**Volume Activation Operations Guide**

**Windows 7 and Windows Server 2008 R2**

Microsoft Corporation

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Abstract

Microsoft® Volume Activation helps Volume Licensing customers automate and manage the activation process. This document provides operational guidance for Volume Licensing customers who have deployed Volume Activation in their organization’s environment.

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# Introduction

This guide contains information to help customers manage the activation of the Windows® 7 and Windows Server® 2008 R2 operating system volume editions in their environment. Topics include management tools, troubleshooting, recovering from unlicensed states, resolving non-genuine software issues, and managing each method of Microsoft® Volume Activation.

### Key Management Service

With KMS, IT pros can complete activations on their local network, eliminating the need for individual computers to connect to Microsoft for product activation. KMS is a lightweight service that does not require a dedicated system and can easily be co-hosted on a system that provides other services. By default, volume editions of Windows 7 and Windows Server 2008 R2 connect to a system that hosts the KMS service to request activation. No action is required of the user.

KMS requires a minimum number of computers (physical or VM) in a network environment. The organization must have at least 5 computers to activate Windows Server 2008 R2 and at least 25 computers to activate Windows 7 clients. These minimums, called activation thresholds, are set so that they are easily met by enterprise customers.

To use KMS activation with Windows 7 Volume Licensing editions, new computers must be preinstalled by an OEM with a qualifying operating system and contain a Windows marker in the BIOS.

### Multiple Activation Key

MAK is used for one-time activation with Microsoft’s hosted activation services. There are two ways to activate computers using MAK. The first method is MAK Independent activation, which requires that each computer independently connect and be activated with Microsoft either over the Internet or by telephone. The second method is MAK Proxy activation. With this method, a computer acting as a MAK proxy gathers activation information from multiple computers on the network, and then sends a centralized activation request on their behalf. MAK Proxy activation is configured using the Volume Activation Management Tool (VAMT).

**Note**   KMS is the default key for Volume Activation clients. Using MAK activation requires installing a MAK key. For more information about converting KMS clients to MAK, see the [*Volume Activation Deployment Guide*.](http://go.microsoft.com/fwlink/?LinkId=150083)

# Management Tools for Volume Activation

Three tools are available to monitor and manage the activation status of Volume License editions of the Windows 7 and Windows Server 2008 R2 operating systems:

* Volume Activation Management Tool (VAMT)
* System Center Operations Manager 2007
* Microsoft System Center Configuration Manager 2007 R2
* Group Policy

## Volume Activation Management Tool

VAMT enables customers to manage Multiple Activation Key (MAK)–activated systems in the environment. VAMT collects data on MAK-licensed clients, including information about the product keys and current license states, then stores this information in a computer information list (CIL) file. These clients can be instructed by VAMT to activate directly with Microsoft (called MAK Independent Activation), or the data can be collected and submitted for activation in a batch. The batch method is called Proxy Activation, and can be performed by the VAMT host collecting the data, or the data can be exported to removable media and the batch can be submitted to Microsoft by a different VAMT host. VAMT also queries the online Microsoft Activation servers to determine the number of activations remaining on an organization’s selected MAKs. The CIL is an Extensible Markup Language (XML) file and is readable by any text editor, such as Microsoft Notepad.

VAMT 1.2 supports Windows 7 and Windows Server 2008 R2. The Windows Automated Installation Kit (Windows AIK) includes VAMT. For more information about VAMT, see the VAMT 1.2 Help.chm, which is included with the VAMT installation files. To download the Windows AIK, including VAMT, see the Microsoft Download Center at <http://go.microsoft.com/fwlink/?LinkId=136976>.

## System Center Operations Manager

IT can monitor KMS Host operational health using the Key Management Service Management Pack for Microsoft System Center Operations Manager 2007. The KMS Management Pack monitors the health of KMS hosts by checking for error conditions and availability. It alerts administrators about potential problems such as KMS initialization failures, DNS SRV publishing issues, when KMS counts drop below activation thresholds, and when no KMS activity occurs for more than eight hours.

To download the KMS Management Pack, see the System Center Pack Catalog at <http://go.microsoft.com/fwlink/?LinkID=110332>. This download includes a Management Pack guide that covers installation, configuration, included rules, data grooming, and indexing processes. It also includes several sample reports.

## System Center Configuration Manager 2007 R2

System Center Configuration Manager (SCCM) 2007 provides Asset Intelligence reports derived from KMS activities. Table 1 describes the reports available through SCCM. More information about these reports is available at: <http://technet.microsoft.com/en-us/library/bb680578.aspx>.

Table 1. Reports Available Through SCCM 2007

| Report Name | Description |
| --- | --- |
| **License 02A - Count of Licenses Nearing Expiration by Time Ranges** | This report lists computers running Windows Vista® grouped by specific time ranges in which they will refresh their license activation from the KMS.  Drill through to **License 02B - Computers with Licenses Nearing Expiration** report. |
| **License 02B - Computers with Licenses Nearing Expiration** | This report identifies computers with licenses that will need to be refreshed by the KMS within a specified time range.  Available from **License 02A - Count of Licenses Nearing Expiration by Time Ranges** report.  Drill through to **License 02C - License Information on a Specific Computer** report. |
| **License 02C - License Information on a Specific Computer** | This report provides Windows Vista volume licensing information for a specified computer.  Available from the following reports:   * **License 02B - Computers with Licenses Nearing Expiration** * **License 03B - Computers with a Specific License Status** * **License 04B - Computers with a Specific Product Managed by Software Licensing Service**   Drill through to **Computer Details**. |
| **License 03A - Count of Licenses by License Status** | This report lists the number of computers that are currently in specific license states. These states are:   * Unlicensed * Licensed * Out Of Box Grace * Out of Box Tolerance/Expired Grace Period * Non-genuine grace   Drill through to **License 03B - Computers with a Specific License Status** report. |
| **License 03B - Computers with a Specific License Status** | This report lists computers that are in a specified license state.  Available from **License 03A - Count of Licenses by License Status** report.  Drill through to **License 02C - License Information on a Specific Computer** report. |
| **License 04A - Count of Products Managed by Software Licensing Service** | This report lists all the products that Software Licensing Service manages and counts how many computers have each product installed.  Drill through to **License 04B - Computers with a Specific Product Managed by Software Licensing Service** report. |
| **License 04B - Computers with a Specific Product Managed by Software Licensing Service** | This report lists all computers that have a specified product.  Available from **License 04A - Count of Products Managed by Software Licensing Service** report.  Drill through to **License 02C - License Information on a Specific Computer** report. |
| **License 05A - Computers Providing Key Management Service** | This report lists Windows Vista computers that act as Key Management Servers.  Drill through to **Computer Details**. |

## Group Policy Support

The [*Volume Activation Technical Reference Guide*](http://go.microsoft.com/fwlink/?LinkId=152550) describes Group Policy settings that allow organizations to control the appearance of the black desktop during the Notifications state. Additionally, all configuration and property data for Volume Activation is accessible though WMI and the Windows registry. Therefore, information technology (IT) organizations can also manage the process by using Group Policy preferences.

# Volume Activation Troubleshooting

Except for KMS events that have event ID 12290, Windows logs all activation events to the Application event log with the event provider name Microsoft-Windows-Security-SPP. Windows logs KMS events to the Key Management Service log in the Applications and Services folder. IT pros can use Slui.exe to display a description of most activation-related error codes. The general syntax for this command is:

Slui.exe 0x2a *ErrorCode*

For example, if event ID 12293 contains error code 0x8007267C, a description of that error can be displayed by running the following command:

Slui.exe 0x2a 0x8007267C

## KMS Activation Troubleshooting Steps

Table 2 describes common issues that can occur during KMS activations as well as steps for resolving them.

Table 2. Troubleshooting Steps for Common KMS Activation Issues

| Issue | Resolution |
| --- | --- |
| Is the KMS client computer activated? | Look for “Windows is activated” in the Control Panel System item. Alternatively, run Slmgr.vbs with the **/dli** command-line option*.* |
| The KMS client computer will not activate. | Verify that the KMS activation threshold is met. Run Slmgr.vbs with the **/dli** command-line option on the KMS host to determine the host’s current count. Until the KMS host has a count of 25, Windows 7 client computers cannot be activated. Windows Server 2008 R2 KMS clients require a KMS count of 5 for activation. For more information about KMS requirements, see the [Volume Activation Planning Guide](http://go.microsoft.com/fwlink/?LinkId=155926).  On the KMS client, look in the Application event log for event ID 12289. Check this event for the following:  Is the result code 0? Anything else is an error.  Is the KMS host name in the event correct?  Is the KMS port correct?  Is the KMS host accessible?  If the client is running a non-Microsoft firewall, does the outbound port need to be configured?  On the KMS host, look in the KMS event log for event ID 12290. Check this event for the following:  Did the KMS host log a request from the client computer? Verify that the name of the KMS client is listed. Verify that the client and KMS host can communicate. Did the client receive the response?  If no event is logged from the KMS client, the request did not reach the KMS host or the KMS host was unable to process it. Ensure that routers do not block traffic using TCP port 1688 (if the default port is used) and that stateful traffic to the KMS client is allowed. |
| Error 0xC004F035 | This error code equates to “The software Licensing Service reported that the computer could not be activated with a Volume license product key…” This error text can be incorrect.  If the proper Windows edition is installed with a GVLK, this error my also indicate that the computer is missing a Windows marker in the BIOS, which is required for KMS client activation. The proper error text should read:  **Error:** Invalid Volume License Key  In order to activate, you need to change your product key to a valid Multiple Activation Key (MAK) or Retail key.  You must have a qualifying operating system license AND a Volume license Windows 7 upgrade license, or a full license for Windows 7 from a retail source.  ANY OTHER INSTALLATION OF THIS SOFTWARE IS IN VIOLATION OF YOUR AGREEMENT AND APPLICABLE COPYRIGHT LAW. |
| What does this error code mean? | If Slmgr.vbs returns a hexadecimal error code or event ID 12288 contains a result code other than 0, determine the corresponding error message by running the following command:  Slui.exe 0x2a ErrorCode |
| Clients are not adding to the KMS count. | Run **sysprep /generalize** or **slmgr /rearm**to reset the client computer ID (CMID) and other product-activation information. Otherwise, each client computer looks identical, and the KMS host does not count them as separate KMS clients. |
| KMS hosts are unable to create SRV records. | Domain Name System (DNS) may restrict Write access or may not support dynamic DNS (DDNS). In this case, give the KMS host Write access to the DNS database, or create the service (SRV) resource record (RR) manually. For more information about this issue, see the [Volume Activation Deployment Guide](http://go.microsoft.com/fwlink/?LinkId=150083). |
| Only the first KMS host is able to create SRV records. | If the organization has more than one KMS host, the other hosts might not able to update the SRV RR unless the SRV default permissions are changed. For more information about this issue, see the [Volume Activation Deployment Guide](http://go.microsoft.com/fwlink/?LinkId=150083). |
| I installed a KMS key on the KMS client. | KMS keys should only be installed on KMS hosts, not on KMS clients. Run **slmgr.vbs -ipk <SetupKey>**. The [Volume Activation Technical Reference Guide](http://go.microsoft.com/fwlink/?LinkId=152550)contains a table of setup keys that can be used to restore the computer to a KMS client. These keys are publicly known and are edition-specific. Remember to delete any unnecessary SRV RRs from DNS and restart the computers. |

## MAK Activation Troubleshooting Steps

Table 3 presents common issues that can occur during MAK activations and steps for resolving them.

Table 3. Troubleshooting Steps for Common MAK Activation Issues

| Issue | Resolution |
| --- | --- |
| How can I tell if my computer is activated? | Look for “Windows is activated” in the Control Panel System item. Alternatively, run Slmgr.vbs with the **/dli** command-line option*.* |
| The computer will not activate over the Internet. | Ensure the required ports are open in the firewall. For a list of ports, see the [*Volume Activation Deployment Guide*](http://go.microsoft.com/fwlink/?LinkId=150083). |
| Internet and telephone activation fail. | Contact a local Microsoft Activation Center. For phone numbers of Microsoft Activation Centers worldwide, go to <http://go.microsoft.com/fwlink/?LinkID=107418>. Be sure to provide the Volume License agreement information and proof of purchase when calling. |
| Slmgr.vbs /ato returns an error code. | If Slmgr.vbs returns a hexadecimal error code, determine the corresponding error message by running the following script:  Slui.exe 0x2a 0x ErrorCode |

## KMS Host Failover

If a KMS host fails, a KMS host key must be installed on a new host and activated. Ensure that the new KMS host has an SRV RR in the DNS database. If installing the new KMS host with the same computer name and IP address as the failed KMS host, the new KMS host can use the DNS SRV record of the failed host. If the new host has a different computer name, organizations can manually remove the DNS SRV RR of the failed host or allow DNS to remove it automatically if scavenging is enabled in DNS. If the network is using DDNS, the new KMS host automatically creates a new SRV RR on the DNS server. The new KMS host then starts collecting client renewal requests and begins activating clients as soon as the KMS activation threshold is met.

If configuring KMS clients to use auto-discovery, they automatically choose another KMS host if the original KMS host does not respond to renewal requests. If not using auto-discovery, update the KMS client computers that were assigned to the failed KMS host by running **Slmgr.vbs /skms**. To avoid this scenario, configure KMS clients to use auto-discovery. For more information, see the [Volume Activation Deployment Guide](http://go.microsoft.com/fwlink/?LinkId=150083).

## Disabling Windows Anytime Upgrade for Windows 7

The Windows Anytime Upgrade (WAU) program allows Windows 7 Professional users to purchase an upgrade directly from Microsoft by clicking the **Windows Anytime Upgrade** link in the Extras and Upgrades subfolder of the All Programs menu. This link and the program are only in Windows 7 Professional editions available through Volume Licensing and retail channels.

Administrators can disable WAU for users by adding the **DWORD** value **Disabled** to the **HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\Explorer\WAU** registry subkey. Set this value to **1**. If needed, create the **Explorer** and **WAU** keys.

Note   This guide describes procedures that run scripts and make changes to the registry. These rights can be delegated to selected IT implementers. The rights to change product keys and perform activations can even be assigned to users, although Microsoft does not recommend doing so.

**Warning**   Serious problems might occur if you modify the registry incorrectly by using Registry Editor or by using another method. These problems might require that you reinstall the operating system. Microsoft cannot guarantee that these problems can be solved. Modify the registry at your own risk.

## Backup Requirements

Backup is not required for KMS hosts. However, if the event log is used to track or document KMS activations, periodically export the Key Management Service event log from the Applications and Services Logs folder. If using a tool to perform routine cleanup of event logs, the activation history stored in the logs can be lost. If using System Center Operations Manager, the event log data is collected and stored in the System Center Data Warehouse database for reporting, so no backups of the event log are necessary.

# Managing License States

The display license information (**/dli**) command-line option of Slmgr.vbs displays the current license state of computers running Windows 7 or Windows Server 2008 R2. The output of this parameter also includes general information about the current license, time remaining before expiration, and time remaining in the grace period, if applicable.

The following code is an example of the information displayed when **Slmgr.vbs /dli** runs on a KMS client:

Name: Windows(R) 7, Enterprise edition

Description: Windows Operating System - Windows(R) 7, VOLUME\_KMSCLIENT channel

Partial Product Key: DVQ7P

License Status: Licensed

Volume activation expiration: 243720 minute(s) (169 day(s))

Key Management Service client information

Client Machine ID (CMID): 2ffcfc30-6a6a-49ec-92b8-f6150c7df211

KMS machine name from DNS: emeronb10-rc3.sppvltest.net:1688

KMS machine extended PID: 55041-00140-015-871562-03-1033-7078.0000-0992009

Activation interval: 15 minutes

Renewal interval: 25 minutes

KMS host caching is enabled

The following code is an example of the information displayed when **Slmgr.vbs /dli** runs on a KMS host:

Name: Windows Server(R), ServerEnterprise edition

Description: Windows Operating System - Windows Server(R), VOLUME\_KMS\_C channel

Partial Product Key: PYWKV

License Status: Licensed

Key Management Service is enabled on this machine

Current count: 2

Listening on Port: 1688

DNS publishing enabled

KMS priority: Normal

Key Management Service cumulative requests received from clients

Total requests received: 826

Failed requests received: 0

Requests with License Status Unlicensed: 0

Requests with License Status Licensed: 826

Requests with License Status Initial grace period: 0

Requests with License Status License expired or Hardware out of tolerance: 0

Requests with License Status Non-genuine grace period: 0

Requests with License Status Notification: 0

More detailed licensing information is available using the **/dlv** parameter. The following code is an example of the information displayed when **Slmgr.vbs /dlv** runs on a KMS host:

Name: Windows Server(R), ServerEnterprise edition

Description: Windows Operating System - Windows Server(R), VOLUME\_KMS\_C channel

Activation ID: fed62577-3bef-4309-90e8-671abdc076d8

Application ID: 55c92734-d682-4d71-983e-d6ec3f16059f

Extended PID: 55041-00140-015-871562-03-1033-7078.0000-0992009

Installation ID: 007770007653131654256624425615586710406244931761974006

Processor Certificate URL: http://go.microsoft.com/fwlink/?LinkID=88342

Machine Certificate URL: http://go.microsoft.com/fwlink/?LinkID=88343

Use License URL: http://go.microsoft.com/fwlink/?LinkID=88345

Product Key Certificate URL: http://go.microsoft.com/fwlink/?LinkID=88344

Partial Product Key: PYWKV

License Status: Licensed

Evaluation End Date: 6/1/2010 4:59:59 PM

Remaining Windows rearm count: 3

Trusted time: 4/28/2009 2:32:10 PM

Key Management Service is enabled on this machine

Current count: 2

Listening on Port: 1688

DNS publishing enabled

KMS priority: Normal

Key Management Service cumulative requests received from clients

Total requests received: 826

Failed requests received: 0

Requests with License Status Unlicensed: 0

Requests with License Status Licensed: 826

Requests with License Status Initial grace period: 0

Requests with License Status License expired or Hardware out of tolerance: 0

Requests with License Status Non-genuine grace period: 0

Requests with License Status Notification: 0

Note   Both the **/dli** and **/dlv** commands work when run on retail and original equipment manufacturer (OEM)–activated computers. For more information about available activation methods and possible license states, see the [Volume Activation Deployment Guide](http://go.microsoft.com/fwlink/?LinkId=150083).

## Recovering from a Non-Genuine State

If a KMS (CSVLK) or MAK key is lost or misused, the product key can be marked non-genuine and invalid for activation. In this case, the product key checked during online validation is considered invalid, and the system fails validation. In addition, the computer will be placed in a 30-day non-genuine state grace period, which allows for the time needed to obtain a new product key. The desktop wallpaper is changed to a solid black background, and periodic notification balloons appear in the system tray to remind the user to validate the license status of the system.

When evidence of system tampering is detected, the system goes into a non-genuine or tampered state depending on the type of tampering. If the computer has altered system files, the best way to recover is to reinstall the operating system, and then reactivate the computer. If a KMS host or KMS client is marked non-genuine because of a compromised product key, replace the KMS key on all KMS hosts configured with that key. Then, force an immediate reactivation of the KMS clients by running **Slmgr.vbs /ato**, or allow the clients to reactivate themselves according to the activation renewal schedule. If the original key is compromised on a MAK-activated computer, install a new MAK and reactivate.

Before a computer can recover from a validation failure, IT must first determine why the computer failed validation; then, appropriate recovery steps can be taken. Begin by examining the Application event log for event ID 8209. The reason for the validation failure is listed in this event.

After a computer is reactivated, connect to the Genuine Microsoft Software Web site at <http://go.microsoft.com/fwlink/?LinkId=64187> for a validation to change the non-genuine state to genuine.

## Activation of Windows OEM Computers

Windows 7 and Windows Server 2008 R2 have different usage rights based on the channel used to purchase them. Generally, the product usage rights for OEM-licensed products prohibit conversion of an OEM installation of an operating system to a Volume License installation. However, there are exceptions. If one of the exceptions applies, an OEM version of Window 7 or Windows Server 2008 R2 can be changed to a Volume License version.

One exception that allows changing an OEM installation to a Volume License installation is if Software Assurance is purchased within 90 days of purchasing the OEM product. This exception applies only to Windows 7 or Windows Server 2008 R2. Another exception is if the OEM product is the same product for which a Volume License agreement already exists. Volume License customers have reimaging rights and may be eligible to upgrade an OEM installation using Volume License media. For more information about imaging rights, see the Microsoft Volume Licensing brief, “Reimaging Licensed Microsoft Software by Using Volume Licensing Media,” at <http://download.microsoft.com/download/1/7/7/17745e4a-5d31-4de4-a416-07c646336d94/reimaging.doc> and “Customizing Windows Vista Business Edition” at <http://go.microsoft.com/fwlink/?LinkID=137292&clcid=0x409>.

Computers obtained through OEM channels that have an ACPI\_SLIC table in the system basic input/output system (BIOS) are required to have a valid Windows marker in the same ACPI\_SLIC table. The appearance of the Windows marker is important for Volume Licensing customers who are planning to use Windows 7 Volume License media to re-image or upgrade an OEM system through the re-imaging rights they have in their Volume Licensing agreement. Computers that have an ACPI\_SLIC table without a valid Windows marker generate an error when a volume edition of Windows 7 is installed. For more information, see “You receive an error message when you try to activate Windows Vista on a computer that was obtained from an OEM” at <http://support.microsoft.com/default.aspx?scid=kb;EN-US;942962>.

These systems cannot be activated with KMS, but they can be activated using a MAK or a retail key.

# User Experience

Product activation in Windows 7 and Windows Server 2008 R2 include user experience (UX) refinements that the following sections describe:

* Product activation notifications
* KMS activation warning and error dialog boxes
* Customizable activation help
* No User Account Control (UAC) prompt for activation

## Product Activation Notifications

The Windows Vista® with Service Pack 1 (SP1) and Windows Server 2008 operating systems introduced the notifications UX to alert users about product-activation problems without limiting Windows functionality. If Windows has not been properly activated and is not within its activation grace period, the computer is in the notifications state with the following UX:

* Upon logon, Windows displays a dialog box reminding the user that Windows must be activated. It includes options for activating now or later. If the user does not interact with this dialog box within two minutes, the dialog box closes, and the logon process continues normally.
* In the notifications state, Windows changes the desktop wallpaper to a solid black background, displays taskbar balloon notifications indicating the activation status, and displays dialog boxes showing what action the user needs to take.
* In the notifications state, the computer has the full functionality of the installed version of Windows, except that the following features are disabled:
* A computer configured as a KMS host will respond to KMS client requests with an error stating that KMS has not been activated.
* Windows Update only allows security and critical updates—not optional updates.
* Optional downloads requiring online Windows Genuine Advantage (WGA) validation—also called genuine-gated downloads—are not available.

Windows 7 and Windows Server 2008 R2 introduce three significant changes to the notifications UX:

* A new **Activate Later** dialog box
* Notifications tailored to specific activation issues
* A new hack mitigation interrupt dialog box

### Activate Later

As with Windows Vista with SP1 and Windows Server 2008, if Windows 7 or Windows Server 2008 R2 enters the notifications state, it displays the **Windows Activation** dialog box. The user can click **Activate now** or **Activate later**. If the user clicks **Activate Now**, Windows 7 and Windows Server 2008 R2 start a wizard that leads the user through the activation process. If the user clicks **Activate later**, Windows 7 and Windows Server 2008 R2 display the dialog box shown in Figure 1.

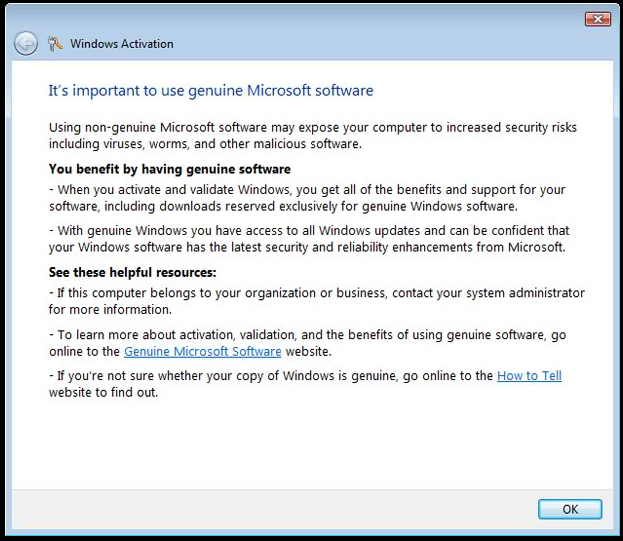


Figure 1   Window Activation dialog box

This new dialog box informs the user about how product activation helps ensure the benefits of using genuine Microsoft software. Clicking either of the links in the dialog box opens the corresponding Web page.

Closing this dialog by clicking the **Close** button in the title bar returns the user to the previous dialog box. Clicking **OK** logs the user on to Windows. However, like Windows Vista with SP1 and Windows Server 2008, when Windows 7 or Windows Server 2008 R2 are in the notifications state, the desktop still changes the background to a solid, plain black. The user can reset the desktop background to wallpaper or other background color, but every 60 minutes, Windows resets it to black and displays the notification balloon shown in Figure 2 until Windows 7 or Windows Server 2008 R2 is properly activated.

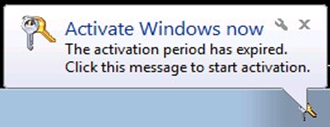


Figure 2   Notification balloon

### Notifications Tailored to Specific Activation Issues

Because a number of situations can cause Windows to enter the notifications state, Windows 7 and Windows Server 2008 R2 improve the Windows Vista with SP1 and Windows Server 2008 notifications UX by displaying licensing notifications (warning balloons and dialog boxes) tailored to specific activation issues. This gives the user a better understanding of what caused the issue and how to proceed. The [Volume Activation Technical Reference Guide](http://go.microsoft.com/fwlink/?LinkId=152550) describes the notification balloons and dialog boxes for each licensing issue that causes Windows to enter the notifications state.

### Hack Mitigation Interrupt Dialog Box

If Windows 7 or Windows Server 2008 R2 determines that licensing files have been tampered with, the user sees the dialog box shown in Figure 3 when launching Microsoft Paint, WordPad, Notepad, Calculator, or Control Panel. Clicking **Resolve online now** launches the Windows Activation Wizard. Clicking **Cancel** closes the dialog box, but Windows displays it each time the user tries opening the previously mentioned programs until Windows is activated.

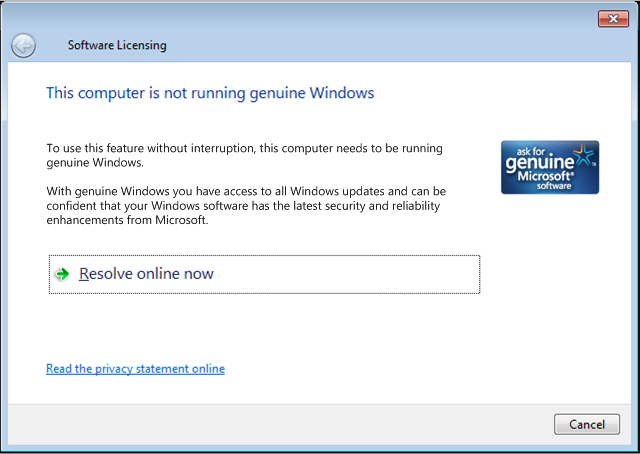


Figure 3   Software Licensing dialog box

## KMS Activation Warning and Error Dialog Boxes

Windows 7 and Windows Server 2008 R2 display two new KMS warning and error dialog boxes:

* If the user tries to install a KMS host key, Windows displays a warning dialog box.
* If a KMS client computer is configured to search for a KMS host using DNS but does not receive any SRV RRs from DNS, Windows displays an error dialog box.

For more information about these dialog boxes, see the [Volume Activation Deployment Guide](http://go.microsoft.com/fwlink/?LinkId=150083).

## Customizable Activation Help

For product activation in managed environments, the **Activate Windows now** dialog box can be configured to display an optional **Learn About Activation Online** link, as shown in Figure 4.

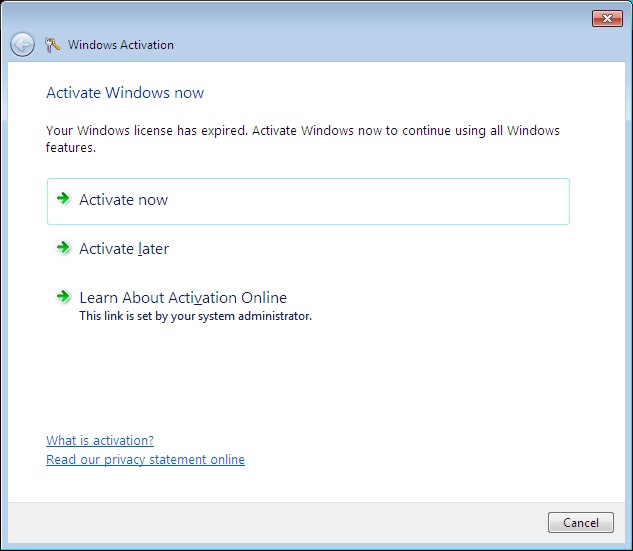


Figure 4   Learn about activation online

Clicking this custom link loads an administrator-defined URL in the user’s default browser. This URL can point to a custom Web page or other file stored on the local computer or as a network resource. A Volume Licensing customer can use this link to direct their users to the customer’s Helpdesk or other activation-related resources. Displaying the link requires setting the **REG\_SZ** value **ActivationAlternateURL** to the URL of the Web page to display when the user clicks it. The **value ActivationAlternateURL** value is in the registry at **HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\SoftwareProtectionPlatform**.

## No User Account Control (UAC) Prompt for Activation

Windows 7 and Windows Server 2008 R2 do not require administrator privileges for activation. Windows eliminates the User Account Control (UAC) prompt during activation, enabling any user who has a standard user account to activate Windows on that computer. However, this change does not allow standard users to remove Windows from the activated state. By default, administrator privileges are still required for other activation- or license-related tasks.