



Installing and Configuring Away Mode

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Abstract

Away mode is a new feature included in Update Rollup 2 for Microsoft® Windows® XP Media Center Edition 2005 that allows the computer to appear off to the user while it continues to perform tasks that do not require user input. This paper provides OEMs information on installing, uninstalling, and configuring Away mode on computers running Update Rollup 2 for Microsoft Windows XP Media Center Edition 2005. It also includes hardware and software requirements for implementing Away mode functionality.

This information applies for Microsoft Windows XP Media Center Edition 2005.

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Introduction

This paper provides details on installing, uninstalling, and configuring Away mode on computers that are running Update Rollup 2 for Microsoft® Windows® XP Media Center Edition 2005. It also includes requirements for implementing Away mode functionality.

Away mode is a new feature included in Update Rollup 2 for Microsoft Windows XP Media Center Edition 2005 that allows the computer to appear off to the user while it continues to perform tasks that do not require user input, such as recording television and viewing Media Center Extender sessions. When the user presses the sleep button on the computer or remote control, the computer goes into a lower power state called Away mode, instead of going into Standby mode. When the computer is in Away mode, the Away mode technology:

- Turns off the video port for the main display (the monitor appears blank).
- Mutes all audio output.
- Filters the primary input devices (such as the mouse, keyboard, or remote control).
- Puts the CPU into an adaptive power policy that may reduce system power
- Provides a notification mechanism for hardware manufacturers to control system hardware functions, including:
 - Turning off the power light-emitting diode (LED).
 - Slowing down or stopping the fans.
- Controls the behavior of Microsoft Windows XP Media Center Edition 2005 functions (such as stopping media playback).
- Provides a notification mechanism for independent software vendors (ISVs) to control the behavior of software functions, including:
 - Stopping media playback.
 - Changing the status of real-time communication software (such as Microsoft MSN® Messenger) from Online to Away.
- Instantly returns the computer to normal activity when media devices (universal serial bus [USB] flash memory, optical media) are detected or when the keyboard or mouse are used.

Installation

Only licensed OEMs can pre-install Away mode. Away mode is not available for end-user installation or through Windows Update for computers that have been upgraded to Rollup 2 from previous versions of Windows XP Media Center Edition.

BIOS Modifications

Before you install Away mode on the computer, you must modify the basic input/output system (BIOS) first. If the BIOS is not modified, you will not be able to install Away mode and the following error message will display: "The environment is incorrect."

Please see the "Requirements for Away Mode Functionality" section of this document for BIOS requirements.

Away mode uses the Microsoft Update.exe technology to install a setup/uninstall package. The files are signed and rolled up in a CAB file (**AwayMode- KB902437-xxx.exe** [where xxx = the three letter acronym for the language being installed]) that is executed to initiate the Setup process, which includes:

- Checking the operating system, BIOS, hardware, and registry.
- Copying the INF and DLL files, and installing the service and driver files.
- Restarting the computer.

Before installing Away mode, perform the following tasks:

1. Update BIOS object.
2. Confirm that Microsoft Windows XP Media Center Edition 2005 is installed before you install Update Rollup 2 for Microsoft Windows XP Media Center Edition 2005.
3. Install Update Rollup 2 for Microsoft Windows XP Media Center Edition 2005.

Hardware and Software Check

During Setup, the computer is checked for the correct operating system, the updated BIOS, and compatible hardware. After this check is complete, the product's End-User License Agreement (EULA) is displayed. Setup continues after the EULA is accepted.

Operating System

You can install Away mode only on computers running Update Rollup 2 for Microsoft Windows XP Media Center Edition 2005. If this version of the operating system is not detected, Setup cancels the installation and the following error message displays: "The environment is incorrect."

BIOS

Computers running Away mode must include an Advanced Configuration and Power Interface (ACPI) BIOS object (device). To confirm that the computer has this device, Setup queries the Windows device manager for the Away Mode Device (AWY0001).

Note: Windows Hardware Quality Lab (WHQL) does not currently have a systems logo program for Microsoft Windows XP Media Center Edition 2005 and only supports testing Hardware Compatibility Tests (HCTs) for Microsoft Windows XP Professional. The preferred process is to create a BIOS with the AWY0001 object disabled so the device does not appear during testing using Windows XP Professional. You can then update the BIOS to enable Away mode on computers that include both Microsoft Windows XP Media Center Edition 2005 and Away mode.

Hardware

Away mode has not been designed for mobile computers. If Setup detects a Microsoft ACPI-compliant control method battery, the installation is canceled and the following error message is displayed: "The environment is incorrect."

File List and Location

The Away mode files are copied to the locations on the hard disk that are listed in Table 1.

Table 1: Feature Option Settings

Location	File List
Windows INF directory (all INF files)	<ul style="list-style-type: none"> ▪ Arpolicy.inf ▪ Arhidfiltr.inf ▪ Aracpi.inf ▪ Armoufiltr.inf ▪ Arkbfiltr.inf
Windows directory (service, Control Panel, and other DLL files)	<ul style="list-style-type: none"> ▪ Arservice.exe ▪ Arpower.dll ▪ Armcex.dll ▪ Arpwrmsg.exe
Windows\system32\drivers (driver files)	<ul style="list-style-type: none"> ▪ Arpolicy.sys ▪ Arhidfiltr.sys ▪ Aracpi.sys ▪ Armoufiltr.sys ▪ Arkbfiltr.sys

After the files are copied, the INF files install the drivers (Aracpi.sys, Arhidfiltr.sys, Arpolicy.sys, Armoufiltr.sys, and Arkbfiltr.sys). After the drivers are installed, Setup starts the Away Mode Service (Arservice.exe) with the following command:

```
net start ARSVC
```

Restart

To confirm that all of the enabled Away mode components function properly, Setup prompts for a restart. There is also an option to do the restart later after all additional features or applications are installed.

Away mode is activated by default when the computer is restarted.

Unattended Installation

Install Away mode in an unattended mode by using the following command syntax:

```
AwayMode-KB902437-xxx.exe /quiet    or    AwayMode-  
KB902437-xxx.exe /passive
```

/quiet—Setup runs without prompting the user; no UI is displayed.

/passive—Setup runs without prompting the user; progress bar is displayed.

Uninstallation

The OEM can uninstall Away mode automatically. Note that unattended uninstallation cannot be performed if Away mode was installed using the **/NoBackup** option.

OEM Unattended Uninstallation

To automate the uninstallation of Away mode, run the following command in a command window:

```
C:\Windows\%NtUninstallAWAYMODE160%\spuninst\spuninst.exe
```

The uninstall executable (spuninst.exe) is installed in a special directory (<windir>%NtUninstallAWAYMODE160%\spuninst) during Setup.

Uninstall Away mode in unattended mode by running the following command in a command window:

```
C:\Windows\%NtUninstallAWAYMODE160%\spuninst\spuninst.exe  
/quiet
```

To confirm that the drivers have been removed successfully, restart the computer.

Note: Users can remove Away mode from their computer by using **Add or Remove Programs**.

Configuration and Settings

The OEM can customize Away mode using the following values. Note that the user can perform some basic customization as well.

OEM Customization

When Away mode is installed on the computer that is running Update Rollup 2 for Microsoft Windows XP Media Center Edition 2005, the following key is created in the registry:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\ARSVC\Parameters

You can change the default settings by adjusting the values listed in Table 2.

Table 2: Feature Option Settings

Feature Options	Create Dword Value	Comments
Disable the Away mode feature	"Disable" = dword: 00000000	<ul style="list-style-type: none"> ▪ Default = 0; enables Away mode by default ▪ Configurable by OEMs and users
Put the CPU into an adaptive power policy (to conserve power) when the computer is Away	"NoThrottle" = dword: 00000000	<ul style="list-style-type: none"> ▪ Default = 0; enables CPU throttling by default ▪ Configurable by OEMs only
Keep the computer in Away mode when media is inserted	"NoWakeOnInsert" = dword: 00000000	<ul style="list-style-type: none"> ▪ Default = 0; enables device insertion wake by default ▪ Configurable by OEMs only
Return the computer from Away mode on keyboard or mouse activity	"WakeOnMouseKB" = dword: 00000000	<ul style="list-style-type: none"> ▪ Default = 0; disables keyboard/mouse wake by default ▪ Configurable by OEMs and users
Require the user to enter a password when the computer returns from Away mode	"PromptForPassword" = dword: 00000000	<ul style="list-style-type: none"> ▪ Default = 0; disables password prompt by default ▪ Configurable by OEMs and users

User Customization

The user can change some of the default settings on the **Away** tab in the Power Options Properties for Away mode, as shown in Figure 1.

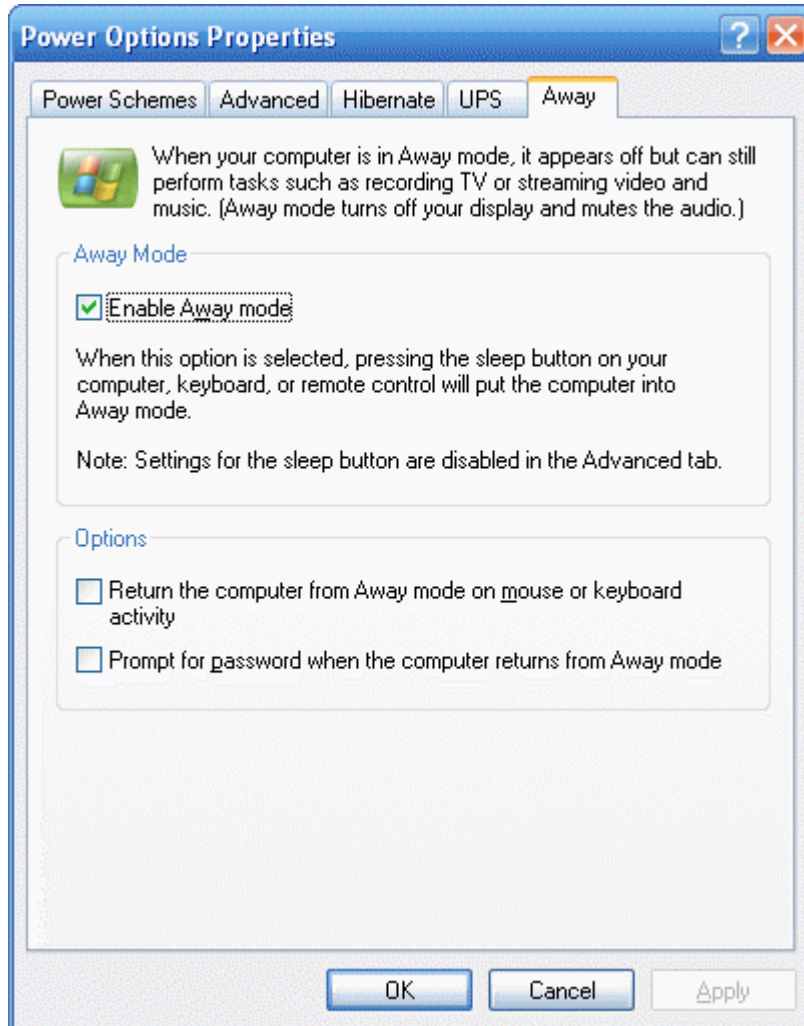


Figure 1: Power options properties for Away mode

Requirements for Away Mode Functionality

When implementing Away mode on a computer, the following requirements or recommendations apply. Away mode is not designed for mobile systems and therefore all requirements or recommendations are not applicable to mobile systems.

Recommendations – Implementing Away Mode Functionality

CPU and Chipset Support Processor Performance Control

The CPU and associated chipset should be capable of supporting processor performance control, enabling the CPU to enter a low-power, but fully-functional mode when the system is in Away mode.

Away Mode is Enabled as Default Off State for the HID Sleep Button

Away mode should be enabled as the default off state for the HID sleep button and configured through the power options in the Control Panel.

BIOS Controls the Fan Speed

The system BIOS should be responsible for controlling the fan speed of the power supply, processor, and system when the system transitions to and from Away mode.

Requirements – Implementing Away Mode Functionality

Power Button is Connected to the System through USB 1.1

Computers supporting Away mode must include a power button that is connected to the system through USB 1.1 or later as a human interface device (HID) sleep button. You can satisfy this requirement through the remote control or sleep button on the keyboard.

Power Supply is Self-Cooling

The power supply must be capable of properly cooling itself when the system is in a silent (Away mode) state.

Note: In the event that a thermal condition occurs in the power supply, the thermal firmware in the power supply must first turn on the fans to the lowest setting to bring thermals down to an acceptable level. As thermals increase, fan speeds may increase as necessary to control thermals.

BIOS Defines Away Mode Device and ACPI Control Method

The OEM-provided BIOS must define the Away mode device and ACPI control method in the ACPI namespace as follows:

```
// Define Away Mode device
Device(\AWY) {
    Name(_HID, "AWY0001") // Away Mode device
```

The OEM-provided BIOS must implement the Away mode Set Mode (SMOD) control method. The SMOD control method notifies the BIOS that the computer is

entering or leaving Away mode, enabling the BIOS to control aspects of the computer such as fan speed or the LED. Define the method as follows:

```
Method(SMOD,1) {  
Mode = 1: ON  
Mode = 0: Away
```

Resources

Microsoft Resources

- MSDN Online
<http://msdn.microsoft.com/>
- Microsoft Windows Driver Development Kit (DDK)
<http://www.microsoft.com/ddk/>
- Microsoft Windows Logo Program System and Device Requirements
<http://www.microsoft.com/whdc/winlogo/downloads.msp>
- Microsoft Windows XP Hardware Compatibility Test Kit, V. 12.1
<http://www.microsoft.com/whdc/whql/>
- Microsoft Windows XP Media Center Edition SDK
<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/MedctrSDK/htm/handlingalwaysreadynotifications.asp>
- USB Device Class Definition for Human Interface Devices (HID)
<http://www.usb.org/developers/docs>

Additional Industry Resources

- Advanced Configuration and Power Interface Specification, version 2.0
<http://www.acpi.info/>
- Universal Serial Bus Specification, version 1.1
<http://www.usb.org/developers/>