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# Windows Vista

## Volume Activation 2.0 FAQ

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### Description

This guide provides answers to frequently asked questions about Windows Vista™ Volume Activation 2.0.

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# Frequently Asked Questions

## Volume Activation 2.0

### Q. What is Volume Activation 2.0?

A. Volume Activation 2.0 is a new requirement in the Windows Vista™ operating system and Windows Server® Code Name "Longhorn," which requires activation of each Windows Vista license acquired under a Volume License agreement. When designing and building the new volume activation technologies, Microsoft focused on two goals:

- Close significant piracy loopholes (Volume License keys represent the majority of keys involved in Windows piracy)
- Improve the volume customer experience.

Volume Activation 2.0 is designed to help increase protection and to help better manage the Volume License keys in managed and non-managed environments as well as provide flexible deployment options for customers. The process is transparent for end users, and the Volume Activation 2.0 solution works in a variety of customer environments.

### Q. What are the benefits of Volume Activation 2.0 to customers?

A. Volume Activation 2.0 supports centrally managed Volume License keys. It provides the following two types of keys to customers:

- **Multiple Activation Key (MAK):** Although resident on individual computers, this key is encrypted and kept in a trusted store, so that users are not exposed to it and are unable to obtain it once installed on the computer.
- **Key Management Service (KMS) Key:** This key is only installed on the KMS host and never on individual computers.

Customers can use any of these keys depending on the needs of their organization and its network infrastructure.

Volume Activation 2.0 supports a simplified setup, and is generally invisible to the users. By default, volume editions do not require a product key to be entered during setup. There is an automatic 30-day grace period during which the computer must be activated.

System administrators can count KMS activations using standard system management software, for example, Microsoft Operations Manager (MOM). Windows Management Infrastructure (WMI), extensive event logging, and built-in Application Programming Interfaces (APIs) can provide a wealth of detail about installed licenses as well as the license state and current grace or expiration period of MAK- and KMS-activated computers.

Volume Activation 2.0 also may provide enhanced security through frequent background validations for genuine modules. This is currently limited to critical software, but may be expanded greatly over time.

### Q. What are the options for activating volume editions of Windows Vista?

A. Volume Activation 2.0 provides the following two types of keys, and three methods of activation, to customers:

- Multiple Activation Key (MAK)
  - MAK Proxy Activation
  - MAK Independent Activation
- Key Management Service (KMS) Key
  - KMS Activation

Depending on the needs of their organization and its network infrastructure, customers can opt to use any of these activation methods.

#### **Q. What is MAK activation?**

**A.** MAK activation uses a technology similar to that in use with MSDN Universal and Microsoft Action Pack subscriptions. Each product key can activate a specific number of computers. MAK activation is required only once, unless there are significant hardware changes. If the use of volume-licensed media is not controlled, excessive activations result in a depletion of the activation limit.

There are two ways to activate computers using MAK:

- **MAK Proxy Activation:** Enables centralized activation request on behalf of multiple desktops with one connection to Microsoft. MAK Proxy Activation will be available in the solution code name Volume Activation Management Tool (VAMT) which is currently under development with expected availability in 2007.
- **MAK Independent Activation:** Requires each target computer to independently connect and activate against Microsoft.

#### **Q. What is KMS activation?**

**A.** Key Management Service (KMS) enables organizations to perform local activations for computers in a managed environment without the need to connect to Microsoft. A KMS key is used to enable KMS on a computer controlled by the system administrator in an organization. KMS activation is targeted at managed environments where more than 25 computers are connected to the organizational network. Computers running Windows Vista activate by connecting to a central Windows Vista computer running KMS.

In case of KMS activation, client computers must connect to a KMS host at least once every 180 days to renew their activation. Computers that are not activated try to connect with the KMS host every two hours (value configurable). Once activated, these computers attempt to renew their activation (locally) every seven days (value configurable), and if successful, their 180-day activation life span is renewed.

The computers locate the KMS host using one of the following two methods:

- **Auto-discovery:** The computer uses Domain Name System (DNS) service records to automatically locate a local KMS host.
- **Direct connection:** A system administrator specifies the KMS host location and communication port

The client computers have a 30-day grace period to complete the activation. Computers that are not activated within this grace period go into Reduced Functionality Mode (RFM). For more information about RFM, see [Reduced Functionality](#).

**Q. Where can I view the Privacy Statement for Windows Vista Product Activation?**

**A.** Your privacy is important to us. Go to the Microsoft website to read the privacy statement for Windows Vista <http://go.microsoft.com/fwlink/?LinkId=52526>

## Software Versions

**Q. Which versions of Windows Vista are offered as part of the Microsoft Volume Licensing program?**

**A.** Volume license editions of Windows Vista Business and Windows Vista Enterprise are offered as part of Microsoft Volume Licensing program. See <http://www.microsoft.com/licensing/default.aspx> for a list of Volume License products available.

## Obtaining Licenses

**Q. Where can I obtain a MAK and KMS keys?**

**A.** If your organization participates in one of Microsoft's Volume License programs, you can obtain a Volume License key using any of following:

- Microsoft eOpen:  
<https://eopen.microsoft.com/EN/default.asp>
- Microsoft Volume Licensing Services (MVLS):  
<https://licensing.microsoft.com/eLicense/L1033/default.asp>
- Microsoft Activation Call Center:  
US customers may call 1-888-352-7140. International customers may contact their local support center. For phone number to the activation centers worldwide, see the following URL:  
<http://www.microsoft.com/licensing/resources/vol/numbers.aspx>

## MAK Activation

**Q. Does MAK activation require Internet connectivity?**

**A.** MAK activation can be performed either online or by telephone.

**Q. Where can I obtain the telephone number to activate my computer using MAK activation through phone?**

**A.** You can obtain the telephone number by running *slui.exe /4* at the command prompt. You can also obtain the telephone number by clicking **Show me other ways to activate** in the Product Activation wizard. Optionally, you can find the phone number for your location in the %systemroot%\system32\slui\phone.inf file.

**Q. How can I tell if my computer is activated?**

**A.** Look for "Windows is activated." in the Welcome Center or in System under Control Panel. Alternatively, you can run the *slmgr.vbs -dli* script and view the

activation status in **License Status**, which may be Unlicensed, Licensed, Initial Grace Period, Additional Grace Period, or Non-Genuine Grace period.

**Q. If *slmgr.vbs -ato* returns an error code, how do I determine the corresponding error message?**

**A.** If *slmgr.vbs* returns a hexadecimal error code or if event 12288 contains a result code other than 0, you can determine the corresponding error message by running the following command at the command prompt:

```
Slui.exe 0x2a 0x<error code>
```

**Q. If I use disk-cloning software to duplicate Windows Vista installations, will all new computers require activation?**

**A.** Yes, each installation requires activation. It is essential to run *sysprep /generalize* as the final step to reset the product activation timers before creating the clones.

**Q. How do I run sysprep?**

**A.** Before running *sysprep /generalize*, navigate to **HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion\SL** and verify that value of *skiprearm* is set to '0'. Upon verification, run *system32\sysprep\sysprep.exe /generalize /oobe /shutdown*.

**Important note:** This section contains information about how to modify the registry. Make sure to back up the registry before you modify it. Make sure that you know how to restore the registry if a problem occurs. For more information about how to back up, restore, and modify the registry, click the following article number to view the article in the Microsoft Knowledge Base: [256986](#) Description of the Microsoft Windows registry.

**Q. Can a standard user switch to MAK from KMS?**

**A.** By default, a standard user cannot switch to MAK from KMS unless an administrator has enabled standard user activation. For more information on enabling Standard User Activation, see the Standard User MAK Activation section of the *Windows Vista Volume Activation 2.0 Step-by-Step Guide*.

**Q. How do I view the number of activations available and the number of activations remaining for each MAK?**

**A.** System administrators can view the number of activations available and remaining activations for each MAK in the appropriate online portal (MVLS, eOpen, or MSDN).

**Q. How can I increase the MAK activation limit?**

**A.** Call the Microsoft Activation Call Center to increase the MAK activation limit. For phone numbers to worldwide activation centers, see the following URL: <http://www.microsoft.com/licensing/resources/vol/numbers.msp>

**Q. Do MAK activations expire?**

**A.** MAK activations do not have any expiration; however, reactivation might be required if there are significant changes to the hardware.

**Q. Does a MAK-activated computer require reactivation when its operating system is reinstalled? If so, does it count against the total number of activations?**

**A.** Whenever an operating system is reinstalled, the computer will have to be reactivated and thus, if you are using MAK, it will count against the total number of activations.

**Q. If I suspect that my MAK is leaked, can it be blocked from further activations?**

**A.** Yes, you can work with Microsoft to block a MAK.

## KMS Activation

**Q. What are the prerequisites for KMS activation?**

**A.** KMS runs on Windows Vista Client or Windows Server "Longhorn". The default installation requires addition of SRV records to the DNS server in the organization. A KMS host must be accessible on port 1688 (default) to allow client computers to connect to the KMS service for activation and reactivation. For more information about KMS activation, see the "KMS Activation" section in the *Windows Vista Volume Activation 2.0 Step-by-Step Guide*.

**Q. Is there an option to install KMS on a computer running Windows Server™ 2003?**

**A.** Yes, Windows Server 2003 KMS service for Volume Activation 2.0 is currently under development with expected availability in 2007.

**Q. Does KMS require SQL Server™, Active Directory® directory service, or any other add-on Microsoft product?**

**A.** No, KMS only requires Windows Vista client or Windows Server "Longhorn".

**Q. Does the KMS host require Internet connectivity to activate?**

**A.** A KMS host may be activated either through the Internet or using a telephone

**Q. Are there any conflicts between KMS and other Microsoft products?**

**A.** No. Microsoft has tested co-hosting KMS with other services.

**Q. Can I use one KMS key on multiple KMS hosts?**

**A.** You can use a KMS key on only two computers, up to 10 times. If you plan to use more than two KMS hosts, you can request additional activations through Microsoft Activation Call Center.

**Q. If I install more than one KMS, will KMS information replicate between KMS hosts?**

**A.** KMS hosts are individual entities and therefore, there is no cross-communication or sharing of information between them.

**Q. How can I verify that the KMS host is set up correctly?**

**A.** You can verify if the KMS is set up correctly by observing the KMS count and by reviewing the KMS event log entries. Run *slmgr.vbs -dli* on the KMS host to obtain the current KMS count. The KMS Event Log will show the name of the computer and the time-stamp for each request.

**Q. Do KMS hosts communicate activation information to Microsoft?**

**A.** No. Beyond the initial activation of the KMS host, a KMS host does not communicate any activation information to Microsoft.

**Q. Do I need to activate the KMS host first before KMS clients can activate themselves?**

**A.** Yes, you must first activate the KMS host with Microsoft before activating KMS clients. The activation may be completed through the Internet or telephone. If there are significant changes to the hardware, reactivation of the KMS host might be required.

**Q. How do client computers locate a KMS service for activation?**

**A.** Client computers locate a KMS service using one of the following ways:

- **Auto-discovery:** Client computer uses the Domain Name System (DNS) service SRV resource records (default) to automatically locate a local KMS host.
- **Direct registration:** A system administrator specifies the KMS host and communication port in the registry.

**Q. Do I require administrator privileges to configure a client computer to connect to a specific KMS host?**

**A.** Yes. Direct registration configuration specification is critical to the system stability and continued functionality, and therefore, you require administrator privileges to configure a client computer to connect to a specific KMS host.

**Q. Do KMS client computers require Internet connectivity to activate?**

**A.** No, KMS client computers only need to find a KMS host and communicate with it to activate themselves.

**Q. How do client computers connect to a KMS service?**

**A.** Client computers connect to a KMS service using a short-lived RPC-over-TCP/IP session to a well-known port; the default port is 1688, but it is configurable. You

may need to configure firewall rules to allow connectivity between the KMS host and the client computers.

**Q. If a client computer mostly connects through virtual private network (VPN), is there something to force the computer to refresh its activation?**

**A.** Yes, if a computer is past the activation or renewal period (which is configurable, but the default values are two hours and seven days respectively), it will attempt to connect to a KMS host five minutes after establishing a VPN connection.

**Q. What is the expected amount of network traffic for each KMS activation?**

**A.** Approximately 250 bytes are sent in each direction for a complete client-KMS exchange, plus TCP session overhead. The only additional network traffic is for auto-discovery, which usually occurs only once per client computer, as long as the same KMS continues to be available for subsequent renewals.

**Q. How are KMS activations aged?**

**A.** When a computer activates using a KMS, its client machine ID (CMID) is added to the n-cache. When the same client renews its activation, the cached CMID and date stamp are removed and the new activation creates a new cache entry. KMS clients renew every seven days by default. However, if the client computer does not renew its activation after 30 days, its CMID is removed from the n-cache and the n-count reduces by one. To prevent KMS activation aging from bringing n-count below 25, the KMS caches the CMIDs of the most recent 50 activations.

**Q. What type of encryption does KMS use?**

**A.** In KMS, Cipher Block Chaining Message Authentication Code (CBC-MAC) is used as the signing mechanism with the Advanced Encryption Standard (AES) as the underlying encryption function.

**Q. Is the default KMS process compatible with BIND or other non-Microsoft DNS systems?**

**A.** Yes. The KMS system uses SRV resource records (RR) to store and communicate KMS location and configuration information through DNS. Any DNS server that supports SRV records (per RFC 2782) and dynamic updates (per RFC 2136) will support KMS client auto-discovery and KMS client discovery. Berkeley Internet Domain Name (BIND) versions 8.x and 9.x support both SRV records and DDNS.

**Note** DNSSEC, ACLs, and any other security mechanisms must be configured to allow writing of SRV and A resource records to the necessary DNS zones.

**Q. How do I configure BIND 9.x DNS server to support KMS auto-publishing?**

**A.** The BIND server must be set up to enable resource record updates from the KMS host. For example, add the following line to the zone definition in named.conf (or named.conf.local):

```
allow-update { any; };
```

**Note** An *allow-update* statement can also be added in `named.conf.options` to allow DDNS for all zones hosted on the server for which this server is authoritative.

**Q. How do I manually add KMS records to BIND or other non-Microsoft DNS servers?**

**A.** The KMS system uses SRV resource records to store and communicate KMS location and configuration information through DNS. You can manually create the necessary SRV record for a KMS host. It should contain the following information:

```
Name=_vlmcs._TCP
Type=SRV
Priority = 0
Weight = 0
Port = 1688
Hostname = <FQDN or A-Name of the KMS host>
```

*In a sample BIND 9.x zone file, a proper KMS SRV RR looks like this:*

```
_vlmcs._tcp          SRV    0 0 1688 kms01.contoso.com
```

**Notes**

- Priority and Weight are not used by the KMS service and are ignored by KMS client. However, they do need to be included in the zone file.
- Port 1688 is the default port, but it can be changed on the KMS and KMS client computers. For more information, see the *Windows Vista Volume Activation 2.0 Step-by-Step Guide*.

If you use a custom port for the KMS and manually create the SRV record for the KMS, change the port data in the SRV record to match the custom port configured on the KMS.

**Q. Can I run KMS on multiple domain controllers for better distribution?**

**A.** Yes, you can run KMS on multiple domain controllers.

**Q. I created and deployed a Windows Vista image. Why are the client computers not adding to the KMS count?**

**A.** You need to run `sysprep /generalize` to reset both the SID and the product activation information; otherwise, each client computer looks identical and KMS cannot distinguish between them. Important parameters must be reset to prevent such conflicts between cloned computers; including parameters such as the activation timer, KMS client machine ID (CMID), name of the client computer, and the security ID (SID).

**Q. How do I activate a computer that is behind a proxy server, using authentication?**

**A.** Per [KB921471](#), there are known cases where activation may be blocked if a proxy server requires authentication. It is recommended that you do not use Basic

authentication with ISA or other proxy servers because activation requests do not present the user's credentials to the proxy.

However, if you need to use Basic authentication or a comparable mechanism on the proxy server, add the following URLs in the Proxy Authentication exclusion list.

- <http://go.microsoft.com/>\*
- <https://sls.microsoft.com/>\*
- <https://sls.microsoft.com:443>
- <http://crl.microsoft.com/pki/crl/products/MicrosoftRootAuthority.crl>
- <http://crl.microsoft.com/pki/crl/products/MicrosoftProductSecureCommunications.crl>
- <http://www.microsoft.com/pki/crl/products/MicrosoftProductSecureCommunications.crl>
- <http://crl.microsoft.com/pki/crl/products/MicrosoftProductSecureServer.crl>
- <http://www.microsoft.com/pki/crl/products/MicrosoftProductSecureServer.crl>

## KMS Publishing to DNS

### **Q. Why is my KMS service unable to create SRV records in DNS?**

**A.** Your DNS may restrict or may not support DDNS. In this case, you need to create the SRV record manually with the name `_VLMCS._TCP.DNSDomainName` (service name and protocol) for the domain and set the time-to-live (TTL) to 60 minutes, and specify the KMS host and port (default 1688/TCP).

Alternatively, adjust the permissions within DNS so that the KMS can update its SRV resource records. Restart the KMS service for the changes to take effect.

### **Q. If there are multiple KMS hosts in a domain, and yet one or more of those KMS services are not responding, what logic does the KMS client use to find the next KMS service?**

**A.** The first time a KMS client computer attempts to activate, a KMS computer name is randomly chosen from all the retrieved SRV resource records. If the selected KMS does not respond, the KMS client computer will immediately remove that KMS from its list of SRV resource records and randomly select another KMS. Once a KMS responds, the KMS client computer caches the name of the KMS and uses it for subsequent activation and renewal attempts. If the cached KMS does not respond on a subsequent renewal, the KMS client computer rediscovers a KMS using the same algorithm.

### **Q. Is the KMS auto-discovery feature dependent on Microsoft's DNS? Are there any additional requirements for this to work beyond support for the SRV resource records?**

**A.** KMS client auto-discovery does not require Microsoft's implementation of DNS. Auto-discovery will work with any standards-compliant DNS system that supports SRV resource records. However, the KMS host will need write permission to create

and update the SRV, A, and AAAA resource records in a Dynamic DNS system, or the KMS resource records will have to be manually entered.

**Q. How often does the KMS refresh the SRV resource record in DNS? Can I control the refresh interval?**

**A.** The SRV resource record is refreshed once every day. This is not configurable.

**Q. If KMS is uninstalled, does it automatically remove the SRV resource records that were written?**

**A.** No. DNS records are not automatically removed. Run *Slmgr -cdns* to disable DNS publishing and then manually delete the appropriate KMS SRV resource records from DNS.

**Q. How do I find out if the DNS SRV resource records are accessible to the client computer?**

**A.** Run the following script from the command prompt:

```
nslookup -type=svr _vlmcs._tcp.
```

The reply will include the following information for each KMS SRV resource record in DNS:

```
vlmcs._tcp.contoso.com SRV service location:
  priority      = 0
  weight        = 0
  port          = 1688
  svr hostname  = KMS1.contoso.com
```

## Volume License Policies

**Q. What is n-count?**

**A.** N-count is the minimum number of computers that have to connect to a KMS host before any KMS client computers are activated. This value is stored in the license policy of the client computer, and the activation decision is made by the computer based on the count that KMS returns. The n-count for Windows Vista is 25. This value is not configurable. A Windows Vista client computer will activate itself if the KMS returns an n-count equal to or greater than 25.

**Q. Do MAK-activated computers add to the KMS n-count?**

**A.** No, computers that are activated through MAK do not add to the KMS n-count.

**Q. What does a -1 n-count mean?**

**A.** A count of -1 means that no clients have contacted the KMS host.

**Q. What is meant by “Grace period” and when does it start?**

**A.** The term “Grace period” refers to a length of time provided to allow any necessary actions to return the computer to the Licensed state. All grace periods last 30 days.

**Q. When and how often do computers attempt activation and reactivation?**

**A.** Newly installed computers automatically attempt activation every two hours (configurable) within the 30-day Initial Grace period. MAK-activated computers require one-time activation against Microsoft, whereas KMS-activated computers have a 180-day expiration period during which they must reconnect to the KMS service. KMS-activated computers attempt activation renewal every seven days (configurable at the KMS host). Each renewal extends the expiration period of the computer to the full 180 days.

**Q. What are the five license states?**

**A.** Windows Vista utilizes five license states to track activation. The five license states are Licensed, Initial Grace (OOB), Non-Genuine Grace, Out-of-Tolerance Grace, and Unlicensed.

**Q. What is meant by “Licensed”?**

**A.** A “Licensed” computer has been properly activated. Activation can happen in several ways including Internet and phone activation. Additionally, KMS clients can activate themselves after contacting an activated KMS.

**Q. What is Initial Grace?**

**A.** Initial Grace (or OOB Grace) starts the first time you start your computer after you install the operating system. It provides 30 days for the computer to be activated. The Initial Grace period can only be restarted by running *sysprep /generalize*, or by using *slmgr.vbs -rearm*. These processes reset the Initial Grace timer to 30 days. This will only work three times.

**Q. What is non-Genuine Grace?**

**A.** Non-Genuine Grace occurs only on a computer that has the Windows Genuine ActiveX control installed, and then fails Genuine Validation. The computer is marked non-Genuine, and the License State may be changed to non-Genuine Grace. If this happens, non-Genuine Grace provides 30 days for the computer to be re-activated and validated Genuine by re-visiting the WGA website at <http://www.microsoft.com/genuine>.

**Q. What is Out-of-Tolerance Grace?**

**A.** Out of Tolerance Grace begins when cumulative hardware changes on an activated computer push it beyond a tolerance level, or when a KMS client goes for 180 days without contacting a KMS. OOT Grace provides 30 days for a computer to be re-activated. A computer may be activated and then fall into OOT grace any number of times, and each time the OOT Grace timer will be reset to 30 days.

**Q. What is meant by “Unlicensed”?**

**A.** When any grace period is allowed to expire, the computer becomes Unlicensed. An Unlicensed computer runs in Reduced Functionality Mode (RFM), which provides users very limited access to the system in one-hour increments, and presents a window containing links to properly license and activate the computer. If the computer falls into RFM from non-Genuine Grace, the user is presented with a window containing links and solutions specific to recovery from non-Genuine RFM.

For detailed guidance on recovering from RFM, see the "Troubleshooting" section in the *Windows Vista Volume Activation 2.0 Step-by-Step Guide*.

## Operations Management

**Q. What are the tools available for managing environments with KMS?**

**A.** You can use the KMS MOM Pack to monitor availability, and to support extensive reporting of KMS activations.

**Q. What activation reports are included in the KMS MOM Pack?**

**A.** The KMS MOM pack provides for the following reports:

- Activation Count Summary
- Virtual Machine Summary
- KMS Activity Summary
- Licensing Status Summary
- Machine Expiration Chart
- Machine Expiration Details

For description of each report, see the "KMS Activity Reporting" section in the *Windows Vista Volume Activation 2.0 Step-by-Step Guide*.

**Q. Can I expose my KMS to the Internet so my outside users can activate against it?**

**A.** You are responsible for both the use of keys assigned to you and the activation of products using your KMS hosts. You should not disclose keys to non-Microsoft parties, and you **must not** provide unsecured access to your KMS hosts over an uncontrolled network such as the Internet.

**Q. What provisions are available for KMS host failover?**

**A.** Multiple KMS hosts can be registered in DNS SRV resource records. If one KMS host is down, the KMS client computer will choose another from the list. If direct registration is used on the KMS client computer, you can use round-robin DNS or network load-balancing (software and hardware) to increase KMS availability.

**Q. Do I need to back up the KMS service data?**

**A.** You do not need to back up KMS service data. However, if you want to track the KMS activations, you may need to back up the KMS event log under **Windows Applications & Services** to preserve activation history.

**Q. If a KMS host fails, how do I restore a backup KMS host?**

**A.** You only need to replace the failed KMS with a new KMS host using the same configuration and ensure that its SRV resource record is added to DNS (if using DNS auto-discovery). The old SRV record will be deleted eventually if record scavenging is implemented in DNS, or it can be deleted manually. The KMS will then start collecting renewal requests and will allow clients to activate as soon as the number of requests has reached 25.

**Q. I perform routine clean up of event logs. Will I lose the activation history stored in the event log?**

**A.** Yes. If you use a clean up tool, consider exporting the event log data under **Windows Applications & Services** for activation history.

**Q. If I have more than one KMS hosts in the network, do I need to query each computer individually to get the activation data?**

**A.** If MOM or other Systems Management Server (SMS) KMS agent is installed, the event log data under **Windows Applications & Services** will be collected and forwarded to the MOM Data Warehouse. All data from different KMS hosts will be aggregated in the MOM Data Warehouse from where you can perform extensive reporting. These persist for a long period of time (the MOM administrator defines the retention period for these).

**Q. Why don't I see all options when running *slmgr.vbs*?**

**A.** The options available to *slmgr.vbs* differ based on the installed product key. For example, a MAK-activated computer will not display or process the KMS specific options.

**Q. How do I get detailed activation status information on my computer?**

**A.** To display Volume License and activation information, run *slmgr.vbs -dli* from an elevated command prompt. This provides general information about the current license, including the license state, the remaining expiration time or grace period and information specific to KMS clients or a KMS host.

You can also run the *slmgr.vbs -dlv* script to view more detailed licensing information, which may be useful for support purposes.

**Q. How do I turn off software licensing notifications?**

**A.** Although not recommended, an administrator can turn off software licensing notifications by creating and setting the following registry value, **HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\SL\Activation\NotificationDisabled (REG\_DWORD)** to '1'.

This flag will turn off all software licensing notifications such as balloons, wizards, and task dialog boxes. However, if this is turned off, you can miss potential fatal error messages.

**Important note:** This section contains information about how to modify the registry. Make sure to back up the registry before you modify it. Make sure that you know how to restore the registry if a problem occurs. For more information about how to back up, restore, and modify the registry, click the following article number to view the article in the Microsoft Knowledge Base: [256986](#) Description of the Microsoft Windows registry.

**Q. I inadvertently ran the *slmgr.vbs -ipk* script using a KMS key on several computers. How do I convert them back to KMS clients?**

**A.** Run *slmgr.vbs -ipk <setup key>*. Remember to delete any unnecessary SRV resource records from DNS if applicable and restart the computers.

**Q. There are more than 50 Windows Vista client computers activating against KMS in our environment, but when we ran *slmgr.vbs -dli* it only displayed 50 clients. Is this a bug?**

**A.** No. KMS keeps track of only the last 50 unique client computers that request KMS activation or renewal.

**Q. Why does the KMS only count up to 50 Windows Vista client computers and then stop?**

**A.** The KMS only tracks the last 50 computers that requested activation. The count is for KMS health and not for tracking license compliance. The value, 50, is derived from  $2 \times n$ , where  $n$  is the minimum number of computers required to support activation. Windows Vista requires an  $n$ -count of 25 to activate, so the KMS stores the last 50 requests.

**Q. How can I count the number of activations if KMS only tracks the last 50 activations requests?**

**A.** KMS logs all incoming requests to the Key Management Services event log under **Windows Applications & Services**. If you have MOM 2005, you can track activations and generate reports by using the KMS MOM Pack.

**Q. How can I count the number of activations besides using MOM?**

**A.** Any tool that can scan the event logs can generate reports on activation activity.

**Q. Can I disable access to Windows Anytime Upgrade in Windows Vista Business edition?**

**A.** You can disable access to Windows Anytime Upgrade in the Windows Vista Business edition, by adding a registry value to the reference image prior to deployment. For detailed guidance, see the "Disabling Windows Anytime Upgrade" section in the *Windows Vista Volume Activation 2.0 Step-by-Step Guide*.

**Q. Are there any issues with upgrading computers running a Release Candidate version of Windows Vista to the RTM version?**

**A.** Performing an upgrade of a Windows Vista Release Candidate to the RTM version will reset all Volume Activation 2.0 configuration parameters to defaults. This includes the registry setting to enable Standard User Product Activation.

## Reduced Functionality Mode (RFM)

**Q. What is RFM? How does a machine recover from it?**

**A.** A computer enters RFM if it fails to activate within the 30-day grace period or if it fails to reactivate within 30 days after the 180 days KMS activation expires (in case of a KMS-activated computer). In RFM, the user is provided multiple options for activation after logon. If the computer is not reactivated within one hour, the user is forcibly logged off. For more details on resolving RFM, see the "Resolving Reduced Functionality Mode" section in the *Windows Vista Volume Activation 2.0 Step-by-Step Guide*.

**Q. What happens when the RFM one hour limit is up?**

**A.** After one hour, the system automatically logs out the currently logged-on user, without any warning.

**Q. What causes MAK-activated computers to go into RFM?**

**A.** MAK-activated computers go into RFM if they fail to activate within 30 days of installation or if they fail to renew activation within 30 days of a major hardware replacement.

**Q. What causes KMS-activated computers to go in to RFM?**

**A.** KMS-activated computers enter RFM under any one of the following conditions:

- If they fail to activate within 30 days of installation
- If they fail to renew activation within 210 (180 days plus 30 days grace period) days of previous renewal
- If they fail to renew activation within 30 days of hard drive replacement

**Q. What is the frequency of activation reminders during the grace period before a computer goes into RFM?**

**A.** After three days of entering the grace period, users are notified that their computer is not activated. As time passes, the frequency of reminders increases, such that by the end of the grace period, the notification is hourly.

**Q. Do KMS client computers continue to search for a KMS host while in RFM?**

**A.** Yes. KMS client computers continue to search for a KMS host even while in RFM.

**Q. Can I run the *slmgr.vbs* script in Safe Mode?**

**A.** No. Activation information is unavailable in Safe Mode.

## Virtualization

**Q. Do virtual servers or machines count towards n-count?**

**A.** No, only physical computers are added to the n-count.

**Q. Can I use KMS for virtual machines and guest operating systems?**

**A.** Yes, but keep in mind that virtual machines are not counted towards the 25 computer count that the KMS service requires for activating the other Windows Vista client computers in the environment.

**Q. Can I use MAK for virtual machines and guest operating systems?**

**A.** Yes. If MAK activation is used then it is subject to the same hardware tolerance meaning if the host machine hardware changes significantly then it might require reactivation.

**Q. What is the guidance around virtualized Windows Vista?**

**A.** When the virtual machine is created, it is recommended to run the *sysprep /generalize* script to reset the product activation timers. Optionally, if you do not want to generalize all computer settings, you can run *slmgr-rearm* to reset the product activation timers only. This can only be done for a maximum of 3 times.

## For More Information

- For planning, deployment and operational guidance for activating volume editions of Windows Vista, see the "Windows Vista Volume Activation 2.0 Step-by-Step Guide" in <http://go.microsoft.com/fwlink/?LinkId=76704>
- For a list of WMI methods, KMS registry keys, KMS events, KMS error codes, and KMS RPC messages, refer to the "Volume Activation 2.0 Technical Attributes.xls" in <http://go.microsoft.com/fwlink/?LinkId=76703>
- For information about the Microsoft Solution Accelerator for Business Desktop Deployment (BDD): <http://go.microsoft.com/fwlink/?LinkId=76620>
- For a list of Volume License products available, go to: <http://www.microsoft.com/licensing/default.mspx>