Customizing Windows 7 Professional Edition

Licensing, Reimaging, and Product Activation Considerations

Microsoft Corporation
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# Summary

This white paper discusses the benefits of customizing Windows® 7 Professional Edition and reviews the activation impacts associated with customization. It also provides the policy implications of customization and details these implications through common customization scenarios.

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# Introduction

Organizations will often customize their installations of the Windows® 7 operating system to maximize productivity and realize the full benefits of their software purchase. While Microsoft® encourages organizations to deploy Windows 7 as efficiently as possible, it’s important that organizations understand the available customization options, how to ensure effective deployments, and how to maintain compliance with Microsoft licensing policies.

This white paper addresses the following topics:

* Explains the concept and benefits of Windows 7 customization
* Discusses the interdependencies between customization and Windows 7 activation
* Provides a critical explanation of the policy implications of customization by license type
* Summarizes common customization scenarios and the implications of each

This white paper is intended for information technology (IT) decision makers and IT professionals who want to customize installations of Windows 7 Professional Edition and seek clarity on the impact of customization in relation to deployment and Microsoft licensing policies.

# Benefits of Windows 7 Professional Edition Customization

In most instances, organizations receive a base license and installation of Windows 7 Professional Edition when they purchase a personal computer (PC) from a PC manufacturer, including Original Equipment Manufacturers (OEMs). Sometimes an organization wants to customize, add, remove, or modify what the manufacturer provided in the standard installation. Some of the common benefits organizations gain from customizing their operating system installations include:

* Enhanced end-user productivity by adding line-of-business (LOB) applications.
* Less downtime because incompatibilities are reduced by adding custom device drivers to ensure that the organization’s devices will work with a new operating system.
* Easier usage and adoption among end users by modifying the look and feel of the operating system to tailor it to the needs of an organization’s employees.
* Faster and less expensive deployment by creating a new image and then deploying that image to multiple computers.

Additional benefits of customizing an OEM version may include:

* An optimized work environment by removing unneeded or undesired applications or tools that were installed by the OEM.
* Reduced deployment time by maintaining OEM activation.

Most systems with Windows 7 Professional Edition that come from an OEM already have Windows 7 Professional Edition activated, meaning that the license has been validated to be WindowsGenuine software. As organizations seek ways to customize a version of Windows 7 Professional Edition that has already been activated by an OEM, they should feel confident that their customizations are fully compliant with their current Microsoft licensing agreements and with Windows 7 Professional Edition activation.

# Activation Background

Windows 7 Professional Edition launched with software protection technology that is designed to help fight piracy, protect organizations from the risks of non-genuine software, and enable organizations with volume license agreements to manage their software assets more effectively. That software protection technology is called “Windows Product Activation (WPA).” Activation helps verify that an organization’s copy of Windows 7 Professional Edition is genuine and that it has not been used on more computers than the license terms allow.

The product-activation process can help protect organizations from the risks of deploying non-genuine software. For example:

A [Harrison Group study](http://download.microsoft.com/download/D/C/5/DC503630-3EDD-455D-B155-4FCCA6FCCEA3/TCO%20Global%20Final%20Whitepaper.pdf) sponsored by Microsoft found that organizations using unlicensed and/or non-genuine software were
73 percent more likely than organizations using fully licensed, genuine software to have loss or damage of sensitive data, and 73 percent more likely to have critical system failures lasting
24 hours or more.

A [Yankee Group Report](http://download.microsoft.com/download/3/6/3/363e4976-3abd-4eab-b2e2-a643342bc869/Yankee_Group_Piracy_Research_WhitePaper.pdf), revealed that when problems arise with non-genuine software, IT administrators typically require 20-30 percent more time to identify and resolve problems.

Counterfeit software can lead to data loss, identity theft, and costly downtime. Don’t risk it. Get the features, security, and support that you deserve with genuine Microsoft software. Find out more on the [Know The Facts](http://www.microsoft.com/piracy/knowthefacts/counterfeit.aspx) page.

WPA technologies and processes vary depending on the type of license an organization purchases and the media an organization uses. The activation methods, processes, tools and technologies for the OEM, volume license (VL), and retail licenses are different depending on the “type of license” an organization purchases. The following table summarizes the two most common activation methods used in medium and large organizations:

|  |
| --- |
| **Common Activation Methods** |
|  | OEM activation is a perpetual, one-time activation that associates Windows 7 Professional Edition with the firmware of a computer. OA 2.0 represents the activation technology that is in place at the time of the Windows 7 Professional Edition release. This occurs before the PC ships to an organization. The copy of Windows 7 Professional Edition that the OEM installs on a PC is only valid on that particular PC and can be reinstalled and reactivated only from the recovery media that is provided by the OEM. |
|  | Volume Activation (VA) is designed to automate the activation process for systems that are deployed using volume media. Volume media are normally obtained through the [Microsoft Volume Licensing Service Center](https://www.microsoft.com/licensing/servicecenter) (VLSC), which is an online resource designed to help organizations download licensed products, manage Microsoft volume licensing agreements, and access product keys. VA includes Key Management Service (KMS) for activating systems within a customer environment and Multiple Activation Keys (MAK) for activating systems with Microsoft hosted activation services. Organizations can choose either one or both of these methods (KMS or MAK) to activate the software. For a more thorough overview of activation methods, refer to [Volume Activation](http://www.technet.com/volumeactivation) content online. |

If a copy of Windows 7 Professional Edition is not activated successfully, it may become subject to an activation notification that would alert the organization that the installation of Windows 7 Professional Edition may not be genuine. These notifications will continue regularly until the product is activated. Organizations that need to customize their Windows 7 Professional Edition installations will want to ensure that activation occurs successfully.

For more detailed information on activation and activation notifications, please visit <http://www.microsoft.com/genuine/AboutNotifications.aspx>.

If you are concerned about whether your installation of Windows 7 Professional Edition is genuine, please visit [www.microsoft.com/genuine](http://www.microsoft.com/genuine) to assess the genuine status of your software installation.

# Customization and Reimaging

In addition to the activation considerations that are described in the previous section, organizations also need to ensure that their customizations are in compliance with the licensing policies associated with their hardware and software purchases. A summary of these licensing policies follows.

Customizing an installation of Windows 7 Professional Edition often requires “reimaging” during deployment. Reimaging involves copying software that is based on one standard image onto multiple PCs. In most cases, the original “image” is a snapshot of the contents on a PC hard drive which is prepared in such a way that it can be copied, or “reimaged,” to other PCs. The primary benefits of reimaging are the speed with which organizations can deploy new client computers and operational consistency among all the PCs in the IT environment.

Reimaging rights are granted to all Microsoft VL customers as part of the “policy” governing their license agreement(s). Within this VL policy, organizations may reimage OEM systems or systems with retail licenses by using the media provided under their VL agreement. If you have or have had a volume license agreement, then your legal usage rights are defined in that agreement and you should consult them. For additional details, please view the sidebar titled “Volume Licensing Details” later in this document.

Customizing and reimaging a Windows 7 Professional Edition image needs to be conducted in compliance with the terms of the organization’s licensing purchase. The following explains how this works when an organization purchases licenses through OEM or VL.

## Systems with OEM Licensing

When an organization receives a PC with a pre-installed OEM version of Windows 7 Professional Edition, the OEM license allows the organization to use that pre-installed image on that OEM PC only. If the PC fails in the future and the image needs to be restored, the organization needs to use the original recovery media provided by the OEM to re-install the image.

Some OEMs offer two image types on the PCs they sell: a “bundled” image or a “clean” image. A “bundled” image generally includes additional tools or applications along with the Windows 7 Professional Edition image that OEMs provide from the factory. For example, an OEM may include a video player and editor or some OEM systems-management tools.

A “clean” image is usually an image that contains *only* Microsoft software with no additional software or tools included.

Whether an OEM provides a bundled or a clean image, organizations that want to customize the OEM-provided image have two options:

The organization may use
the Windows Automated Installation Kit (Windows AIK) toolset to add or remove software from the OEM-provided image.

The organization may work with the OEM to develop a Custom Factory Image (CFI) that will be installed and activated by the OEM before shipping PCs to the organization.

Both of these options allow an organization to retain OEM activation.

|  |
| --- |
| **CFI Examples**  Many OEMs offer customization and imaging services. The following examples are provided to give you an idea of the types of CFIs that are available from OEMs.  |
| **Dell** |
| Dell’s Image/Software Factory Integration service can load an organization-supplied software image onto new Dell hardware systems in the factory. The service is available on Dell OptiPlex, Latitude, and Precision systems. Read more about Dell’s customization options [here](http://www.dell.com/downloads/global/services/cfi_sfi.pdf).  |
| **Hewlett Packard** |
| Hewlett Packard can customize and deploy a CFI. Specific services that Hewlett Packard provides include:* [Software image management](http://h71028.www7.hp.com/enterprise/cache/99364-0-0-225-121.html?jumpid=reg_R1002_USEN#sim)
* [System customization](http://h71028.www7.hp.com/enterprise/cache/99364-0-0-225-121.html?jumpid=reg_R1002_USEN#Syc)
* [Solution services](http://h71028.www7.hp.com/enterprise/cache/99364-0-0-225-121.html?jumpid=reg_R1002_USEN#ss)
 |
| **Lenovo** |
| Lenovo offers system setting customization, options installation, and image creation, loading, and management. Read more about [Lenovo’s customization options](http://www.lenovo.com/services_warranty/us/en/deployment.html). |

To create a CFI, the organization and OEM work together to customize the original OEM image by, for example, removing OEM bundled software or adding the organization’s own LOB applications and custom drivers. When the OEM has developed an organization-approved image, the OEM tests and deploys the image to the purchased PCs, and activates each PC using OA 2.0. This means that the PCs are shipped to the organization pre-customized and pre-activated.

OEMs have their own processes and tools for working with organizations to develop a CFI. Jointly creating a CFI often involves an investment of time and effort for both the OEM and the organization, so a CFI may involve additional charges or minimum quantities. Organizations that choose this approach usually find it worthwhile in order to receive PCs pre-installed with a customized image that meets their organizational needs.

## Systems with Volume Licensing

Microsoft VL programs offer organizations a way to license Microsoft software that is tailored to the size and purchasing preferences of their organizations. With VL agreements for client operating systems, organizations acquire upgrade licenses only; these upgrade licenses are then applied to computers that already have a full and qualifying version of a Windows operating system installed.

**Volume Licensing Details**

If customers have an Enterprise Agreement (100% of their PCs are covered by Client Software Assurance), then they have both re-imaging rights and upgrade rights.

If customers want to deploy Windows 7 Professional Edition onto computers that are running Windows XP by using a common image, they should be aware that that is considered an upgrade. Therefore, customers need to purchase upgrade licenses for every PC that previously had an Windows XP Certificate of Authenticity (COA).

Customers can obtain VL media for their imaging needs for Windows XP, Windows Vista®, or Windows 7. The media can be obtained through the online Volume Licensing Service Center or by ordering the media part through a reseller.

**Qualifying operating systems for upgrades:**

Licenses purchased for Windows XP Home Edition do not qualify for upgrade purposes in any commercial Microsoft VL program. If customers want to deploy VL Professional Upgrades onto PCs that were purchased with licenses for Windows XP Home Edition, they should talk to their Microsoft account manager about purchasing step-up licenses.

Refer to [The Table of Qualifying Base OS's for Vista Professional Upgrade](http://www.microsoftvolumelicensing.com/userights/ProductPage.aspx?pid=232).

In other words, organizations must first have a licensed and qualified operating system installed on each computer (for example, installed by a qualified OEM or retail provider) before they can use the Microsoft Volume Licensing Program to acquire an upgrade license of Windows 7 Professional Edition for that computer. These upgrade rights depend on the type of VL agreement signed.

Organizations with VL agreements also have rights to reimage using volume media. They can create a customized master image and then deploy it to PCs from any OEM. Essentially, organizations that obtained their systems with a qualifying base VL image through an OEM have rights to replace the OEM version with their customized master image.

Volume media are often obtained through the Microsoft VLSC, which is an online resource designed to help organizations download licensed products, manage Microsoft Volume Licensing agreements, and access product keys—all in one place.

An organization with a VL agreement (for example, an Enterprise Agreement) is free to work with an OEM to develop a CFI that is built on a base VL image; however, the organization must first purchase a qualifying base operating system on the PC. When the VL media is used, the resulting installation requires volume activation.

Please see the [volume licensing brief](http://download.microsoft.com/download/1/7/7/17745e4a-5d31-4de4-a416-07c646336d94/reimaging.doc) for additional details.

# Windows 7 Professional Edition Customization Scenarios

Windows 7 Professional Edition customization scenarios depend primarily on two variables:

1. Does the customization occur before the computers are shipped to the organization or after?
2. What license type is being applied (OEM or VL)?

Customization of the image *before* shipment can only occur under one scenario (see Scenario 1 that follows). However, the licensing type can influence all four scenarios.

For each of the following scenarios, we explore not only the respective licensing policy, but also the implications on reimaging rights and the impact on Windows 7 Professional Edition activation. The four scenarios are:

## Scenario 1: Customize an OEM Image before Delivery; No Volume License

### Scenario Situation

Kevin Kelly is the desktop systems administrator for Trey Research, an environmental engineering research firm. Kevin works out of the corporate offices for Trey Research in Seattle, Washington, but the organization has branch offices in several other locations in the US, with IT managers at each location. Though Trey Research has been growing, it has not yet signed a VL agreement with Microsoft.

Kevin is currently planning the purchase of new PCs at an office in Pennsylvania, and he has worked with corporate purchasing to negotiate a deal with an OEM to have the new systems pre-installed with Windows 7 Professional Edition. However, Kevin knows that the OEM they are purchasing from uses a Windows 7 Professional Edition installation that includes several components that he needs to remove before deployment. For example, there are several customized Control Panel tools and a non-Microsoft media player installed in the typical image provided by the OEM.

Kevin has also been working with the local IT manager in Pennsylvania to install a customized version of Internet Explorer® that includes a special set of favorites, security settings, an organization-specific home page, and more on each computer.

### Policy Considerations

Trey Research needs to consider the following policies based on its licensing situation:

* Since Trey Research has never had a VL agreement, the company does not have access to reimaging rights for volume media versions of Windows 7 Professional Edition.
* The OEM license provided with each PC that Trey Research purchases allows the organization to use the pre-installed Windows 7 Professional Edition image on that OEM PC only.
* If one of the PCs fails after it is received in the Pennsylvania office and require a re-installation of the Windows 7 Professional Edition image, Trey Research needs to use the original recovery media that was provided by the OEM for that PC.
* This OEM will activate Windows 7 Professional Edition on each PC before shipping it to Trey Research, and that activation will remain valid upon deployment and upon recovery (if required).

### Recommended Approach

Kevin should work with his OEM to identify the scope, processes, tools, and additional fees or contract requirements for creating a CFI. When Kevin and the OEM have settled on the terms of their agreement, then Kevin should work with the OEM to create a specific CFI that meets his requirements (which in this case involves removing the Control Panel customizations and non-Microsoft media player and adding the Pennsylvania site’s customized version of Internet Explorer).

After the OEM creates a master image of the CFI, the OEM can reimage all of the PCs it will ship to the Pennsylvania site. The OEM should also activate the copies of Windows 7 Professional Edition on every PC before shipping them.

### Benefits of this Approach

The primary benefit to Trey Research is that the Pennsylvania site will receive PCs from the OEM, which are already customized to its specifications. Also, with the CFI that Trey Research receives, the recovery media that the OEM provides will already include the required customizations. The IT manager on site will never have to start from the very beginning when rebuilding a system. In addition, Kevin won’t have to worry about activation issues, because this OEM will activate Windows 7 Professional Edition on each PC before shipment, and this activation is maintained if it becomes necessary to rebuild a PC based on the CFI recovery media.

## Scenario 2: Customize an OEM Image after Delivery; No Volume License

### Scenario Situation

Lucerne Publishing is a relatively centralized, full-service publishing company for the arts community. Ryan Gregg is the IT manager in the Content and Editing division of Lucerne Publishing. The company has just negotiated an agreement with an OEM to purchase new PCs to replace the now-outdated desktop PCs used by most of the employees in Ryan’s division. Even though the OEM provides a clean image on the purchased PCs, Ryan needs to enforce a standard desktop environment that includes several custom drivers to be used by the division, as well as an LOB application and a set of strict security settings that are not set by default in Windows 7 Professional Edition. While the number of PCs in this purchase is significant, Ryan was not able to use CFI for various reasons.

Ryan appreciates the benefits of using genuine software, and he is concerned that creating a new image for each PC will interfere with the pre-activation of Windows 7 Professional Edition that the OEM has already provided.

### Policy Considerations

Lucerne Publishing needs to consider the following policies based on its licensing situation:

* Because Lucerne Publishing does not have a VL agreement that covers Windows 7 Professional Edition, the company does not have access to reimaging rights for the volume media versions of Windows 7 Professional Edition.
* The OEM license allows Ryan’s team to use the pre-installed image for a particular OEM PC on that PC only.
* If one of the PCs fails and requires recovery, Ryan’s team needs to use the original recovery media provided by the OEM to re-install the original image.
* OEM activation will be maintained upon deployment and upon recovery.

### Recommended Approach

Before Ryan receives any of the PCs, the OEM installs the clean image and activates Windows 7 Professional Edition on each PC. As a result, Ryan does not have to perform any activation tasks in his deployment plan.

Upon receipt of the first shipment of PCs, Ryan unpacks a single computer and uses the Windows AIK toolset to customize the OEM clean image with the drivers, the LOB application client, and the Windows 7 Professional Edition security settings that Lucerne Publishing needs. He then uses the Windows AIK tools to create a new master image, which he installs on the PC.

Ryan then directs the members of his team to unpack the additional PCs and follow the same process he used on the first PC to customize, save, and install a new master image on each of the additional PCs.

Later, if one of these PCs fails and requires recovery, Ryan’s team would need to restore the original image that shipped with the PC (from the recovery media the OEM provided), and then duplicate the process that Ryan originally followed to create and install a customized image on the original PC.

### Benefits of this Approach

This approach allows Lucerne Publishing to customize the Windows 7 Professional Edition image on its PCs without having a VL agreement and without negotiating a CFI with the OEM. Also, because this OEM activates Windows 7 Professional Edition on each PC before shipment, Ryan’s team does not have to perform activation to maintain the activation status of each computer.

## Scenario 3: Customize a Volume License Image

### Scenario Situation

Molly Clark is the desktop configuration administrator for Woodgrove Bank, a leading global investment bank. Molly is responsible for provisioning desktop PCs for all the North American locations, and she also consults with the Global Enterprise IT Division about setting the strategic direction for the desktop operating systems and applications to be deployed in North America. Woodgrove Bank has recently purchased a large number of PCs that are preinstalled with the OEM version of Windows 7 Professional Edition. Because the bank has a VL agreement, Molly has access to the VL media that was acquired through the Microsoft VLSC.

Also as part of the organization’s VL agreement, Molly knows she has reimaging rights and can deploy the organization’s customized version of the VL media (specifically, a standard desktop image that was created for the company’s North America PCs) to all the qualifying PCs, which includes the PCs that were recently purchased.

### Policy Considerations

Woodgrove Bank needs to consider the following policies based on its licensing situation:

* The PCs that the bank purchased must have a qualifying base license (in this case, the OEM license for each PC) to be eligible for a VL media deployment.
* Molly can acquire the VL media from the Microsoft VLSC.
* As a benefit of the bank’s VL agreement, the bank has reimaging rights.
* The bank’s reimaging rights allow the bank to mass distribute a customized master image.
* The VL media that Molly downloaded from the Microsoft VLSC will (by default) require volume activation after all of the new PCs are reimaged.
* Molly will perform the volume activation after the PCs are reimaged, in contrast to Kevin in Scenario 1, who relied on the OEM to activate Windows 7 Professional Edition on the PCs before they were shipped.
* For volume activation, Molly will use the VA tools, which provide management and security for VL images of Windows 7 Professional Edition and Windows Server® 2008 R2.

### Recommended Approach

Molly downloads the VL media from the Microsoft VLSC. She then uses the Windows AIK tools (or another tool of the organization’s choice) to customize the image to include all of the components the bank uses in its standard desktop image (including, for example, a tool to access its banking system, adjustments to its Windows 7 Professional Edition settings, and some customized components in the Control Panel). She then saves the customized master image.

When the new PCs arrive, and as part of their deployment, Molly uses Windows Deployment Services to replace the OEM image on each PC with the new, customized master image (for more information, see the [Windows AIK article](http://technet.microsoft.com/en-us/library/cc748933.aspx)). She then activates Windows 7 Professional Edition using the volume activation method.

Later, if Molly needs to change the customized master image, she can use the Windows AIK toolset to update the master image and then redeploy the new version of the master image to all qualifying PCs, including the ones from this purchase.

### Benefits of this Approach

The primary benefit to Molly is that she can now reimage any PC that the bank purchases from any OEM with the customized master image, as long as the PC has a qualifying base license of Windows 7 Professional Edition. Another benefit is that the VL master image can be customized again after its initial deployment and the new master image can be reimaged on all of the qualifying PCs.

## Scenario 4: Customize an OEM Image after Delivery with a Volume License

### Background

Eric Lang is a senior desktop systems administrator for all of the local branches of Woodgrove Bank (the same global investment bank mentioned in Scenario 3) in the Dallas/Fort Worth area. He is responsible for the deployment of all new hardware in the area. Recently, the North American region of Woodgrove Bank signed a deal for new hardware with one OEM, but for business reasons, Eric would prefer to purchase equipment for the Dallas/Fort Worth area from another OEM, and he receives permission from corporate headquarters to do so.

Eric needs to deploy a customized version of Windows 7 Professional Edition on the PCs that he will receive from his chosen OEM. Each PC will have a clean Windows 7 Professional Edition image pre-installed and pre-activated when it arrives.

Because of advantageous timing, Eric receives his first shipment of new PCs before any other location in North America, and he wants to start deploying them immediately. However, the new customized master image that is being prepared by the North American IT team (Molly’s team from Scenario 3) is not ready yet. Because the shipment to Eric is small and targeted for a single branch office, Eric has the specifications for the new customized master image, and the organization has a VL agreement, Eric would like to proceed with the deployment. He can use the Windows AIK toolset to customize the OEM pre-installed media image on one of the new PCs and then reimage each of the other PCs with this customized image.

### Policy Considerations

The policy considerations for this scenario are a combination of policy considerations from the three previous scenarios. If Eric wants to customize the OEM pre-installed image and deploy it, the following policies apply:

* The OEM license provided with each PC that Eric receives allows him to use the pre-installed image of Windows 7 Professional Edition on that OEM PC only; it does not provide Eric with reimaging rights.
* Eric can use the Windows AIK toolset to customize the OEM pre-installed media image on a single PC and then install the customized image on that PC, but if he wants to create a customized image to install on the additional PCs he receives from the OEM, he must repeat the same process that he followed for the first PC.
* The OEM that Eric selected will activate Windows 7 Professional Edition on each PC before shipping it to Eric, and that activation remains valid upon deployment and upon recovery (if needed).

If Eric wants to be eligible for a VL customization and deployment, the following policies apply:

* The PCs that Eric purchased must have a qualifying base license (in this case, the OEM license for each PC).
* The bank must acquire the VL media image from the Microsoft VLSC. Eric can then customize it and create a VL master image.
* The bank’s VL agreement provides it with reimaging rights (on qualifying PCs from any OEM) but only for reimaging the customized VL media image that it creates. The bank cannot use the VL agreement to reimage the new PCs with Eric’s customized version of the OEM media image.
* The VL media image that the bank downloaded from the Microsoft VLSC and is customizing requires volume activation (using the VA tools) after the new PCs are reimaged.

### Recommended Approach

It is recommended that Eric use one of the following approaches:

* Work with his OEM to create a CFI that the OEM will use to install and activate Windows 7 Professional Edition before shipping the purchased PCs to Eric (this is the process described in Scenario 1 above)
* Wait for the bank’s corporate IT team to complete the customized VL image and then use the bank’s VL reimaging rights to deploy the customized VL image on all of the purchased PCs (this is the path described in Scenario 3 above).

If Eric chooses to work with his OEM to create a CFI, the PCs will arrive pre-activated. If Eric chooses to deploy the bank’s customized VL image, then Eric (or someone at the bank) will need to activate all of Eric’s PCs through VA.

### Benefits of this Approach

Read the benefits that are listed under Scenario 1 or Scenario 3.

# Conclusion

To maximize productivity and realize the full benefits of their purchase, organizations often seek to customize their deployment of Windows 7 Professional Edition. Organizations can choose from several approaches for creating a customized image that can be deployed across their organizations. Organizations can save time and other resources if they select the customization scenario that best meets their needs for licensing, reimaging, and activation.

The following table is a summary of the scenarios and respective solutions provided in this document, and it can serve as a quick reference during the planning stages of Windows 7 Professional Edition deployments where image customization is under consideration.

|  |  |
| --- | --- |
| **OEM Licensing and OEM Customization*** Customized pre-installed image
* Deployable to a PC from a single OEM
* Operating system from the OEM
* OEM Activation 2.0
 | **VL and OEM Customization*** Customized pre-installed image
* Deployable to PCs from all OEMs
* Operating system from VLprovided to OEM by organization
* Volume Activation
 |
| **OEM Licensing and Organization Customization*** Customization of individual PCs by using Windows AIK
* Deployable to a PC from a single OEM
* Operating system from the OEM
* OEM Activation 2.0
 | **VL and Organization Customization*** Customization of a VL master image by using Windows AIK
* Deployable to PCs from all OEMs
* Operating system is from VL
* Volume Activation
 |

# Additional Resources

More information on the concepts covered in this white paper is available from the following Microsoft Web sites:

* For additional details on VL, see the Microsoft VL site at <http://www.microsoft.com/licensing>.
* The Microsoft licensing site has an official document related to reimaging rights. See the VL briefs titled [Reimaging Rights](http://download.microsoft.com/download/1/7/7/17745e4a-5d31-4de4-a416-07c646336d94/reimaging.doc) for details.
* To understand more about licensing for Windows 7 and what versions qualify as a base for a VL upgrade, see the [Microsoft Product List - Windows Vista](http://www.microsoftvolumelicensing.com/userights/ProductPage.aspx?pid=232) site.
* For more information about volume activation, see the Microsoft Volume Activation Web site at <http://www.technet.com/volumeactivation>.
* For information about Windows AIK, visit <http://technet.microsoft.com/en-us/library/cc748933.aspx>.

Web addresses can change, so you might be unable to connect to the Web site(s) mentioned in this paper. If you attempt to access one of the Web sites noted and it is unavailable, we recommend visiting the Microsoft home page ([www.microsoft.com](http://www.microsoft.com)) and searching for the information or tool you need.