following ways:

- List BIOS settings
- Change BIOS settings
- Change the boot order (sometimes referred to as the startup sequence)
- Load default BIOS settings

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### Listing current BIOS settings

For a list of all available BIOS settings that can be changed through WMI on a specific computer, use the `Lenovo_BiosSetting` class (see [“List all BIOS settings on the local computer” on page 20](#) and [“List all BIOS settings on a remote computer” on page 22](#) for sample scripts).

See Table 4 on page 6 for a list of available BIOS settings.

---

### Changing BIOS settings

To change a BIOS setting, complete the following steps:

1. Identify the BIOS setting you want to change using the `Lenovo_BiosSetting` class (see [“List all BIOS settings on the local computer” on page 20](#) and [“List all BIOS settings on a remote computer” on page 22](#) for sample scripts).
2. Identify the value to which the setting will be changed.

**Note:** See [Table 4 on page 6](#) for a list of available values for a particular setting.

3. Change the BIOS setting to the desired value using the `Lenovo_SetBiosSetting` class, then use the `Lenovo_SaveBiosSetting` class to save the settings (see [“Set a single BIOS setting on the local computer” on page 20](#) and [“Set a single BIOS setting on a remote computer” on page 22](#) for sample scripts).

**Note:** BIOS settings and values are case sensitive.

After making changes to the BIOS settings, you must reboot the computer before the changes will take effect.

---

### Changing the boot order

To change the boot order, complete the following steps:

1. Determine the current setting for “BootOrder” by using the

Lenovo\_BiosSetting class (see [“List all BIOS settings on the local computer” on page 20](#)) and [“List all BIOS settings on the remote computer” on page 22](#) for sample scripts).

- To set a new boot order, use the Lenovo\_SetBiosSetting class, then use the Lenovo\_SaveBiosSetting class to save the settings (see [“Set a single BIOS setting on the local computer” on page 20](#) and [“Set a single BIOS setting on a remote computer” on page 22](#) for sample scripts). Specify a new boot order by listing the boot devices in order, separated by colons. Devices that are not specified are excluded from the boot order. In the following example, the Network Card drive is the first boot device and SATA drive 1 is the second boot device and so on.

**Example:** Change primary boot sequence,

```
Primary Boot Sequence,Network 1:SATA 1:USB HDD:SATA
2:USB CDROM:USB Key;
```

## Restoring default settings

To restore default BIOS settings, use the Lenovo\_LoadDefaultSettings class, and then use the Lenovo\_SaveBiosSettings class to save the BIOS changes (see sample scripts).

## Changing an existing hardware password

To update a password, specify a password type and format the password. The format for password parameters is "pap,abc,def,ascii,us" with descriptions in Table 5 (see [“Set a Administrator password on the local computer when a Administrator password exists” on page 20](#) and [“Set a Administrator password on a remote computer when a Administrator password exists” on page 21](#) for sample scripts).

Table 5. Password parameters format, changing existing hardware password

| Parameter   | Description             | Possible seletctions  |
|-------------|-------------------------|---|
| Parameter 1 | Password type string    | “pap”:Administrator password<br>“pop”:Power-on password   |
| Parameter 2 | Current password string | “abc”:raw ascii character<br>“1e302e”:scancode  |
| Parameter 3 | New password string     | “def”:raw ascii character<br>“201221”:scancode  |
| Parameter 4 | Password encoding       | “ascii”<br>“Scancode”   |
| Parameter 5 | Keyboard Languages      | <ul style="list-style-type: none"> <li>• “us”- English US, English UK, Chinese-Traditional, Danish, Dutch, French-Canadian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Spanish-European, Spanish-Latin American, Swiss, Turkish</li> <li>• “fr” - French-European, Belgian</li> <li>• “gr” - German, Czech, Slovak, Slovenian</li> </ul> |
|             |                         |   |

---

## Limitations

The following WMI limitations exist for BIOS setup:

- Administrator password, POP and HDP cannot be changed simultaneously during one power cycle. If you want to change these settings, you must reboot the system after changing one of them.
- A password cannot be set using this method before there already exists one. Passwords can only be updated or cleared.
- When users try to batch update BIOS settings, make sure that the related item of each item is in correct state, because once one item's related item is "Disabled" or with special setting, this item will be hidden and cannot be updated through WMI. Please reference [Table 4](#) for detail relationship between items.





---

## Chapter 4. Security

WMI-based administration scripts operating over a remote connection send data over the network in clear text by default. You can enhance security by modifying WMI-based administration scripts to establish an encrypted remote connection as follows:

1. Set an impersonation level of "impersonate"
2. Set an authentication level of "pktPrivacy"

See [Appendix A, "Sample Visual Basic scripts for configuring BIOS settings,"](#) on page 19 for sample scripts used to implement WMI-based administration scripts that include these parameters for encryption.



---

## Appendix A. Sample Visual Basic scripts for configuring BIOS settings

The Visual Basic command line scripts in the ZIP file are examples that you may find helpful when configuring BIOS settings.

The scripts in the ZIP file can be used as-is on Windows XP, Windows Vista or Windows 7 to modify BIOS settings on your Lenovo computer. The scripts can be executed on a command prompt using the cscript.exe utility. On Windows Vista, you must run the scripts from an administrator command prompt.

**Note:** The scripts in this appendix are for reference only. To copy and paste scripts, use the scripts in the ZIP file. Pay attention to that symbol ";" is treated as the end of parameter in script, so make sure each method input parameter in script will end with ";"

---

## Restore default settings

Use the example scripts in the ZIP file as templates to restore default settings on the local computer.

**Syntax:** cscript.exe LoadDefaults.vbs

**Example:** cscript.exe LoadDefaults.vbs

```
'
' Load default BIOS settings
'
On Error Resume Next
Dim colItems

strComputer = "LOCALHOST" 'Change as needed
Set objWMIService = GetObject("WinMgmts:" _
& "{ImpersonationLevel=Impersonate}!\\" & strComputer _
& "\root\wmi")

Set colItems = objWMIService.ExecQuery("Select * from
Lenovo_LoadDefaultSettings")

strReturn = "error"
For Each objItem in colItems
    ObjItem.LoadDefaultSettings ";", strReturn
Next

WScript.Echo " LoadDefaultSettings: " + strReturn

If strReturn <> "Success" Then
    WScript.Quit
End If

Set colItems = objWMIService.ExecQuery("Select * from
Lenovo_SaveBiosSettings")

strReturn = "error"
For Each objItem in colItems
    ObjItem.SaveBiosSettings ";", strReturn
Next

WScript.Echo " SaveBiosSettings: " + strReturn
```

---

## List all BIOS settings on the local computer

Use the sample scripts in the ZIP file as templates to list all BIOS settings and values on the local computer.

**Syntax:** cscript.exe ListAll.vbs

**Example:** cscript.exe ListAll.vbs

```
,
' List all BIOS settings
,
On Error Resume Next
Dim collItems

strComputer = "LOCALHOST" ' Change as needed.
Set objWMIService = GetObject("WinMgmts:" _
& "{ImpersonationLevel=Impersonate}!\\" & strComputer _
& "\root\wmi")
Set collItems = objWMIService.ExecQuery("Select * from
Lenovo_BiosSetting")
For Each objItem in collItems
    If Len(objItem.CurrentSetting) > 0 Then
        Setting = ObjItem.CurrentSetting
        StrItem = Left(ObjItem.CurrentSetting, InStr(
            ObjItem.CurrentSetting, ",")-1)
        StrValue = Mid(ObjItem.CurrentSetting, InStr(
            ObjItem.CurrentSetting, ",")-1)
        WScript.Echo StrItem + " = " + StrValue
    End If
Next
```

---

## Set a single BIOS setting on the local computer

Use the sample scripts in the ZIP file as templates to set a single BIOS setting on the local computer.

**Syntax:** cscript.exe SetConfig.vbs [Item] [Value]

**Example:** cscript.exe SetConfig.vbs "Wake Up on LAN" Disabled

```
,
' Set specific BIOS Setting
,
On Error Resume Next
Dim collItems

If WScript.Arguments.Count <> 2 Then
    WScript.Echo "SetConfig.vbs [setting] [value]"
    WScript.Quit
End If
strRequest = WScript.Arguments(0) + "," + WScript.Arguments(1) +
","
strComputer = "LOCALHOST" ' Change as needed.
Set objWMIService = GetObject("WinMgmts:" _
& "{ImpersonationLevel=Impersonate}!\\" & strComputer _
& "\root\wmi")
Set collItems = objWMIService.ExecQuery("Select * from
Lenovo_SetBiosSetting")

For Each objItem in collItems
    ObjItem.SetBiosSetting strRequest, strReturn
Next

WScript.Echo strRequest
```

---

```

WScript.Echo " SetBiosSetting: " + strReturn

If strReturn <> "Success" Then
    WScript.Quit
End If

Set colItems = objWMIService.ExecQuery("Select * from
Lenovo_SaveBiosSettings)

strReturn = "error"
For Each objItem in colItems
    ObjItem.SaveBiosSettings ";", strReturn
Next

WScript.Echo strRequest
WScript.Echo " SaveBiosSettings: " + strReturn

```

---

## Set a single BIOS setting on the local computer if a Administrator password exists

Use the sample scripts in the ZIP file as templates to set a single BIOS setting on the local computer.

**Syntax:** cscript.exe SetConfigPassword.vbs [Item] [Value] [Password+Encoding]

**Example:** cscript.exe SetConfigPassword.vbs "Wake Up on LAN" Disabled "pass,ascii,us"

```

,
' Set specific BIOS Setting
,
On Error Resume Next
Dim colItems

If WScript.Arguments.Count <> 3 Then
    WScript.Echo "SetConfigPassword.vbs [setting] [value]
[password+encoding]"
    WScript.Quit
End If
strRequest = WScript.Arguments(0) + "," + WScript.Arguments(1) +
","
strComputer = "LOCALHOST" ' Change as needed.
Set objWMIService = GetObject("WinMgmts:_
&"{ImpersonationLevel=Impersonate}!\\" & strComputer _
&"\root\wmi")
Set colItems = objWMIService.ExecQuery("Select * from
Lenovo_SetBiosSetting")

For Each objItem in colItems
    ObjItem.SetBiosSetting strRequest, strReturn
Next

WScript.Echo strRequest
WScript.Echo " SetBiosSetting: " + strReturn

If strReturn <> "Success" Then
    WScript.Quit
End If

Set colItems = objWMIService.ExecQuery("Select * from
Lenovo_SaveBiosSettings)

```

---

```

strReturn = "error"
For Each objItem in collItems
    ObjItem.SaveBiosSettings Wscript.Arguments(2)+" "; strReturn
Next

WScript.Echo strRequest
WScript.Echo " SaveBiosSettings: " + strReturn

```

---

## List all BIOS settings on a remote computer

Use the sample scripts in the ZIP file as templates to list all BIOS settings and values on a remote computer.

**Syntax:** cscript.exe ListAllRemote.vbs [Hostname]

**Example:** cscript.exe ListAllRemote.vbs mattdev-c5

```

'
' List all BIOS settings
'
On Error Resume Next
Dim collItems

If WScript.Arguments.Count <> 1 Then
    WScript.Echo "ListAllRemote.vbs [hostname]"
    WScript.Quit
End If

strComputer = WScript.Arguments(0)

Set objWMIService = GetObject("WinMgmts:" _
& "{ImpersonationLevel=Impersonate," _
& "authenticationLevel=pktPrivacy}!\\" _
& strComputer & "\root\wmi")
Set collItems = objWMIService.ExecQuery("Select * from
Lenovo_BiosSetting")
For Each objItem in collItems
    If Len(objItem.CurrentSetting) > 0 Then
        Setting = ObjItem.CurrentSetting
        StrItem = Left(ObjItem.CurrentSetting, InStr(
ObjItem.CurrentSetting, ",")-1)
        StrValue = Mid(ObjItem.CurrentSetting, InStr(
ObjItem.CurrentSetting, ",")+1, 256)
        WScript.Echo StrItem + " = " + StrValue
    End If
Next

```

---

## Set a single BIOS setting on a remote computer

Use the sample scripts in the ZIP file as templates to set a single BIOS setting on a remote computer.

**Syntax:** cscript.exe SetConfigRemote.vbs [Item] [Value]  
[Hostname]

**Example:** cscript.exe SetConfigRemote.vbs "Wake Up on LAN"  
Disabled mattdev-c5

```

'
' Set specific BIOS Setting

```

---

```

On Error Resume Next
Dim colItems
If WScript.Arguments.Count <> 3 Then
WScript.Echo "SetConfigRemote.vbs [setting] [value] [hostname]"
WScript.Quit
End If

strRequest = WScript.Arguments(0) + "," + WScript.Arguments(1) +
","
strComputer = WScript.Arguments(2)
Set objWMIService = GetObject("WinMgmts:" _
& "{ImpersonationLevel=Impersonate," _
& "authenticationLevel=pktPrivacy}!\\" _
& strComputer & "\root\wmi")

Set colItems = objWMIService.ExecQuery("Select * from
Lenovo_SetBiosSetting")
For Each objItem in colItems
ObjItem.SetBiosSetting strRequest, strReturn
Next

WScript.Echo strRequest
WScript.Echo " SetBiosSetting: " + strReturn

If strReturn <> "Success" Then
WScript.Quit
End If
Set colItems = objWMIService.ExecQuery("Select * from
Lenovo_SaveBiosSettings")

strReturn = "error"
For Each objItem in colItems
ObjItem.SaveBiosSettings ";", strReturn
Next

WScript.Echo strRequest
WScript.Echo " SaveBiosSettings: " + strReturn

```

---

## Set a single BIOS setting on a remote computer when a Administrator password exists

Use the sample scripts in the ZIP file as templates to set a single BIOS setting on a remote computer.

**Syntax:** cscript.exe SetConfigPasswordRemote.vbs [Item] [Value] [Password+Encoding] [Hostname]

**Example:** cscript.exe SetConfigPasswordRemote.vbs "Wake Up on LAN" Disabled "pass,ascii,us" mattdev-c5

```

,
' Set specific BIOS Setting
,
On Error Resume Next
Dim colItems
If WScript.Arguments.Count <> 4 Then
WScript.Echo "SetConfigPasswordRemote.vbs [Item] [value]
[password+encoding] [hostname]"
WScript.Quit

```

---

```

End If

strRequest = WScript.Arguments(0) + "," + WScript.Arguments(1) +
","
strComputer = WScript.Arguments(3)
Set objWMIService = GetObject("WinMgmts:" _
& "{ImpersonationLevel=Impersonate," _
& "authenticationLevel=pktPrivacy}!\\" _
& strComputer & "\root\wmi")

Set colItems = objWMIService.ExecQuery("Select * from
Lenovo_SetBiosSetting")
For Each objItem in colItems
    ObjItem.SetBiosSetting strRequest, strReturn
Next

WScript.Echo strRequest
WScript.Echo " SetBiosSetting: " + strReturn

If strReturn <> "Success" Then
WScript.Quit
End If
Set colItems = objWMIService.ExecQuery("Select * from
Lenovo_SaveBiosSettings")

strReturn = "error"
For Each objItem in colItems
    ObjItem.SaveBiosSettings Wscript.Arguments(2)+";", strReturn
Next

WScript.Echo strRequest
WScript.Echo " SaveBiosSettings: " + strReturn

```

---

## Set a Administrator password on the local computer when a Administrator password exists

Use the sample scripts in the ZIP file as templates to set a single BIOS setting on a remote computer.

**Note:** You cannot set a password if one does not already exist.

**Syntax:** cscript.exe SetAdminPassword.vbs [old password] [new password] [encoding]

**Example:** cscript.exe SetAdminPassword.vbs oldpass newpass "ascii,us"

```

,
' Update Administrator password
,
On Error Resume Next
Dim colItems
If WScript.Arguments.Count <> 3 Then
WScript.Echo "SetAdminPassword.vbs [oldpassword] [newpassword]
[encoding]"
WScript.Quit
End If

strRequest="pap,"+WScript.Arguments(0)+"," + WScript.Arguments(1)
+ ","+Wscript.Arguments(2)+";"
strCompter = "LOCALHOST" 'change as needed
Set objWMIService = GetObject("WinMgmts:" _

```



---

```

&"{ImpersonationLevel=Impersonate," _
&"authenticationLevel=pktPrivacy}!\\" _
& strComputer & "\\root\wmi")

Set colItems = objWMIService.ExecQuery("Select * from
Lenovo_SetBiosPassword")
strReturn = "error"
For Each objItem in colItems
    ObjItem.SetBiosPassword strRequest, strReturn
Next

WScript.Echo strRequest
WScript.Echo " SetBiosPassword: " + strReturn

```

---

## Set a Administrator password on a remote computer when a Administrator password exists

Use the sample scripts in the ZIP file as templates to set a single BIOS setting on a remote computer.

**Note:** You cannot set a password if one does not already exist.

**Syntax:** cscript.exe SetAdminPasswordRemote.vbs [old password]  
[new password] [encoding] [hostname]

**Example:** cscript.exe SetAdminPasswordRemote.vbs oldpass newpass  
"ascii,us" mattdev-c5

```

,
' Update Administrator password
,
On Error Resume Next
Dim colItems
If WScript.Arguments.Count <> 4 Then
WScript.Echo "SetAdminPasswordRemote.vbs [oldpassword]
[newpassword] [encoding] [hostname]"
WScript.Quit
End If

strRequest="pap,"+WScript.Arguments(0)+"," + WScript.Arguments(1)
+ ","+Wscript.Arguments(2)+";"
strCompter = Wscript.Arguments(3) 'change as needed
Set objWMIService = GetObject("WinMgmts:" _
&"{ImpersonationLevel=Impersonate," _
&"authenticationLevel=pktPrivacy}!\\" _
& strComputer & "\\root\wmi")

Set colItems = objWMIService.ExecQuery("Select * from
Lenovo_SetBiosPassword")
strReturn = "error"
For Each objItem in colItems
    ObjItem.SetBiosPassword strRequest, strReturn
Next

WScript.Echo strRequest
WScript.Echo " SetBiosPassword: " + strReturn

```



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