ThinkVantage

Power Manager Deployment Guide

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Note: Before using this information and the product it supports, read the general information in Appendix B “Notices” on page 59.

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Preface

This guide is intended for IT administrators, or those who are responsible for deploying the Power Manager program (hereafter refer to as Power Manager) to computers in their organization. The purpose of this guide is to provide the information required for installing Power Manager on one or more computers, and the information about the common administration tasks associated with managing Active Directory®. Implementing and enforcing a power management strategy on the computers throughout the entire organization can provide substantial savings.

ThinkVantage® Technologies are developed for IT professionals, addressing the unique challenges they may encounter. This deployment guide will provide instructions and solutions for working with Power Manager. 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, go to the following Web site:
http://www.lenovo.com/thinkvantage

Chapter 1. Overview

Power Manager helps users adjust power settings to achieve the best balance between system performance and power saving through slider control or power plans.

Power Manager provides a variety of power-saving features through two essential modes, Basic and Advanced. Basic mode is set as default when users open Power Manager for the first time. Users can specify the level of power saving by simply using the slider, without power plans. Advanced mode enables users to configure power plans and the full range of functions in Power Manager to meet specific power saving needs. Power Manager can also display the battery information, and help users monitor the battery status.

Power Management on a computer can save energy and money. When the IT administrator enforces power management strategy on computers throughout the entire organization, the savings can be far more substantial. Power Manager is configured by default to use its energy efficiency features. Power Manager also gives the IT administrator numerous options for tailoring power management settings to optimize energy efficiency throughout their organizations.

Note: Power Manager has two different versions. One is for Microsoft® Windows® XP operating systems and the other is for Microsoft Windows Vista® and Microsoft Windows 7 operating systems. In the Windows Vista and Windows 7 version, the term "power plan" is used. In the Windows XP version, the term "power scheme" is used. In this document, no distinction will be made and the term "power plan" will be used to cover both.

Features

Power Manager includes the following functions:

- **Balance the performance and power saving of the computer**

  Power Manager provides the slider to help users quickly and easily set the level of power to be used. Users can control the Central Processing Unit (CPU) speed and the brightness of the computer display by moving the slider. Moving the slider to the left, toward **Maximum Performance**, increases the CPU speed and the brightness of the computer display but uses more battery power. Moving the slider to the right, toward **Maximum Battery Life**, prolongs the battery life while limiting the CPU speed and the brightness of the computer display.

  When users move the slider to the leftmost position, the power-saving settings in the predefined **Maximum Performance** power plan are applied. When users move the slider to the rightmost position, the power-saving settings in the predefined **Maximum Battery Life** power plan are applied.

- **View, create, delete, and switch power plans**

  A power plan is a collection of hardware and system settings that manages how the computer is used and conserves power. Power Manager power plans provide more power-saving settings than Windows® power plans. On the **Power Plan** tab, the user can view specific settings in any of the predefined power plans: Maximum Performance, Timers off (Presentation), Video Playback, Maximum Battery Life, Energy Saver (which is called as ThinkPad® Default or Energy Star on some systems), and Power Source Optimized. These predefined power plans are designed to meet the needs of most people. If the predefined power plans do not meet your needs, the Create Power Plan wizard can help you create your own custom power plans. You can easily switch between power plans by clicking the **Battery Gauge** icon on the taskbar and using the slider to apply a predefined power plan, or by pressing the F3+Fn keys to select a power plan from the **Choose Power Plan** menu.

- **View battery information**

  Power Manager displays battery information and general battery status, such as remaining time, remaining capacity, charge and discharge status, cycle count and so on. The battery health indicator can indicate the battery health conditions in three colors: green (in good condition), yellow (in fair condition), and red

(in poor condition). When the battery has encountered an error, an error message or balloon message will display in the notification area.

- **Maximize battery life span**

  If you primarily use the computer with an attached ac power adapter and only infrequently use battery power, you can increase the life span of the battery by changing the charge thresholds. This allows you to reduce the number of charge cycles by letting the battery discharge to a lower percentage before it begins to charge. You can change the battery charge thresholds on the **Battery** tab.

  You can also set the maximum charge value to below 100%. This option is useful to prolong the life span of the batteries that you do not use frequently, because it is recommended to store batteries with less charge rather than full charge.

- **Remotely configure Power Manager and deploy power plan**

  Power Manager enables an IT administrator to configure Power Manager and deploy a power plan using Active Directory. The IT administrator can select an active power plan in the client computers, inhibit the user's ability to switch between power plans, select a specific power plan, or create a power plan. For example, the IT administrator can disable the **Maximum Performance** power plan and users cannot select it.

  Also, the IT administrator can configure settings for the General Setting policies, Power Plan (Scheme) Deployments policies, Global Power Settings policies, and Battery Maintenance policy.

Chapter 2. Installation

The following instructions provide installation procedures for Power Manager.

Net Framework dependence

Power Manager requires Microsoft .NET Framework 3.0 or later. You need to install the .NET Framework before installing Power Manager. You can download a compatible version of the .NET Framework from the following Microsoft Web site:
http://msdn.microsoft.com/en-us/netframework/default.aspx

Note: To use Power Manager in Windows 2000 operating systems, install Power Manager version 1.48.

Considerations for installation

Various functions in Power Manager have dependency on hardware, BIOS, drivers, and other ThinkVantage Technologies (TVTs). When a function is not supported on a client computer, the function is hidden in Power Manager. Installing the latest version of the following software is strongly recommended to enable the full range of functions in Power Manager.

- BIOS update
- ThinkPad Power Management Driver
- Hotkey driver
- Access Connections™

Installing Power Manager

To install Power Manager without user's interaction, do the following:

1. Start the Windows XP, Windows Vista, or Windows 7 operating system, and then log in with administrative privileges.
2. Extract the Power Manager software package to the hard disk drive. For example:
   `C:\Drivers\Vista\PWRMGRV`
3. Depending on the operating system, do one of the following:
   - For Windows XP operating system users Click **Start** → **Run**, and then type `cmd` in the **Open** box to open the command prompt window.
   - For Windows Vista or Windows 7 operating system users Click **Start**, type `cmd` in the **Start Search** box, and then select **run as administrator** to open the command prompt window.
4. Install Power Manager silently with a default path for installation log by using the following command line:
   `<path>\setup.exe -S -SMS`

To install Power Manager interactively, do the following:

1. Start the Windows XP, Windows Vista, or Windows 7 operating system, and then log in with administrative privileges.
2. Double-click the Power Manager software package. The Ready to Install window opens.
3. In the Select Destination Location window, click **Next**. If you would like to select a different folder, click **Browse**.
4. In the Ready to Install window, click **Install**. All the necessary files will be extracted to the folder selected in step 3.

5. Make sure that you have selected the **Install ThinkVantage Power Manager now** option and click **Finish**.
6. Follow the instructions on the screen to complete installation and restart the computer.

Note: Power Manager has two different versions. One is for Windows XP operating systems and the other is for Windows Vista and Windows 7 operating systems. When you install Power Manager on your computer, match the Power Manager version with your operating system. Power Manager designed specifically for Windows Vista and Windows 7 operating systems might not function correctly on Windows XP operating systems, and vice versa.

Chapter 3. Working with Active Directory and ADM or ADMX files

Active Directory provides a mechanism that enables administrators to manage computers, groups, end users, domains, security policies, and any type of user-defined objects. The mechanism is known as Group Policy and Administrative Template (ADM or ADMX) files. With Group Policy and ADM or ADMX files, IT administrators define settings that can be applied to computers or users in the domain.

Lenovo provides Power Manager ADM or ADMX files with six policy settings categories for Windows XP, Windows Vista, and Windows 7 client computers:

- General setting
- Power Plan (Scheme) Deployments
- Global Power Settings
- Battery Maintenance
- Power Agenda Deployments
- EnergyWise Configuration Deployments

Adding Administrative Templates

Designed to save you time and effort, Lenovo provides the administrative template files, "PWMGPO.ADM" and "PWMGPO.ADMX" for Windows XP operating systems, and "PMVGPO.ADM" and "PMVGPO.ADMX" for Windows Vista and Windows 7 operating systems, which can be used with Group Policy Editor to set the policies for Power Manager. These ADM or ADMX files can be downloaded from the Lenovo Support Web site at:
http://www.lenovo.com/support/site.wss/document.do?lndocid=TVAN-ADMIN

Depending on the environment of Active Directory, the IT administrator selects either ADM or ADMX files and adds the files to the Group Policy Editor.

To add the Power Manager ADM files to the Group Policy Editor, do the following:

1. On the computer running the Active Directory, click **Start** → **Run**, and type `gpedit.msc`. The Group Policy Editor window opens.
2. Under **Computer Configuration**, right-click **Administrative Templates**.
3. Click **Add/Remove Templates**, and the Add/Remove Templates window opens.
4. Click **Add**, and select the PWMGPO.ADM file for Windows XP client computers.
5. Click **Add**, and select the PMVGPO.ADM file for Windows Vista and Windows 7 client computers.
6. Click **Close** to close the Add/Remove Templates window.
7. Make sure that the ADM files have been added to the Group Policy Editor by doing the following:
   - For Windows XP operating systems
     a. Under **Computer Configuration**, expand **Administrative Templates**. A new item named **Lenovo ThinkVantage Components** is present.
     b. Expand **Lenovo ThinkVantage Components**. A sub-item named **Power Manager** is present.
     c. Under **User Configuration**, expand **Administrative Templates**. A new item named **Lenovo ThinkVantage Components** is present.

d. Expand **Lenovo ThinkVantage Components**. A sub-item named **Power Manager** is present.

- For Windows Vista and Windows 7 operating systems

  a. Under **Computer Configuration**, expand **Administrative Templates** and navigate to **Classic Administrative Templates**. A new item named **Lenovo ThinkVantage Components** is present.

  b. Expand **Lenovo ThinkVantage Components**. A sub-item named **Power Manager for Vista/7** is present.

  c. Under **User Configuration**, expand **Administrative Templates** and navigate to **Classic Administrative Templates**. A new item named **Lenovo ThinkVantage Components** is present.

  d. Expand **Lenovo ThinkVantage Components**. A sub-item named **Power Manager for Vista/7** is present.

To add the Power Manager ADMX files to the Group Policy Editor, do the following:

1. On the computer running the Active Directory that supports ADMX, extract the admx_tp_xp.zip and admx_tp_vista_7.zip files to a local directory.
2. Copy the PWMGPO.admx and PMVGPO.admx files to the `C:\Windows\PolicyDefinitions` directory.
3. Copy the PWMGPO.adml and PMVGPO.adml files to the `C:\Windows\PolicyDefinitions\en-US` directory.
4. Click **Start → Run**, and type `gpedit.msc`. The Group Policy Editor window opens. The Local Group Policy Editor will automatically read all ADMX files saved in the `C:\Windows\PolicyDefinitions` directory.
5. Make sure that ADMX files have been added to the Group Policy Editor by doing the following:

   a. Under **Computer Configuration**, expand **Administrative Templates**. A new item named **Lenovo ThinkVantage Components** is present.

   b. Expand **Lenovo ThinkVantage Components**. A sub-item named **Power Manager** and **Power Manager for Vista/7** is present.

   c. Under **User Configuration**, expand **Administrative Templates**. A new item named **Lenovo ThinkVantage Components** is present.

   d. Expand **Lenovo ThinkVantage Components**. A sub-item named **Power Manager** and **Power Manager for Vista/7** is present.

Notes:

1. The policy settings in the **Power Manager** configuration item are for Windows XP client computers, and these policy settings do not affect Windows Vista and Windows 7 client computers.
2. The policy settings in the **Power Manager for Vista/7** configuration item are for Windows Vista and Windows 7 client computers, and these policy settings do not affect Windows XP client computers.

General setting

General Setting policies enable IT administrator to configure general settings such as selecting an active power plan.

To configure General Setting policies, do the following:

- For Windows XP client computers (ADM and ADMX files)

  Under **Computer Configuration**, click **Administrative Templates → Lenovo ThinkVantage Components → Power Manager → General setting**.

- For Windows Vista or Windows 7 client computers (ADM file)

  Under **Computer Configuration**, click **Administrative Templates → Classic Administrative Templates → Lenovo ThinkVantage Components → Power Manager for Vista/7 → General setting**.

- For Windows Vista or Windows 7 client computers (ADMX file)

  Under **Computer Configuration**, click **Administrative Templates → Lenovo ThinkVantage Components → Power Manager for Vista/7 → General setting**.

This table provides detailed information about each policy setting.

Table 1. General setting

Policy settings	Description
Do not allow client to switch power plan	Specifies whether to allow switching power plan on client computers. If this policy setting is enabled and users change the power plan, Power Manager will automatically change the current power plan back to the original power plan. **Notes:** 1. This policy does not inhibit users from modifying the power saving settings in the active power plan. When this policy is enabled, users can move the slider in Basic mode on Windows Vista or Windows 7 operating systems to modify the power saving settings in the active power plan. However, if the original power plan is set to **Maximum Performance** or **Maximum Battery Life**, users cannot use the slider to modify the power saving settings in the power plan. 2. If the original power plan is not owned by Power Manager, users can still switch to another power plan. When this policy is enabled, users still can modify the active power plan, or move the slider control in Basic mode.
Do not allow client to create new power plan	Specifies whether to allow creating a new power plan in Power Manager on client computers. If you enable this policy setting, the **New** button for creating power plans in Power Manager main user interface is unavailable, though users can create a power plan outside Power Manager. For example, users can create a power plan using Power Option tool in Control Panel.
Do not allow client to select specific power plan	Specifies whether to allow selecting specific power plan owned by Power Manager on client computers. If you enable this policy setting, you must input the power plan name. When a power plan with an invalid name is selected, the current power plan is switched to another predefined power plan. **Notes:** 1. Power Manager searches for available power plans in the following order: a. Power Manager looks for the **Energy Saver** power plan, which is called **ThinkPad Default** or **Energy Star** on some systems. b. If the above search fails or the power plan is invalid, Power Manager looks for the **Power Source Optimized** power plan. c. If the above search fails or the power plan is invalid, Power Manager looks for the **Maximum Battery Life** power plan.

Table 1. General setting (continued)

Policy settings	Description
	2. Only power plans visible in Power Manager can be specified, and Windows default power plans cannot be specified.
Select an Active Power Plan	Specifies the name of the power plan owned by Power Manager to make it active on client computers. **Notes:** 1. The specified power plan name should exist on client computers. 2. If you enable this policy setting, you must input the power plan name. Power Manager applies power plan specified in this policy during startup. Even when an active power plan is specified by this policy, the user is able to change active power plan after Power Manager startup.
Hide Internet Access	Specifies whether or not to hide the Internet access. If you enable this policy setting, all Web links in Power Manager are hidden. Also, the Buy a battery link in Windows Power Option is deleted by selecting **Delete** in all pull-down menus. **Note:** When the Buy a battery link is deleted by this policy, the link does not appear even when this policy is disabled.
Power Logging	Specifies the log output setting of the AC/DC wattage. If you enable this policy setting, you must set numeric values for the log output interval (minute) and log clearance interval (day). The log output file name is PWMLDLOG.INI. The log output file will be created under Power Manager's installation folder.

Power Plan (Scheme) Deployments

The policy settings in the **Power Plan Deployments** configuration item enable the IT administrator to create custom power plans and deploy those power plans. The IT administrator needs to configure every policy under this configuration item. Policy settings in the **Power Plan Deployments** configuration item cannot be used to edit existing power plans on client computers. Once a power plan is deployed, the IT administrator cannot edit the power plan from the server side. To deploy a new power plan, the IT administrator needs to configure a power plan with a different power plan name.

To configure the **Power Plan (Scheme) Deployments** policies, do the following:

- For Windows XP client computers (ADM and ADMX files)

  Under **Computer Configuration**, click **Administrative Templates → Lenovo ThinkVantage Components → Power Manager → Power Plan (Scheme) Deployments**.
- For Windows Vista or Windows 7 client computers (ADM file)

Under **Computer Configuration**, click **Administrative Templates → Classic Administrative Templates → Lenovo ThinkVantage Components → Power Manager for Vista/7 → Power Plan (Scheme) Deployments**.

- For Windows Vista or Windows 7 client computers (ADMX file)

  Under **Computer Configuration**, click **Administrative Templates → Lenovo ThinkVantage Components → Power Manager for Vista/7 → Power Plan (Scheme) Deployments**.

This table provides detailed information about each policy setting. In this table, (AC) means the policy setting for client computers with ac power adapter plugged, and (DC) means the policy setting for client computers on battery power.

Table 2. Power Plan (Scheme) Deployments

Policy settings	Description
Plan Name	Specifies the name of the power plan to deploy to client computers. If you enable this policy setting, you must input the power plan name. A limit of the power plan name is 32 single-byte characters. If the power plan name is double-byte, limit the power plan name to 16 characters. **Note:** Once a power plan is deployed, you cannot edit the power plan from the server side. When you change a power plan name, the power plan is deployed as a new power plan to client computers.
Maximum CPU Speed (AC)	Specifies the maximum speed of CPU. Possible maximum speeds include: • Highest • Adaptive • Low • Lowest
Maximum CPU Speed (DC)	Specifies the maximum speed of CPU. Possible maximum speeds include: • Highest • Adaptive • Low • Lowest
System Performance (AC)	Specifies the system performance type. Possible system performance types include: • Maximum turbo • Turbo • Balance • Low **Note:** The system performance affects the Maximum CPU speed setting, Intel Graphics Power Plan setting, and turbo state. If the user has defined a system

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
	performance type, the Maximum CPU Speed setting and Intel Graphics Power Plan setting will be overwritten.
System Performance (DC)	Specifies the system performance type. Possible system performance types include: • Maximum turbo • Turbo • Balance • Low **Note:** The system performance affects the Maximum CPU speed setting, Intel Graphics Power Plan setting, and turbo state. If the user has defined a system performance type, the Maximum CPU Speed setting and Intel Graphics Power Plan setting will be overwritten.
CPU Deeper Sleep (AC)	Specifies whether to enable the CPU to enter the deeper sleep state. If you enable this policy setting, the CPU will go into the deeper sleep state.
CPU Deeper Sleep (DC)	Specifies whether to enable the CPU to enter the deeper sleep state. If you enable this policy setting, the CPU will go into the deeper sleep state.
Optimize fan control to (AC)	Specifies the fan control mode. Possible fan control modes include: • Maximize performance • Balance all parameters • Reduce noise dynamically **Note:** The **Reduce noise dynamically** option does not take effect if the **Maximum CPU speed (AC)** option is set to "Low" or "Lowest."
Optimize fan control to (DC)	Specifies the fan control mode. Possible fan control modes include: • Maximize performance • Balance all parameters • Reduce noise dynamically **Note:** The **Reduce noise dynamically** option does not take effect if the **Maximum CPU speed (AC)** option is set to "Low" or "Lowest."
Display Brightness 16 (AC)	Specifies the brightness level of client computer displays with 16 brightness levels. If a brightness level is high, the display gets bright.
Display Brightness 16 (DC)	Specifies the brightness level of client computer displays with 16 brightness levels. If a brightness level is high, the display gets bright.
Display Brightness 8 (AC)	Specifies the brightness level of client computer displays with eight brightness levels.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
Display Brightness 8 (DC)	Specifies the brightness level of client computer displays with eight brightness levels.
Switchable Graphics (AC)	Specifies the graphics mode of the NVIDIA switchable graphics. Possible graphics modes include: • Energy Saving • High Performance **Notes:** 1. If you enable this policy setting, you must select a graphics mode. 2. This setting is not supported on Windows XP client computers.
Switchable Graphics (DC)	Specifies the graphics mode of the NVIDIA switchable graphics. Possible graphics modes include: • Energy Saving • High Performance **Notes:** 1. If you enable this policy setting, you must select a graphics mode. 2. This setting is not supported on Windows XP client computers.
Intel Graphics Power Plan (AC)	Specifies the power plan of the Intel graphics subsystem. Possible power plans include: • Maximum Battery Life • Balanced • Maximum Performance **Note:** If you enable this policy setting, you must select a power plan.
Intel Graphics Power Plan (DC)	Specifies the power plan of the Intel graphics subsystem. Possible power plans include: • Maximum Battery Life • Balanced • Maximum Performance **Note:** If you enable this policy setting, you must select a power plan.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
Automatic optical drive power off (AC)	Specifies whether to automatically turn off the optical drive when the following conditions are met: • System has started but no CD or DVD has been inserted within 10 minutes. • The CD or DVD has been removed and has not been replaced within 10 minutes.
Automatic optical drive power off (DC)	Specifies whether to automatically turn off the optical drive when the following conditions are met: • System has started but no CD or DVD has been inserted within 10 minutes. • The CD or DVD has been removed and has not been replaced within 10 minutes.
Airplane in-seat power plan (AC)	Specifies whether to enable the Airplane in-seat power plan function. Configurable options include: • Not configured • Enabled • Disabled If you enable this policy setting, the computer reduces the power consumption by limiting the battery charging rate and system performance. This function protects the airplane in-seat power supply. Airplane in-seat power plan works whether the ac power adapter is connected. When this policy setting is enabled, an airplane icon is displayed next to the battery gauge icon on the taskbar. If another system power status icon is displayed, such as the battery stretch icon, the battery gauge reset icon, or the peak power scheduler icon, the airplane icon will be hidden.
Airplane in-seat power plan (DC)	Specifies whether to enable the Airplane in-seat power plan function. Configurable options include: • Not configured • Enabled • Disabled If you enable this policy setting, the computer reduces the power consumption by limiting the battery charging rate and system performance. This function protects the airplane in-seat power supply. Airplane in-seat power plan works whether the ac power adapter is connected. When this policy setting is enabled, an airplane icon is displayed next to the battery gauge icon on the taskbar. If another system power status icon is displayed, such as the battery stretch icon, the battery gauge reset icon,

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
	or the peak power scheduler icon, the airplane icon will be hidden.
Lower display brightness 16 (DC)	Specifies the period of inactivity before lowering the display brightness and the brightness level when the **Lower display brightness 16** setting takes effect after the specified period. The brightness level must be lower than the brightness level specified in the **Display Brightness 16** setting. This setting is for the client computers with 16 brightness levels. Possible time periods include: • 1 minute (Windows XP only) • 2 minutes (Windows XP only) • 3 minutes (Windows XP only) • 5 minutes (Windows XP only) • 10 minutes (Windows XP only) • 15 minutes • 20 minutes • 25 minutes • 30 minutes • 45 minutes • Never **Note:** This setting is not supported in AC mode and it is not supported on Windows 7 client computers.
Lower display brightness 8 (DC)	Specifies the period of inactivity before lowering the display brightness when the **Lower display brightness 8** setting takes effect after the specified period. The brightness level must be lower than the brightness level specified in the **Display Brightness 8** setting. This setting is for the client computers with eight brightness levels. Possible time periods include: • 1 minute (Windows XP only) • 2 minutes (Windows XP only) • 3 minutes (Windows XP only) • 5 minutes (Windows XP only) • 10 minutes (Windows XP only) • 15 minutes • 20 minutes • 25 minutes • 30 minutes • 45 minutes • Never **Note:** This setting is not supported in AC mode and it is not supported on Windows 7 client computers.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
Dim display (AC)	Specifies the period of inactivity before Windows automatically reduces the display brightness and the brightness level when the **Dim display** setting takes effect after the specified period. You can specify the period of inactivity in seconds. **Note:** This setting is supported only on Windows 7 client computers.
Dim display (DC)	Specifies the period of inactivity before Windows automatically reduces the display brightness and the brightness level when the **Dim display** setting takes effect after the specified period. You can specify the period of inactivity in seconds. **Note:** This setting is supported only on Windows 7 client computers.
Minimize display refresh rate (DC)	Specifies the period of inactivity before minimizing the display refresh rate. Possible time periods include: • 1 minute (Windows XP only) • 2 minutes (Windows XP only) • 3 minutes (Windows XP only) • 5 minutes (Windows XP only) • 10 minutes (Windows XP only) • 15 minutes • 20 minutes • 25 minutes • 30 minutes • 45 minutes • Never **Note:** This setting is not supported in AC mode.
Switch to Energy Saving Graphics (AC)	Specifies the period of inactivity before switching to energy saving graphics. Possible time periods include: • 2 minutes • 5 minutes • 10 minutes • 15 minutes • 30 minutes • 45 minutes • 1 hour • 2 hours • 3 hours • Never

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
	Notes: 1. If you enable this policy setting, you must select a time period. 2. This setting is not supported on Windows XP client computers.
Switch to Energy Saving Graphics (DC)	Specifies the period of inactivity before switching to energy saving graphics. Possible time periods include: • 2 minutes • 5 minutes • 10 minutes • 15 minutes • 30 minutes • 45 minutes • 1 hour • 2 hours • 3 hours • Never **Notes:** 1. If you enable this policy setting, you must select a time period. 2. This setting is not supported on Windows XP client computers.
Monitor off Timer (AC)	Specifies the period of inactivity before the Windows operating system turns off the display. For Windows XP client computers, possible time periods include: • 1 minute • 2 minutes • 3 minutes • 5 minutes • 10 minutes • 15 minutes • 20 minutes • 25 minutes • 30 minutes • 45 minutes • 1 hour • 2 hours • 3 hours • 4 hours

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
	• 5 hours • Never For Windows Vista and Windows 7 client computers, you can specify the value in seconds. If you specify the value as 0 second, the Monitor off Timer will be set to Never.
Monitor off Timer (DC)	Specifies the period of inactivity before the Windows operating system turns off the display. For Windows XP client computers, possible time periods include: • 1 minute • 2 minutes • 3 minutes • 5 minutes • 10 minutes • 15 minutes • 20 minutes • 25 minutes • 30 minutes • 45 minutes • 1 hour • 2 hours • 3 hours • 4 hours • 5 hours • Never For Windows Vista and Windows 7 client computers, you can specify the value in seconds. If you specify the value as 0 second, the Monitor off Timer will be set to Never.
HDD off Timer (AC)	Specifies the period of inactivity before the Windows operating system turns off the hard disk drive. For Windows XP client computers, possible time periods include: • 3 minutes • 5 minutes • 10 minutes • 15 minutes • 20 minutes • 25 minutes • 30 minutes

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
	• 45 minutes • 1 hour • 2 hours • 3 hours • 4 hours • 5 hours • Never For Windows Vista and Windows 7 client computers, you can specify the value in seconds. If you specify the value as 0 second, the HDD off Timer will be set to Never.
HDD off Timer (DC)	Specifies the period of inactivity before the Windows operating system turns off the hard disk drive. For Windows XP client computers, possible time periods include: • 3 minutes • 5 minutes • 10 minutes • 15 minutes • 20 minutes • 25 minutes • 30 minutes • 45 minutes • 1 hour • 2 hours • 3 hours • 4 hours • 5 hours • Never For Windows Vista and Windows 7 client computers, you can specify the value in seconds. If you specify the value as 0 second, the HDD off Timer will be set to Never.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
Standby Timer (AC)	Specifies the period of inactivity before Windows enters the sleep mode. For Windows XP client computers, possible time periods include: • 1 minute • 2 minutes • 3 minutes • 5 minutes • 10 minutes • 15 minutes • 20 minutes • 25 minutes • 30 minutes • 45 minutes • 1 hour • 2 hours • 3 hours • 4 hours • 5 hours • Never For Windows Vista and Windows 7 client computers, you can specify the value in seconds. If you specify the value as 0 second, the Standby Timer will be set to Never.
Standby Timer (DC)	Specifies the period of inactivity before Windows enters the sleep mode. For Windows XP client computers, possible time periods include: • 1 minute • 2 minutes • 3 minutes • 5 minutes • 10 minutes • 15 minutes • 20 minutes • 25 minutes • 30 minutes • 45 minutes • 1 hour • 2 hours • 3 hours

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
	• 4 hours • 5 hours • Never For Windows Vista and Windows 7 client computers, you can specify the value in seconds. If you specify the value as 0 second, the Standby Timer will be set to Never.
Hibernation Timer (AC)	Specifies the period of inactivity before the Windows operating system enters hibernation mode. Possible time periods include: • 1 minute • 2 minutes • 3 minutes • 5 minutes • 10 minutes • 15 minutes • 20 minutes • 25 minutes • 30 minutes • 45 minutes • 1 hour • 2 hours • 3 hours • 4 hours • 5 hours • 6 hours • Never **Note:** The period should be longer than the period of inactivity specified in the **Standby Timer** setting on Windows XP client computers. For Windows Vista and Windows 7 client computers, you can specify the value in seconds. If you specify the value as 0 second, the Hibernation Timer will be set to Never.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
Hibernation Timer (DC)	Specifies the period of inactivity before the Windows operating system enters hibernation mode. Possible time periods include: • 1 minute • 2 minutes • 3 minutes • 5 minutes • 10 minutes • 15 minutes • 20 minutes • 25 minutes • 30 minutes • 45 minutes • 1 hour • 2 hours • 3 hours • 4 hours • 5 hours • 6 hours • Never **Note:** The period should be longer than the period of inactivity specified in the**Standby Timer** setting on Windows XP client computers. For Windows Vista and Windows 7 client computers, you can specify the value in seconds. If you specify the value as 0 second, the Hibernation Timer will be set to Never.
Allow Hybrid Sleep (AC)	Enables Hybrid Sleep. If you enable this policy setting and select **On**, a file called `hiberfil.sys` is generated to store the contents of RAM (Random Access Memory) when the system enters sleep (Stand by) mode. This setting is not supported on Windows XP client computers.
Allow Hybrid Sleep (DC)	Enables Hybrid Sleep. If you enable this policy setting and select **On**, a file called `hiberfil.sys` generated to store the contents of RAM when the system enters sleep (Stand by) mode. This setting is not supported on Windows XP client computers.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
Allow Wake Timers (AC)	Specifies whether to allow the Windows operating system to automatically wake your computer from sleep mode on a timer for scheduled tasks and other programs. If you enable this policy setting, the system, for example, might wake automatically to install updates. This setting is supported only on Windows 7 client computers.
Allow Wake Timers (DC)	Specifies whether to allow the Windows operating system to automatically wake your computer from sleep mode on a timer for scheduled tasks and other programs. If you enable this policy setting, the system, for example, might wake automatically to install updates. This setting is not supported on Windows 7 client computers.
Wireless Power Saving Mode (AC)	Specifies the performance of wireless adapters. Possible performances include: • Maximum Performance • Low Power Saving • Medium Power Saving • Maximum Power Saving This setting is not supported on Windows XP client computers.
Wireless Power Saving Mode (DC)	Specifies the performance of wireless adapters. Possible performances include: • Maximum Performance • Low Power Saving • Medium Power Saving • Maximum Power Saving This setting is not supported on Windows XP client computers.
PCI Link State Power Management (AC)	Specifies the active state when the PCI link is idle. Possible states include: • Off • Moderate power savings • Maximum power savings This setting is not supported on Windows XP client computers.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
PCI Link State Power Management (DC)	Specifies the active state when the PCI link is idle. Possible states include: • Off • Moderate power savings • Maximum power savings This setting is not supported on Windows XP client computers.
Multimedia settings when sharing media (AC)	Specifies the action that the Windows operating system allows when media files can be played. Possible actions include: • Allow the computer to sleep • Prevent idling to sleep • Allow the computer to enter away mode This setting is not supported on Windows XP client computers.
Multimedia settings when sharing media (DC)	Specifies the action that the Windows operating system allows when media files can be played. Possible actions include: • Allow the computer to sleep • Prevent idling to sleep • Allow the computer to enter away mode This setting is not supported on Windows XP client computers.
Multimedia settings when playing video (AC)	Specifies whether Windows Media® Player favors power saving or performance when playing video content. Possible values include: • Optimize video quality • Balanced • Optimize power savings This setting is only supported on Windows 7 client computers.
Multimedia settings when playing video (DC)	Specifies whether Windows Media Player favors power saving or performance when playing video content. Possible values include: • Optimize video quality • Balanced • Optimize power savings This setting is only supported on Windows 7 client computers.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
Adaptive Display (AC)	Manages how the Windows operating system controls the setting that specifies how long a computer must be inactive before the Windows operating system turns off the computer display. If this policy is enabled and users select **On** from the pull-down menu, the Windows operating system will automatically adjust the setting based on what users do with their keyboard or mouse to keep the computer display on. This setting is supported only on Windows Vista client computers.
Adaptive Display (DC)	Manages how the Windows operating system controls the setting that specifies how long a computer must be inactive before the Windows operating system turns off the computer display. If this policy is enabled and users select **On** from the pull-down menu, the Windows operating system will automatically adjust the setting based on what users do with their keyboard or mouse to keep the computer display on. This setting is supported only on Windows Vista client computers.
Search and indexing (AC)	Specifies the search speed and performance of indexing. Possible values include: • Power Saver • Balanced • High Performance This setting is supported only on Windows Vista client computers.
Search and indexing (DC)	Specifies the search speed and performance of indexing. Possible values include: • Power Saver • Balanced • High Performance This setting is supported only on Windows Vista client computers.
USB selective suspend (AC)	Specifies whether or not the computer can suspend an individual port. If you enable this policy setting and select **Enabled**, the computer can suspend an individual port. This setting is not supported on Windows XP client computer.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
USB selective suspend (DC)	Specifies whether or not the computer can suspend an individual port. If you enable this policy setting and select **Enabled**, the computer can suspend an individual port. This setting is not supported on Windows XP client computer.
Slide show (AC)	Specifies the behavior of the desktop background slide show. Possible values include: • Available • Paused This setting is supported only on Windows 7 client computers.
Slide show (DC)	Specifies the behavior of the desktop background slide show. Possible values include: • Available • Paused This setting is supported only on Windows 7 client computers.
System cooling policy (AC)	Specifies Windows thermal behavior on systems that support active cooling features. Possible values include: • Available • Paused This setting is supported only on Windows 7 client computers.
System cooling policy (DC)	Specifies Windows thermal behavior on systems that support active cooling features. Possible values include: • Available • Paused This setting is supported only on Windows 7 client computers.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
Sleep button (AC)	Specifies the action that the Windows operating system takes when pressing the Sleep button. Possible actions include: • Do nothing • Sleep • Hibernate Depending on your computer model, one of the following hot keys works as the Sleep button. • Fn+F4 • Fn+F1 • Fn+4 This setting is not supported on Windows XP client computers.
Sleep button (DC)	Specifies the action that the Windows operating system takes when pressing the Sleep button. Possible actions include: • Do nothing • Sleep • Hibernate Depending on your computer model, one of the following hot keys works as the Sleep button. • Fn+F4 • Fn+F1 • Fn+4 This setting is not supported on Windows XP client computers.
Power button (AC)	Specifies the action that the Windows operating system takes when a user presses the power button on the computer. Possible actions include: • Do nothing • Sleep • Hibernate • Shut down This setting is not supported on Windows XP client computers.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
Power button (DC)	Specifies the action that the Windows operating system takes when a user presses the power button on the computer. Possible actions include: • Do nothing • Sleep • Hibernate • Shut down This setting is not supported on Windows XP client computers.
Lid closed (AC)	Specifies the action that the Windows operating system takes when a user closes the lid on a notebook computer. Possible actions include: • Do nothing • Sleep • Hibernate • Shut down This setting is not supported on Windows XP client computers.
Lid closed (DC)	Specifies the action that the Windows operating system takes when a user closes the lid on a notebook computer. Possible actions include: • Do nothing • Sleep • Hibernate • Shut down This setting is not supported on Windows XP client computer.
Start menu power button (AC)	Specifies the action that the Windows operating system takes when a user selects the power button from the **Start** menu. Possible actions include: • Sleep • Hibernate • Shut down This setting is supported only on Windows Vista client computers.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
Start menu power button (DC)	Specifies the action that the Windows operating system takes when a user selects the power button from the **Start** menu. Possible actions include: • Sleep • Hibernate • Shut down This setting is supported only on Windows Vista client computers.
Low battery alarm level (AC)	Specifies the percentage of battery capacity remaining that triggers the low battery alarm action. If you enable this policy setting, you must enter a numeric value (percentage) to set the battery level that triggers the low notification. To set the action that is triggered, see the low battery action (AC) policy setting in Table 2 “Power Plan (Scheme) Deployments” on page 9. This setting is not supported on Windows XP client computers.
Low battery alarm level (DC)	Specifies the percentage of battery capacity remaining that triggers the low battery alarm action. If you enable this policy setting, you must enter a numeric value (percentage) to set the battery level that triggers the low notification. To set the action that is triggered, see the low battery action (AC) policy setting in Table 2 “Power Plan (Scheme) Deployments” on page 9. This setting is not supported on Windows XP client computers.
Low battery alarm notification (AC)	Enables a user notification when the battery capacity remaining equals the low battery alarm level. If you enable this policy setting and select **On**, the Windows operating system will show a notification when the battery capacity remaining equals the low battery alarm level. To configure the low battery alarm level, see the low battery alarm level (AC) policy setting in Table 2 “Power Plan (Scheme) Deployments” on page 9. The notification will only be shown if the **Low battery action** policy setting is configured to **Do nothing**. If you disable this policy setting or do not configure it, users can see and change this setting. This setting is not supported on Windows XP client computers.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
Low battery alarm notification (DC)	Enables a user notification when the battery capacity remaining equals the low battery alarm level. If you enable this policy setting and select **On**, the Windows operating system will show a notification when the battery capacity remaining equals the low battery alarm level. To configure the low battery alarm level, see the low battery alarm level (AC) policy setting in Table 2 “Power Plan (Scheme) Deployments” on page 9. The notification will only be shown if the **Low battery action** policy setting is configured to **Do nothing**. If you disable this policy setting or do not configure it, users can see and change this setting. This setting is not supported on Windows XP client computers.
Low battery action (AC)	Specifies the action that the Windows operating system takes when battery capacity reaches the low battery alarm level. Possible actions include: • Do nothing • Sleep • Hibernate • Shut down This setting is not supported on Windows XP client computers.
Low battery action (DC)	Specifies the action that the Windows operating system takes when battery capacity reaches the low battery alarm level. Possible actions include: • Do nothing • Sleep • Hibernate • Shut down This setting is not supported on Windows XP client computers.
Reserve battery alarm level (AC)	Specifies the percentage of battery capacity remaining that triggers reserve power mode. If you enable this policy setting, you must enter a numeric value (percentage) to set the battery level that triggers the reserve power notification. This setting is supported only on Windows 7 client computers.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
Reserve battery alarm level (DC)	Specifies the percentage of battery capacity remaining that triggers reserve power mode. If you enable this policy setting, you must enter a numeric value (percentage) to set the battery level that triggers the reserve power notification. This setting is supported only on Windows 7 client computers.
Critical battery alarm level (AC)	Specifies the percentage of battery capacity remaining that triggers the critical battery alarm action. If you enable this policy setting, you must enter a numeric value (percentage) to set the battery level that triggers the critical notification. **Note:** The value should be lower than the level specified by **Low battery alarm level**. To set the action that is triggered, see the critical battery alarm action (AC) policy setting in Table 2 “Power Plan (Scheme) Deployments” on page 9. If you disable this policy setting or do not configure it, users can see and change this setting. This setting is not supported on Windows XP client computers.
Critical battery alarm level (DC)	Specifies the percentage of battery capacity remaining that triggers the critical battery alarm action. If you enable this policy setting, you must enter a numeric value (percentage) to set the battery level that triggers the critical notification. **Note:** The value should be lower than the level specified by **Low battery alarm level**. To set the action that is triggered, see the critical battery alarm action (AC) policy setting in Table 2 “Power Plan (Scheme) Deployments” on page 9. If you disable this policy setting or do not configure it, users can see and change this setting. This setting is not supported on Windows XP client computers.

Table 2. Power Plan (Scheme) Deployments (continued)

Policy settings	Description
Critical battery alarm action (AC)	Specifies the action that the Windows operating system takes when battery capacity reaches the critical battery alarm level. Possible actions include: • Do nothing • Sleep • Hibernate • Shut down This setting is not supported on Windows XP client computers.
Critical battery alarm action (DC)	Specifies the action that the Windows operating system takes when battery capacity reaches the critical battery alarm level. Possible actions include: • Do nothing • Sleep • Hibernate • Shut down This setting is not supported on Windows XP client computers.

Global Power Setting

Global Power Setting policies enable you to configure global power settings.

To configure Global Power Setting policies, do the following:

- For Windows XP client computers (ADM and ADMX files)

  Under **Computer Configuration**, click **Administrative Templates → Lenovo ThinkVantage Components → Power Manager → Global Power Setting**.
- For Windows Vista or Windows 7 client computers (ADM file)

  Under **Computer Configuration**, click **Administrative Templates → Classic Administrative Templates → Lenovo ThinkVantage Components → Power Manager for Vista/7 → Global Power Setting**.
- For Windows Vista or Windows 7 client computers (ADMX file)

  Under **Computer Configuration**, click **Administrative Templates → Lenovo ThinkVantage Components → Power Manager for Vista/7 → Global Power Setting**.

This table provides detailed information about each policy.

Table 3. Global Power Setting

Policy settings	Description
Beep when power state changes	Specifies whether the computer beeps when it is in one of the following conditions: • When the computer enters standby mode. • When the computer resumes operation after being in standby mode. • When the computer enters hibernation mode. • When the computer resumes operation after being in hibernation mode. • When the ac power adapter is connected to the computer or is disconnected from the computer. If you enable this policy setting, the computer will sound a beep.
Require password on standby resume	Specifies whether or not the user is prompted for a password when the system resumes from sleep. If you enable this policy setting, the user will be prompted for a password when the system resumes from sleep. This setting is supported only for the administrator account. For Windows Vista and Windows 7 operating systems, this setting takes effect only when the User Account Control (UAC) feature is disabled.
Enable Hibernation	Specifies whether to enable the computer to enter hibernation mode. This setting is supported only on Windows XP client computers.
Always On USB	Specifies whether the Always On USB connector supplies the USB power when the computer is in hibernation mode or turned off. By enabling the **Enable Always On USB** option and the **Enable even when the computer is off** option, you can charge the device even when the computer is in hibernation mode or turned off. The supported device might be an iPod® or iPhone® digital device; a BlackBerry® smartphone; or any other automatically detected device. The Always On USB connector supports the following functions: • Detecting the device automatically • Charging the device quickly when the computer is in use • Charging the device even when the computer is in hibernation mode or turned off with the ac power adapter attached **Notes:** • The Always On USB connector is available only on some models.

Table 3. Global Power Setting (continued)

Policy settings	Description
	• If the device cannot be detected or charged, reconnect it to the Always On USB connector. • The standard USB connectors and the USB connectors on a dock do not support the functions of the Always On USB connector.
Apply Video playback power plan automatically	Specifies whether to automatically change the power plan when WinDVD® is playing Blu-ray. If you enable this policy setting, the power plan will be changed to Video Playback when WinDVD is playing Blu-ray.
30 Day Standby	Specifies whether to enable the 30 Day Standby function. You can extend the battery life by enabling the 30 Day Standby function. Configurable options include: • Not configured • Enabled • Disabled If you enable this policy setting, Power Manager will automatically change the computer power state according to the computer and the computer configuration. After this policy is enabled, restart the client computer to make this setting take effect. This setting will take effect after Power Manger tracks and summarizes the computer sleeping and resuming actions for a few months. • If the computer supports deep sleep state, it will enter deep sleep state after the specified sleep state duration has expired. • If the computer does not support deep sleep state, it will enter hibernation mode after the specified sleep state duration has expired. When the hard disk drive is encrypted or protected, the computer will not enter hibernation mode from sleep state after the specified sleep state duration has expired. In this case, a warning message or a password authentication message might be displayed. The computer will not enter deep sleep state or hibernation mode in the following situations: • The Always On USB option is enabled and an iPod digital device, iPhone digital device, or BlackBerry smartphone device is attached. • An unauthorized battery is installed. • An ac power adapter is attached. **Notes:**

Table 3. Global Power Setting (continued)

Policy settings	Description
	• The wake timers, such as DVD play back, video recording, or task scheduler software, are prioritized when they are in use, and the sleep state duration might be changed. • When WinDVD is in use, the sleep state duration might be changed. • It takes more time for the computer to resume from deep sleep state than from sleep state. • This setting is supported only on Windows 7 client computers.
Instant Internet	Specifies whether to enable the Instant Internet function. Configurable options include: • Not configured • Enabled • Disabled If you enable this policy setting, the computer attempts to connect to the Internet as soon as it resumes from standby mode. This setting is supported only on Windows 7 client computers.
Hybrid Power Boost	Specifies whether to enable the Hybrid Power Boost function. Configurable options include: • Not configured • Enabled • Disabled When this policy setting is enabled, the computer uses both the battery and the ac power adapter at the same time for a high performance. When this policy setting is enabled, the battery gauge might be decreased even if the power status is displayed as **Charging** or **No activity**. In this situation, the value of the **Time required to fully charge** is not always accurate.
Dynamic Brightness Control	Specifies whether the brightness of the computer display automatically decreases in the following specific situations: • When the computer starts up or shuts down • When you log off the system • When you switch the user • When the computer is locking the screen • When the computer is displaying a screen saver

Table 3. Global Power Setting (continued)

Policy settings	Description
Undock action	Specifies the action that the Windows operating system takes when the computer is undocked. Possible actions include: • No action • Standby • Hibernate
CD-ROM speed	Specifies the speed of the CD-ROM drive. Possible speeds include: • High performance • Normal • Silent
Power Management CPU	Specifies the action that the Windows operating system takes when there is no system activity for a specified interval. Possible actions include: • Automatic • Disabled If you select **Automatic**, then when there is no system activity for a specified interval, the power-saving function is enabled and the microprocessor clock will be stopped automatically. If you select **Disabled**, the battery life will be shorter.
Power Management PCI bus	Specifies the action that the Windows operating system takes when there is no system activity for a specified interval. Possible actions include: • Automatic • Disabled If you select **Automatic**, the PCI Bus clock is stopped if there is no activity. If you select **Disabled**, the battery life will be shorter.

Table 3. Global Power Setting (continued)

Policy settings	Description
Sleep button	Specifies the action that the Windows operating system takes when pressing the Sleep button. Possible actions include: • Do nothing • Sleep • Hibernate Depending on your computer model, one of the following hot keys works as the Sleep button. • Fn+F4 • Fn+F1 • Fn+4
Power button	Specifies the action that the Windows operating system takes when a user presses the power button. Possible actions include: • Do nothing • Sleep • Hibernate • Shut down
Lid closed	Specifies the action that the Windows operating system takes when a user closes the lid on a notebook computer. Possible actions include: • Do nothing • Sleep • Hibernate • Shut down
Start menu power button	Specifies the action that the Windows operating system takes when a user selects the power button from the **Start** menu. Possible actions include: • Sleep • Hibernate • Shut down This setting is supported only on Windows Vista client computers.
Enable Low battery alarm	Specifies whether or not the computer enables the low battery alarm. This setting is supported only on Windows XP client computers.

Table 3. Global Power Setting (continued)

Policy settings	Description
Low battery alarm level	Specifies the percentage of battery capacity remaining that triggers the low battery alarm action. If you enable this policy setting, you must enter a numeric value (percentage) to set the battery level that triggers the low notification. To set the action that is triggered, see the low battery alarm notification policy setting in Table 3 “Global Power Setting” on page 31.
Low battery alarm notification	Enables a user notification when the battery capacity remaining equals the low battery alarm level. For Windows XP client computers, possible notifications include: • No action • Message • Beep • Message and beep For Windows Vista and Windows 7 client computers, possible notifications include: • Off • On
Low battery action	Specifies the action that the Windows operating system takes when battery capacity reaches the low battery alarm level. For Windows XP client computers, possible actions include: • No action • Standby • Hibernate • Shutdown • Maximize battery life For Windows Vista and Windows 7 client computers, possible actions include: • Do nothing • Sleep • Hibernate • Shut down • Maximize battery life
Enable Critical battery alarm	Specifies whether or not the computer enables the critical battery alarm. This setting is supported only on Windows XP client computers.

Table 3. Global Power Setting (continued)

Policy settings	Description
Critical battery alarm level	Specifies the percentage of battery capacity remaining that triggers the critical battery alarm action. If you enable this policy setting, you must enter a numeric value (percentage) to set the battery level that triggers the critical notification. **Note:** The value should be lower than the level specified by **Low battery alarm level**. To set the action that is triggered, see the critical battery alarm action policy setting in Table 3 “Global Power Setting” on page 31.
Critical battery alarm notification	Enables a user notification when the battery capacity remaining equals the critical battery alarm level. Possible notifications include: • No action • Message • Beep • Message and beep **Note:** This setting is supported only for the administrator account on Windows XP client computers.
Critical battery alarm action	Specifies the action that the Windows operating system takes when battery capacity reaches the critical battery alarm level. For Windows XP client computers, possible actions include: • No action • Standby • Hibernate • Shutdown For Windows Vista and Windows 7 client computers, possible actions include: • Do nothing • Sleep • Hibernate • Shut down

Table 3. Global Power Setting (continued)

Policy settings	Description
External monitor brightness	Specifies the brightness level of the external monitor with 100 brightness levels. If you enable this policy setting, you must select the desired brightness level. The external monitor brightness increases when you select a higher brightness level. This setting is supported only when both the client computer and the external monitor support the Display Data Channel / Command Interface (DDC/CI) protocol. **Notes:** 1. The range of the brightness level is from 0 to 100. The external monitor brightness increases when you select a higher brightness level. This policy setting does not support monitors with a brightness level higher than 100. 2. This setting is not supported on Windows XP client computers.
Dim external monitor brightness	Specifies the period of inactivity before the client computer automatically decreases the external monitor brightness and the brightness level when the **Dim external monitor brightness** setting takes effect after the specified period. You can specify the period of inactivity in seconds. This setting is supported only when both the client computer and the external monitor support the Display Data Channel / Command Interface (DDC/CI) protocol. **Notes:** 1. The range of the brightness level is from 0 to 100. The monitor brightness increases when you select a higher brightness level. This policy setting does not support monitors with a brightness level higher than 100. 2. This setting is not supported on Windows XP client computers.

Battery Maintenance

The Battery Maintenance policy enables you to configure the battery maintenance settings.

To configure the Battery Maintenance policy, do the following:

- For Windows XP client computers (ADM and ADMX files)

  Under **Computer Configuration**, click **Administrative Templates → Lenovo ThinkVantage Components → Power Manager → Battery Maintenance**.
- For Windows Vista or Windows 7 client computers (ADM file)

  Under **Computer Configuration**, click **Administrative Templates → Classic Administrative Templates → Lenovo ThinkVantage Components → Power Manager for Vista/7 → Battery Maintenance**.

- For Windows Vista or Windows 7 client computers (ADMX file)

  Under **Computer Configuration**, click **Administrative Templates → Lenovo ThinkVantage Components → Power Manager for Vista/7 → Battery Maintenance**.

This table provides detailed information about each policy setting.

Table 4. Battery Maintenance

Policy settings	Description
Battery charge thresholds	Specifies the battery charge thresholds. This policy applied to *normal* batteries only. Possible charge thresholds include: • Always fully charge (Start when below 96%; stop at 100%) • Optimize for battery lifespan (automatically change for me) **Note:** If you select this option, the Notify me when thresholds change setting is available for selection. • Custom **Note:** If you select this option, the value in the **Stop charging at** spinbox must be set at least 4% above the value of the **Start charging when below** spinbox. Otherwise, you will deploy the Always fully charge (Start when below 96%; stop at 100%) setting to the client computers.
Battery charge modes	Specifies the battery charge modes. This policy applies to *dual mode* batteries only. Possible charge modes include: • Always fully charge (Start when below 96%; stop at 100%) • Optimize for battery lifespan (automatically change for me) **Note:** If you select this option, the Notify me when thresholds change setting is available for selection. • Custom **Note:** If you select this option, the value in the **Stop charging at** spinbox must be set at least 4% above the value of the **Start charging when below** spinbox. Otherwise, you will deploy the Always fully charge (Start when below 96%; stop at 100%) setting to the client computers.
Battery firmware update automatic check	Automatically check for battery firmware updates, and update **Last checked date** after a check. Configurable options include: • Not configured • Enabled

Table 4. Battery Maintenance (continued)

Policy settings	Description
	Note: If you select this option, you must select **Automatic mode enable** to enable this policy setting. • Disabled This setting is supported only on Windows 7 client computers.

Power Agenda Deployments

The Power Agenda Deployments policy enables you to configure the Power Agenda Deployments settings.

To configure the Power Agenda Deployments policy, do the following:

- For Windows XP client computers (ADM and ADMX files)

  Under **User Configuration**, click **Administrative Templates → Lenovo ThinkVantage Components → Power Manager → Battery Power Agenda Deployments**.
- For Windows Vista or Windows 7 client computers (ADM file)

  Under **User Configuration**, click **Administrative Templates → Classic Administrative Templates → Lenovo ThinkVantage Components → Power Manager for Vista/7 → Power Agenda Deployments**.
- For Windows Vista or Windows 7 client computers (ADMX file)

  Under **User Configuration**, click **Administrative Templates → Lenovo ThinkVantage Components → Power Manager for Vista/7 → Power Agenda Deployments**.

The following table provides detailed information about each policy.

Table 5. Power Agenda Deployments

Policy settings	Description
New	Specifies whether to allow users to create a power agenda on the **Power Agendas** tab on client computers. If you enable this policy setting, users can create a power agenda on client computers. If you disable this policy setting, the **New** button is unavailable and users cannot create a power agenda.
Edit	Specifies whether to allow users to edit a power agenda on the **Power Agendas** tab on client computers. If you enable this policy setting, users can edit a power agenda on client computers. If you disable this policy setting, the **Edit** button is unavailable and users cannot edit the selected power agendas. **Note:** To allow users of client computers to edit a power agenda, you also should enable the **Configurable** policy setting for this power agenda. See the configurable policy setting in Table 6 “Power Agenda*” on page 42.

Table 5. Power Agenda Deployments (continued)

Policy settings	Description
Delete	Specifies whether to allow users to edit a power agenda on the **Power Agendas** tab on client computers. If you enable this policy setting, users can edit a power agenda on client computers. Specifies whether to allow users to delete a power agenda on the **Power Agendas** tab on client computers. If you enable this policy setting, users can delete a power agenda on client computers. If you disable this policy setting, the **Delete** button is unavailable and users cannot delete the selected power agendas. If you disable this policy setting, the **Edit** button is unavailable and users cannot edit the selected power agendas. **Note:** To allow users of client computers to delete a power agenda, you also should enable the **Configurable** policy setting for this power agenda. See the configurable policy setting in Table 6 “Power Agenda*” on page 42.
PolicyStamp	Specifies a policy stamp to indicate whether a power agenda needs to be deployed or updated. If you enable this policy setting and the updated deployment is different from the previous one, the updated deployment will be deployed to client computers and overwrite the previous one. **Notes:** 1. You need to set a policy stamp when you deploy a power agenda for the first time. 2. You need to set a policy stamp for the deployment each time, and use a policy stamp that is different from the previous deployment. For example, you can set the current date and time as a policy stamp. 3. If you disable or do not configure this policy setting, the updated deployment will not be deployed to client computers and will not overwrite the previous one. 4. If you deploy power agendas, all power agendas that are created by end users will be overwritten. 5. When deploying power agenda policies, the computer will not check whether the policies conflict with other policy settings automatically. If conflicts exist, the deployment process might be stopped without an alert. Therefore, you should check whether the power agenda deployment process has competed or not.

You can specify a maximum of 10 power agendas every time you deploy power agendas.

To configure the power agendas from 1 to 10, do the following:

- For Windows XP client computers (ADM and ADMX files)

  Under **User Configuration**, click **Administrative Templates → Lenovo ThinkVantage Components → Power Manager → Power Agenda Deployments → Power Agenda***.

- For Windows Vista or Windows 7 client computers (ADM file)

  Under **User Configuration**, click **Administrative Templates → Classic Administrative Templates → Lenovo ThinkVantage Components → Power Manager for Vista/7 → Power Agenda Deployments → Power Agenda***.

- For Windows Vista or Windows 7 client computers (ADMX file)

  Under **User Configuration**, click **Administrative Templates → Lenovo ThinkVantage Components → Power Manager for Vista/7 → Power Agenda Deployments → Power Agenda***.

Note: * stands for number 1 to 10.

To deploy a specific power agenda on client computers, you can configure the power agenda settings described in the following table.

*Table 6. Power Agenda**

Policy settings	Description
Run	Specifies whether to run this power agenda. If you enable or do not configure this policy setting, the check box for this power agenda on the **Power Agendas** tab is selected, and this power agenda will run on client computers. If you disable this policy setting, the check box for this power agenda is cleared, and this power agenda will not run on client computers.
Configurable	Specifies whether users can edit or delete this power agenda on client computers. If you enable this policy setting, users can edit or delete the selected power agendas on client computers. If you disable or do not configure this policy setting, users cannot edit or delete the selected power agendas on client computers. **Note:** To allow users of client computers to edit or delete a power agenda, you also should enable the **Edit** or **Delete** policy setting for this power agenda. See the edit policy setting and delete policy setting in Table 5 “Power Agenda Deployments” on page 40
Name	Specifies the name of the power agenda to be deployed to client computers. If you enable this policy setting, you can input a specific name or leave it blank for this power agenda. **Note:** The name should contain no more than 32 single-byte characters or 16 double-byte characters.

Table 6. Power Agenda (continued)*

Policy settings	Description
Action	Specifies the actions that this power agenda will perform. The possible actions include: • Change sleep timer (For Windows Vista/7) or Sleep (For Windows XP) • Change hibernation timer (For Windows Vista/7) or Hibernate (For Windows XP) • Change monitor off timer • Shut down • Switch to a Power Plan (For Windows Vista/7) or Switch to a Power Scheme (For Windows XP) • Set Monitor Brightness • Peak power scheduler **Notes:** 1. This policy setting is mandatory. If you enable this policy setting, you should select one action. 2. Each action is related to the following corresponding policy settings. If the policy setting that relates to the action is undefined or disabled, the default value will be applied or the power agenda will not be deployed. • All actions – Name policy setting – Run policy setting – Configuration policy setting – Days of week policy setting – Frequency policy setting – Notify policy setting • Switch to a Power Plan (For Windows Vista/7) or Switch to a Power Scheme (For Windows XP) – Power Plan policy setting (For Windows Vista/7) or Power Scheme policy setting (For Windows XP) – Time policy setting • Change sleep timer, Change hibernation timer, and Change monitor off timer (For Windows Vista/7) or Sleep, Hibernate and Change monitor off timer (For Windows XP) – Idle Timer policy setting – Time policy setting • Shut down – Time policy setting • Set monitor brightness – ThinkPad LCD Brightness policy setting

Table 6. Power Agenda (continued)*

Policy settings	Description
	– External monitor brightness policy setting (Windows Vista/7 only) – Time policy setting • Peak power scheduler – Peak power scheduler - terms of validity policy setting – Peak power scheduler - time policy setting
Idle Timer	Specifies the period of inactivity before your computer enters sleep or hibernation mode, or turns off. If you enable this policy setting, you must set a value in seconds.
Smart Shut down	Specify whether to put the computer into hibernation mode if the shutdown process is blocked by some applications. If you enable this policy setting and select the check box, your computer will enter hibernate mode when the computer shutdown is blocked. If you enable this policy setting and clear the check box, your computer will be shut down. If you do not configure this policy setting, the default setting is enabled.
Power Plan (Scheme)	Specifies the name of the power plan (scheme) that the power agenda will switch to. If you set the **Action** policy setting to **Switch to a Power Plan** (For Windows Vista/7) or **Switch to a Power Scheme** (For Windows XP), you should enable this policy setting and input a power plan (scheme) name. See the action policy setting in Table 6 “Power Agenda*” on page 42. If the power plan (scheme) name does not exist on client computers, the power agenda will not switch to this power plan (scheme). **Notes:** 1. The power plan (scheme) name should contain no more than 32 single-byte characters or 16 double-byte characters. 2. If you disable or do not configure this policy setting, but set the **Action** policy setting to **Switch to a Power Plan** (For Windows Vista/7) or **Switch to a Power Scheme** (For Windows XP), users cannot use this power agenda on client computers. See the action policy setting in Table 6 “Power Agenda*” on page 42.

Table 6. Power Agenda (continued)*

Policy settings	Description
ThinkPad LCD Brightness 16	Specifies the brightness level (from 0 to 15) of client computer monitors with 16 brightness levels. If you set the **Action** policy setting to **Change monitor brightness**, you should enable this policy setting and input a brightness level. See the action policy setting in Table 6 “Power Agenda*” on page 42. If you disable or do not configure this policy setting, but set the **Action** policy setting to **Change monitor brightness**, users cannot use this power agenda on client computers. See the action policy setting in Table 6 “Power Agenda*” on page 42. **Note:** The range of the brightness level is from 0 to 15. The monitor brightness increases when you select a higher brightness level. This policy setting does not support monitors with a brightness level higher than 15.
ThinkPad LCD Brightness 8	Specifies the brightness level (from 0 to 7) of client computer monitors with 8 brightness levels. If you set the **Action** policy setting to **Change monitor brightness**, you should enable this policy setting and input a brightness level. See the action policy setting in Table 6 “Power Agenda*” on page 42. If you disable or do not configure this policy setting, but set the **Action** policy setting to **Change monitor brightness**, users cannot use this power agenda on client computers. See the action policy setting in Table 6 “Power Agenda*” on page 42. **Note:** The range of the brightness level is from 0 to 7. The monitor brightness increases when you select a higher brightness level. This policy setting does not support monitors with a brightness level higher than 7.
External monitor brightness	Specifies the brightness level (from 0 to 100) of the external monitor. If you set the **Action** policy setting to **Change monitor brightness**, you should enable this policy setting and input a brightness level. See the action policy setting in Table 6 “Power Agenda*” on page 42. If you disable or do not configure this policy setting, but set the **Action** policy setting to **Change monitor brightness**, users cannot use this power agenda on client computers. See the action policy setting in Table 6 “Power Agenda*” on page 42. **Notes:** 1. The range of the brightness level is from 0 to 100. The external monitor brightness increases when you select a higher brightness level. This policy setting does not support monitors with a brightness level higher than 100.

Table 6. Power Agenda (continued)*

Policy settings	Description
	2. This setting is not supported on Windows XP client computers.
Frequency	Specifies the time interval of the power agenda execution. Possible frequency includes: • Daily • Weekly If you disable or do not configure this policy setting, users cannot use this power agenda on client computers. **Note:** This policy setting is mandatory. If you enable this policy setting, you should select one frequency.
Peak power scheduler - terms of validity	Specifies the effective term of Peak power scheduler. If you set the **Action** policy setting to **Peak power scheduler**, you should enable this policy setting. The Peak power scheduler setting is enabled only during the period specified by this policy setting. **Note:** If you set the invalid term, it is automatically adjusted by Power Manager.
Time	Specifies the start time and end time, including the hours and minutes, when the power agenda runs or stops. If you enable this policy setting, you should set the specific time. If you disable or do not configure this policy setting, but set the **Action** policy setting to **Peak power scheduler**, users cannot use this power agenda on client computers. See the action policy setting in Table 6 “Power Agenda*” on page 42. **Notes:** 1. If you set the **Action** policy setting to **Shut down**, you only need to set the start time. 2. If you set the **Action** policy setting to **Peak power scheduler**, the power agenda will use the Peak power scheduler - time policy setting instead of this time policy setting.
Peak power scheduler - time	Specifies when the Peak power scheduler setting is effective. If you set the **Action** policy setting to **Peak power scheduler**, you should enable this policy setting. The Peak power scheduler setting is enabled only during the period specified in this policy setting.

Table 6. Power Agenda (continued)*

Policy settings	Description
Days of week	Specifies the days of a week that the power agenda runs weekly. If you enable this policy setting, you should select the days of a week. If you disable or do not configure this policy setting, but set the **Frequency** policy setting to **Weekly**, users cannot use this power agenda on client computers. See the frequency policy setting in Table 6 “Power Agenda*” on page 42.
Notify	Specifies whether or not to notify users before the power agenda runs. If you enable this policy setting, you can select the notification time before the power agenda runs on client computers. The range of the notification time is from 1 to 60 minutes. If you disable or do not configure this policy setting, users will not be notified before the power agenda runs on client computers. **Note:** If you enable this policy setting, but clear the notification check box, users will not be notified before the power agenda runs on client computers.
Disable peak power scheduler	Specifies the situations for the Peak power scheduler setting to be disabled. If you enable **when remaining battery level is less than**, you must provide a value in percentage. When a battery remaining percentage is less than this value, the Peak power scheduler setting will be disabled. If you enable **automatically by monitoring the battery usage**, the Peak power scheduler setting will be automatically disabled according to the battery usage.

EnergyWise Configuration Deployments

The EnergyWise Configuration Deployments policy enables you to configure the EnergyWise Configuration Deployments settings.

To configure the EnergyWise Configuration Deployments policy, do the following:

- For Windows XP client computers (ADM and ADMX files)

  Under **Computer Configuration**, click **Administrative Templates → Lenovo ThinkVantage Components → Power Manager → EnergyWise Configuration Deployments**.
- For Windows Vista or Windows 7 client computers (ADM file)

  Under **Computer Configuration**, click **Administrative Templates → Classic Administrative Templates → Lenovo ThinkVantage Components → Power Manager for Vista/7 → EnergyWise Configuration Deployments**.
- For Windows Vista or Windows 7 client computers (ADMX file)

Under **Computer Configuration**, click **Administrative Templates → Lenovo ThinkVantage Components → Power Manager for Vista/7 → EnergyWise Configuration Deployments**.

The following table provides the detailed information about each policy setting.

Table 7. EnergyWise Configuration Deployments

Policy settings	Description
EnergyWise	Specifies whether to use the EnergyWise solution. Configurable options include: • Not configured • Enabled • Disabled If you enable this policy setting, the EnergyWise solution is enabled on all client computers. If you disable this policy setting, the EnergyWise solution is disabled on all client computers. This setting is supported only on Windows 7 client computers.
Port No	Specifies the port number used to communicate with the EnergyWise solution. Configurable options include: • Not configured • Enabled • Disabled If you enable this policy setting, you must provide a port number. **Note:** The default port number is 43440.
Domain	Specifies the domain name of the EnergyWise solution. Configurable options include: • Not configured • Enabled • Disabled If you enable this policy setting, you must input the domain name of the EnergyWise solution. **Note:** The default domain name is cisco.

Table 7. EnergyWise Configuration Deployments (continued)

Policy settings	Description
Secret	Specifies the join password of the EnergyWise domain. Configurable options include: • Not configured • Enabled • Disabled If you enable this policy setting, you must input the join password of the EnergyWise domain. **Note:** The default join password is cisco.
Name	Specifies the name of the client computer. Configurable options include: • Not configured • Enabled • Disabled If you enable this policy setting, you must input name of the client computer. If you disable or do not configure this policy setting, the name will be restored to the default value. **Note:** The client computer name is used as the default name value. Therefore, the default name value is different on each client computer.
Role	Specifies the role of EnergyWise. Configurable options include: • Not configured • Enabled • Disabled If you enable this policy setting, you must input the role of the client computer. If you disable or do not configure this policy setting, the role will be restored to the default value. **Note:** The machine type and model is used as the default value of the role. Therefore, the default value of the role is different on each client computer.

Table 7. EnergyWise Configuration Deployments (continued)

Policy settings	Description
Device	Specifies the device type of the client computer. Configurable options include: • Not configured • Enabled • Disabled If you enable this policy setting, you must input the device type of the client computer. **Note:** The default device type is PC.
Importance	Specifies the importance of EnergyWise. Configurable options include: • Not configured • Enabled • Disabled If you enable this policy setting, you must provide a value of importance. **Note:** The possible value varies between one and 100.
Keyword	Specifies the keywords of EnergyWise. Configurable options include: • Not configured • Enabled • Disabled If you enable this policy setting, you must input the keywords of the client computer.

Chapter 4. Deploying the power plan with the power plan deployment function

The power plan deployment function enables the IT administrator to deploy the power plan by using the `ImportPowerPlan` command line and the `ControlPowerPlan` command line instead of ADM or ADMX files.

Note: The power plan deployment function is supported on Power Manager 6.60.1 and later versions on Windows Vista and Windows 7 client computers.

Overview of the power plan deployment

This section provides general instructions on how to export the power plan, and then deploy and manage the power plan.

Note: For more information about how to export, deploy, and manage the power plan step by step, see "Sample power plan deployment" on page 55.

Exporting the power plan

To export the power plan, do the following:

1. Start the Power Manager program. The Power Manager window opens.
2. Switch from Basic mode to Advanced mode.
3. Select the power plan you want to deploy, and then click **Export**. The Exporting a power plan window opens.
4. Click **Edit Plan** to edit the name and the settings of the power plan.
5. Click **Save** and specify a file path to save the power plan in an INI file. The power plan is exported.

Deploying and managing the power plan

To deploy and manage the power plan, do the following:

1. Move the INI file with the exported power plan to a shared folder that client computers can visit on the server.
2. Create a logon script including the `ImportPowerPlan` command line and the `ControlPowerPlan` command line. Then, move the script to the specified file path on the server. The power plan is deployed to client computers and managed according to the logon script.

   Notes:

   a. For more information about the logon script, see "Sample script" on page 54.

   b. For more information about the specified file path on the server, see "Sample power plan deployment" on page 55.

The following table provides detailed information about each policy setting in the `ImportPowerPlan` command line in the logon script.

Table 8. Policy settings in the `ImportPowerPlan` *command line*

Policy settings	Description	Prerequisite
-p <file path>	Specify the file path for the exported INI file. This setting is ignored in one of the following scenarios: • The **Do not allow client to create new power plan** policy setting is enabled in the Local Group Policy Editor. • The **-InhibitCreate** policy setting is enabled in the `ControlPowerPlan` command line.	Mandatory
-u <numeric value>	Set the numeric value to prevent the power plan from updating automatically every time users log in to client computers. The recommended style of the numeric value is “yyyymmdd” (for example, “20130312”). Only when you reset the numeric value larger than the previous one, the power plan will be updated automatically when users log in. **Notes:** • All the numeric values will be saved in the Registry Editor. • If the numeric value is 0, the power plan will be updated automatically every time users log in.	Optional
-a	Set the imported power plan to be active. This setting is ignored in one of the following scenarios: • The policy setting **Do not allow client to switch power plan** or **Select an Active Power Plan** is enabled in the Local Group Policy Editor. • The **-InhibitSwitch** policy setting is enabled in the `ControlPowerPlan` command line.	Optional

The following table provides detailed information about each policy setting in the `ControlPowerPlan` command line in the logon script.

Table 9. Policy settings in the `ControlPowerPlan` *command line*

Policy settings	Description	Prerequisite
-InhibitSwitch <Enable/Disable>	Specify whether to allow users to switch power plans. If you enable this policy setting, the **Delete** button is dimmed and users cannot delete the selected power plan. This setting is ignored if the **Do not allow client to switch power plan** policy setting is enabled in the Local Group Policy Editor.	Optional
-InhibitCreate <Enable/Disable>	Specify whether to allow users to create a new power plan. If you enable this policy setting, the **Create** button is dimmed and users cannot create a new power plan. This setting is ignored if the **Do not allow client to create new power plan** policy setting is enabled in the Local Group Policy Editor.	Optional
-SetActivePlan <plan name>	Set the power plan to be active by specifying the power plan name. This setting is ignored in one of the following scenarios: • The policy setting **Do not allow client to switch power plan** or **Select an Active Power Plan** is enabled in the Local Group Policy Editor. • The **Do not allow client to select specific power plan** policy setting is enabled in the Local Group Policy Editor and the power plan you want to set to be active is specified in the policy setting. • The **-InhibitSwitch** policy setting is enabled in the `ControlPowerPlan` command line. **Note:** When both the two policy settings **-InhibitSwitch** and **-SetActivePowerPlan** are enabled, the specified power plan becomes active first, and then users cannot switch power plans.	Optional

Sample script

This section provides a sample script showing how to use the `ImportPowerPlan` command line and the `ControlPowerPlan` command line in the logon script.

PowerPlanDeployment.bat

```
@ECHO OFF
SETLOCAL

IF .%PROCESSOR_ARCHITECTURE%.==.x86. (
 SET PMDllName=PWMTR32V.DLL
 SET PMREG_INFO="HKEY_LOCAL_MACHINE\SOFTWARE\Lenovo\PWRMGRV\InstallInfo"
 SET PMREG_PATH="HKEY_LOCAL_MACHINE\SOFTWARE\Lenovo\PWRMGRV\Path"
) ELSE (
 SET PMDllName=PWMTR64V.DLL
 SET PMREG_INFO="HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Lenovo\PWRMGRV\InstallInfo"
 SET PMREG_PATH="HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Lenovo\PWRMGRV\Path"
)

FOR /F "tokens=1,2* " %%i in ('reg query %PMREG_INFO% /v "PWRMGRVersion"' ) DO (
 IF "%%i"=="PWRMGRVersion" (
  SET PM_Version=%%k
 )
)

FOR /F "tokens=1-3 delims=." %%i in ('echo %PM_Version%') DO (
 SET PM_MAJORVER=%%i
 SET PM_MINORVER=%%j
)

FOR /F "tokens=1,2* " %%i in ('reg query %PMREG_PATH% /ve' ) DO (
 SET PM_INSPATH=%%k
)

IF %PM_MAJORVER% NEQ 8 (
 IF %PM_MAJORVER% NEQ 6 goto END
 IF %PM_MINORVER% LSS 60 goto END
)

SET PMDllPath=%PM_INSPATH%\%PMDllName%
SET PMDllPath=%PM_INSPATH%\%PMDllName%

IF NOT EXIST "%PMDllPath%" GOTO END

SET SharedFile=\\win-chim5mob2rb\Share\ppd_plan.ini
SET ImportFile=%TMP%\ppd_plan.ini
SET ImpResultFile=%TMP%\ppd_imp_result.txt
SET CtlResultFile=%TMP%\ppd_ctl_result.txt

COPY "%SharedFile%" "%TMP%"

RUNDLL32.EXE "%PMDllPath%",ImportPowerPlan -p "%ImportFile%" -u 20130601 -a > "%ImpResultFile%"

FOR /F "tokens=1,2 delims=:" %%1 IN (%ImpResultFile%) DO (
 @ECHO %%1 : %%2
 IF .%%2.==.Error. SET IMPERROR=TRUE
)
IF .%IMPERROR%.==.TRUE. goto ERROR_IMP

RUNDLL32.EXE "%PMDllPath%",ControlPowerPlan -InhibitCreate Enable -InhibitSwitch Enable > "%CtlResultFile%"

FOR /F "tokens=1,2 delims=:" %%1 IN (%CtlResultFile%) DO (
 @ECHO %%1 : %%2
```

```
 IF .%%2.==.Error. SET CTLERROR=TRUE
)
IF .%CTLERROR%.==.TRUE. goto ERROR_CTL

goto DELEND

:ERROR_IMP
goto END

:ERRPR_CTL
goto END

:DELEND
DEL /F %ResultFile%

:END
ENDLOCAL
```

Sample power plan deployment

This section provides instructions on how to deploy the power plan step by step.

To deploy the power plan step by step, do the following:

1. On the IT administrator computer, do the following:
   a. Export the power plan and save it as the PPD_PLAN.ini file. See “Exporting the power plan” on page 51.
   b. Create the logon script and save it as the PowerPlanDeployment.bat file. See “Sample script” on page 54.
2. On the server, do the following:
   a. Set up the Active Directory domain on the Windows server.
   b. Create a folder on the server and set the folder to be shared.
   c. Move the PPD_PLAN.ini file that you created on the IT administrator computer to the shared folder on the server.
   d. Click **Start → Administrative Tools → Active Directory Users and Computers**. The Active Directory Users and Computers window opens.
   e. Create a user with the name “Pwr01” and a group with the name “PwrGroup”. Then, add the Pwr01 user to the PwrGroup group.
   f. Click **Start → Administrative Tools → Server Manager**. The Server Manager window opens.
   g. Under **Features**, click **Group Policy Management → Forest: YOURDOMAIN → Domains**. Then, right-click the subitem **YOURDOMAIN** and select **Create a GPO in this domain, and Link it here**. The New GPO window opens.
   h. Type "PwrGPO" in the **Name** field and click **OK**. A new item **PwrGpo** is created under **YOURDOMAIN**.
   i. Click **PwrGPO**. A message box is displayed, prompting you that you have selected a link to a Group Policy Object (GPO). Click **OK** and the PwrGPO window opens.
   j. On the **Scope** tab, click **Add** in the **Security Filtering** area.
   k. Type "PwrGroup" in the **Enter the object name to select** field and click **OK**. A new item **PwrGroup** is created in the **Security Filtering** area.
   l. Select **Authenticated Users** in the **Security Filtering** area and click **Remove**. A message box is displayed, prompting you that whether you want to remove the item. Click **OK**. The **Authenticated Users** item is removed.

m. Right-click **PwrGPO** and select **Edit**. The Group Policy Management Editor window opens.
n. Under **User Configuration**, click **Policies → Windows Settings → Select Scripts (Logon/Logoff)**. Then, double-click **Logon**. The Logon Properties window opens.
o. Click **Show Files** on the **Scripts** tab. The Logon window opens.
p. Move the PowerPlanDeployment.bat file that you have created on the IT administrator computer to the file path shown in the top area of the Logon window. Then, close the Logon window.
q. Click **Add** on the **Scripts** tab. The Add a Script window opens.
r. Click **Browse**. The Browse window opens and the PowerPlanDeployment.bat file is present in the file path.
s. Select the PowerPlanDeployment.bat file and click **Open**. The Browse window closes and **PowerPlanDeployment.bat** is displayed in the **Script Name** field.
t. Click **OK**. The Add a Script window closes and a new item **PowerPlanDeployment.bat** is present in the **Logon Scripts for PwrGPO** area.
u. Click **OK** to save the logon properties.

3. On client computers, do the following:
   a. Join client computers to the Active Directory domain.
   b. Log in to client computers with the user name “Pwr01”. The power plan is deployed automatically.

Tips about the power plan deployment function

This section provides some tips about the power plan deployment function.

- The following codes might be displayed when you deploy the power plan with the power plan deployment function.

Output code	Description
RC_Success	The power plan is imported or updated successfully.
RC_NonParams	Parameters are not specified.
RC_InvalidParams	Callback options are not sufficient or the parameter format is wrong.
RC_InvalidIniFile	The INI file does not exist or its format specified by the **-p** policy setting is wrong.
RC_HavingSameName	A power plan with the same name already exists.
RC_HavingMaxPowerPlans	The number of power plans reaches the maximum.
RC_CannotImport	You cannot create a power plan because of the policy setting in the Local Group Policy Editor or in the `ControlPowerPlan` command line.
RC_CannotUpdate	The power plan cannot be updated automatically because the new numeric value specified in the **-u** policy setting is smaller than the previous one.
RC_CannotSetActive	You cannot switch the power plan because of the policy setting in the Local Group Policy Editor or in the `ControlPowerPlan` command line.
RC_Unknown	This is an undefined error.

- The `ImportPowerPlan` command line and the `ControlPowerPlan` command line are not implemented on Power Manager versions earlier than 6.60.1. If you run the two commands on these earlier versions, an error message might be displayed on client computers. The error does not do harm to the computers. If you want to avoid this error, check the system environment by referring to “Sample script” on page 54.

Appendix A. Deploying power schemes for non-administrator groups or users on Windows XP client computers

Non-administrator groups or users on Windows XP client computers have no permission to change the power scheme settings. By design, this is a feature of the Windows XP operating system. To deploy Power Manager plans successfully to Windows XP client computers for non-administrator groups or users, the IT administrator needs to configure the domain server by doing the following:

1. On a domain server, click **Start → Run**, and type `dsa.msc` in the **Open** box. The Active Directory Users and Computers window opens.
2. Right-click on a domain container and select **Properties**. The Properties window opens.
3. Click the **Group Policy** tab, and click the **New** button to create a group policy object.
4. Rename the group policy object with `Power Configuration Policy` and press Enter.
5. Click **Edit**. The Group Policy Object Editor opens.
6. Set the security permission for the following key:
   `MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Controls Folder\PowerCfg`
   by doing the following:
   a. Under **Computer Configuration**, click **Windows Settings → Security Settings**, right-click **Registry**, and select **Add Key**. The Select Registry Key window opens.
   b. Type the following key in the **Selected key** box:
      `MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Controls Folder\PowerCfg`
   c. Click **OK**. The Database Security window opens.
   d. On the **Security** tab, select the non-administrator group(s) or user(s) you want to give permission to, assign Full Control permission to the group(s) or user(s), and click **Apply**.
   e. Click **Advanced**. The advanced window opens.
   f. On the **Permissions** tab, select the group(s) or user(s), select the **Allow inheritable permissions from the parent to propagate to this object and all child objects. Include these with entries explicitly defined here.**" option, and click **OK**. The Add Object window opens.
   g. Select the **Propagate inheritable permissions to all subkeys** option, and click **OK**.
7. Set the security permission for the following key:
   `USERS\.DEFAULT\Control Panel\PowerCfg`
   by doing the following:
   a. Under **Computer Configuration**, click **Windows Settings → Security Settings**, right-click **Registry**, and select **Add Key**. The Select Registry Key window opens.
   b. Type the following key in the **Selected key** box:
      `USERS\.DEFAULT\Control Panel\PowerCfg`
   c. Click **OK**. The Database Security window opens.
   d. On the **Security** tab, select the non-administrator group(s) or user(s) you want to give permission to, assign Full Control permission to the group(s) or user(s), and click **Apply**.
   e. Click **Advanced**. The advanced window opens.
   f. On the **Permissions** tab, select the group(s) or user(s), select the **Allow inheritable permissions from the parent to propagate to this object and all child objects. Include these with entries explicitly defined here.**" option, and click **OK**. The Add Object window opens.
   g. Select the **Propagate inheritable permissions to all subkeys** option, and click **OK**.
8. Check there are two group policy objects generated in the Active Directory Users and Computers window:

- MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Controls Folder\PowerCfg
- USERS\.DEFAULT\Control Panel\PowerCfg

Notes:

1. Non-administrator groups or users on Windows XP client computers must have the write permission for the following registry subkeys:
   - HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Controls Folder\PowerCfg
   - HKEY_ USERS\.DEFAULT\Control Panel\PowerCfg
2. For further information on how to use the powercfg.exe utility for power schemes in Windows XP operating systems, refer to the Web site at:
   http://support.microsoft.com/default.aspx/kb/915160

After completing the configuration, the non-administrator group or user in the Windows XP client computers can have the permission to apply the deployed Power Manager power scheme.

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