BigFix OS Deployment

Windows *7* Migration Guide

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Part 1

Preface

Introduction

Microsoft Windows 7 is a powerful, mainstream OS that can enhance security, productivity, and customization in your organization. This guide will give you detailed steps on how to use BigFix OS Deployment to migrate files and settings on a computer running Windows XP to a new installation of Windows 7.

The BigFix OS Deployment navigation tree will be the primary tool you will use throughout the migration process. OSD allows you to capture "master images" manage image repositories through wizards, tasks, and analyses, and schedule re-image of field systems. The OS Deployment *User's Guide*, which can be found on the BigFix support website, is a recommended prerequisite for administrators to configure and maintain the BigFix OSD infrastructure.

Why should you migrate your operating system to Windows 7?

- Windows 7 enhances the security of your machines through the latest security technology.
- Windows 7 enhances performance with support for new hardware.
- Windows XP will no longer be supported by Microsoft after 2014, and analysts recommend leaving the platform by the end of 2012.
- Windows 7 can lower support and maintenance costs on each system.
- Migrating to Windows 7 can help ensure compatibility with industry standards.

This document assumes that you are responding to a remote, end user's request to migrate a system from Windows XP to Windows 7. This document will enable you to perform this migration without data loss and with minimal disruption to operations.

System Requirements

BigFix offers support for the following operating systems for Windows 7 migration:

Microsoft Windows 7 Business (x86, x64)
Microsoft Windows 7 Ultimate (x86, x64)
Microsoft Windows XP Professional SP3
Microsoft Windows XP Professional SP3 x64 Edition

Pre-Migration Considerations

Begin thinking about your migration process in terms of four stages: discovery, preparation, migration, and maintenance. Each phase includes specific steps you can take to properly prepare for the migration and effectively manage your deployment thereafter.

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STAGES OF MIGRATION

Discovery phase

- Identify your hardware
- Identify your operating systems
- Identify your applications and device drivers
- Review the hardware requirements for Windows 7

Preparation phase

- Match Windows 7 hardware requirements against current resources
- Analyze and reconcile existing licensing usage patterns and costs
- Build and package your images and prepare your image repositories

Migration phase

- Determine what will be included in your Common Operating Environment (COE)
- Deploy your COE and retain user data during the migration

Maintenance phase

- Ensure that your migrated Windows 7 systems are patched and secured as quickly as possible
- Simplify provisioning processes by reducing image updates and maintained images

GENERAL CONSIDERATIONS

Windows 7 Eligibility Information

If you are migrating a Windows XP machine to Windows 7, it is recommended to perform a pre-migration analysis to determine whether a memory upgrade may be required prior to migration. BigFix has created an Analysis in the BigFix Console entitled *Windows 7 Eligibility Information.* See page 12 of this document for detailed information about how to access this Analysis.

User State Migration

You may want to enable a feature called User State Migration, which allows you to capture *user information* from a system before reimaging its disk, and then restore it to the system after reimaging. User information includes information outside of the COE, such as internet favorites, Microsoft Office settings, email settings, and documents stored in the My Documents folder. If you will be performing User State Migration, ensure that your relay has sufficient disk space. You can do this through the OS Deployment dashboard, either in the Repositories window under *Manage,* or through the Re-Image Wizard under *Wizards*. For more information about preparing for User State Migration, see the related Knowledge Base article on the BigFix support website.

Device Driver Identification

Be sure that you have the appropriate storage and network drivers specified in the driver search path for the hardware being re-imaged. The tool will search for appropriate drivers in the specified folders and subfolders. If a storage driver cannot be found and the captured image does not provide the proper driver, the system may not boot after applying the image. Likewise, if a network driver cannot be found and the captured image does not provide the proper driver, BigFix will be unable to re-establish control with the system post-deployment until the proper driver is installed.

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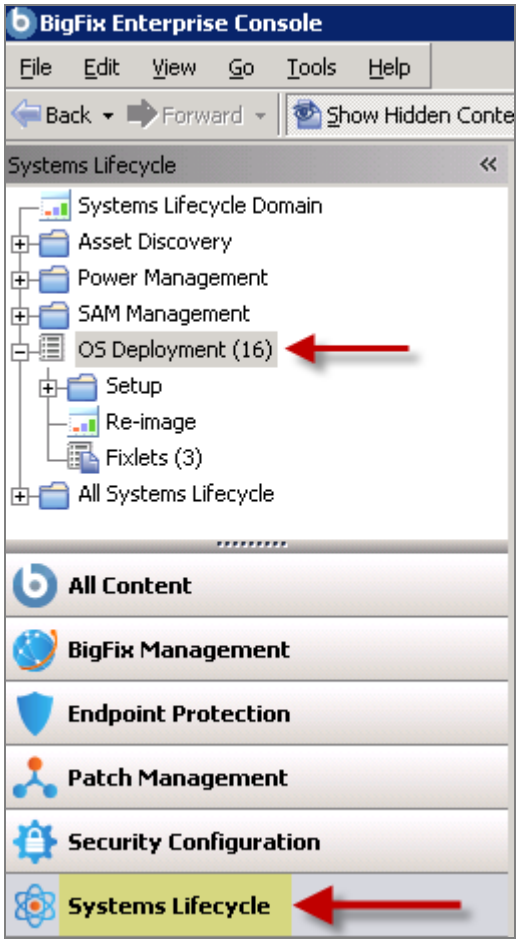
Navigation Tree Overview

The BigFix OS Deployment navigation tree, which will be your primary tool during the migration process, will enable you to migrate desktops, capture and re-image, and more. To access it, open the BigFix Console and click the *Systems Lifecycle* Domain at the bottom of the domain panel.



Then click the *OS Deployment* site, shown in the top of the navigation tree, to expand the contents. Located on the left side of your Console, the navigation tree organizes OSD content into a primary *Setup* node, a Re-image wizard, and a list of Fixlets.

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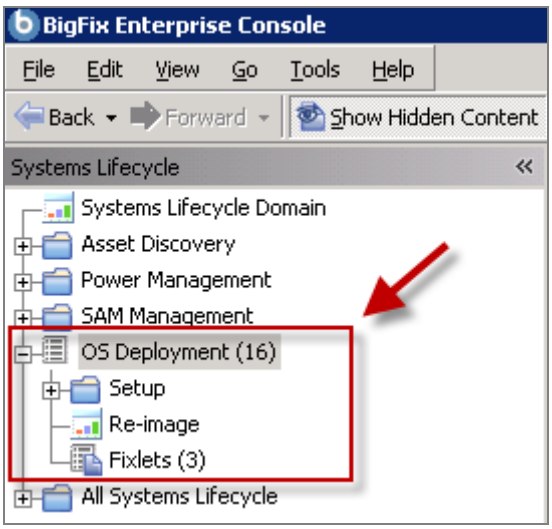
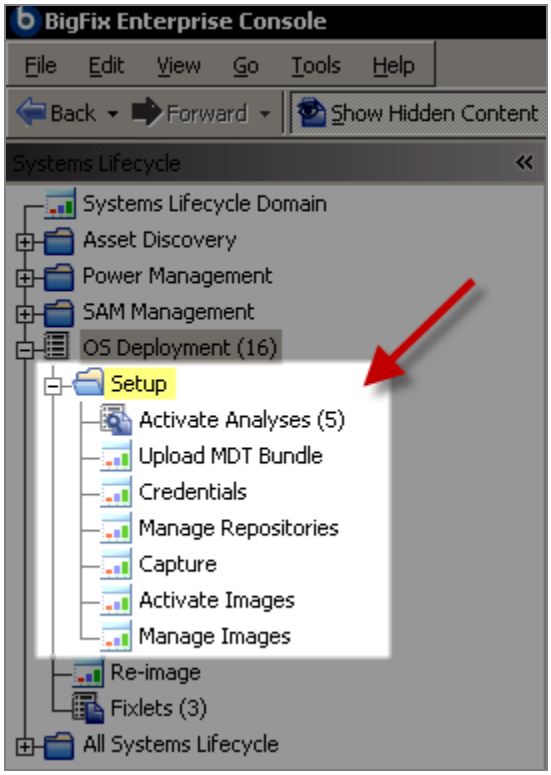


The Setup node expands to reveal a list of reports and wizards for activating analyses, uploading the MDT Bundle, setting credentials, managing repositories, and managing images.



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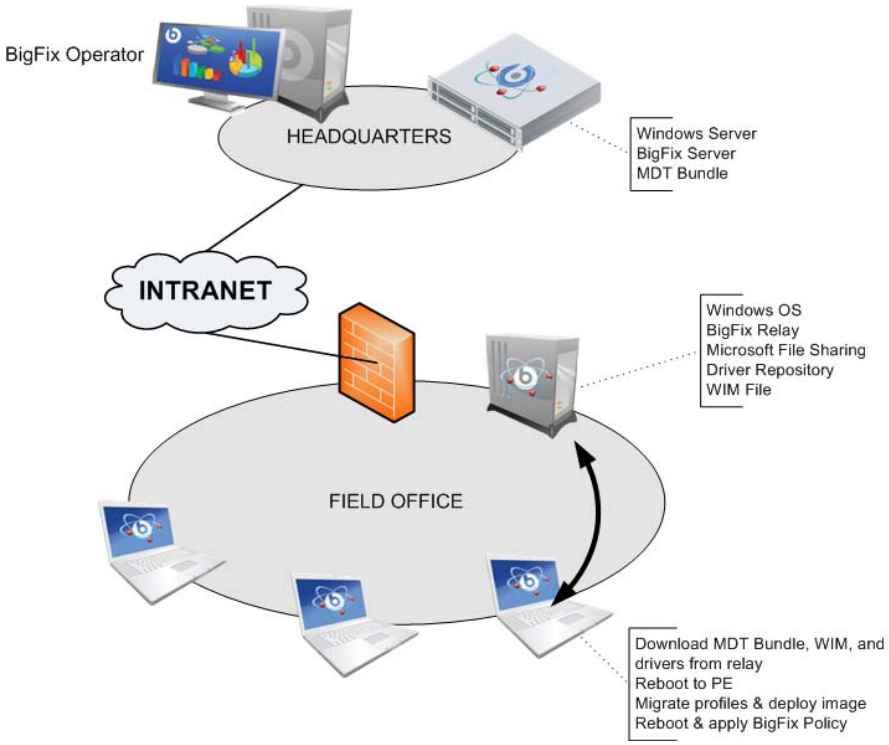
Part 2

Migration in 4 Steps

The actual process of migrating a Windows XP machine to Windows 7 can be done in four steps: select a re-image computer, select a source repository, select a source image, and select re-image options. First, view the graphic below to see a high-level image of how it all fits together.



What You're About To Do:

1. Choose a Source Image
2. Choose Target Machines
3. Choose Re-image Options
4. Schedule the Task

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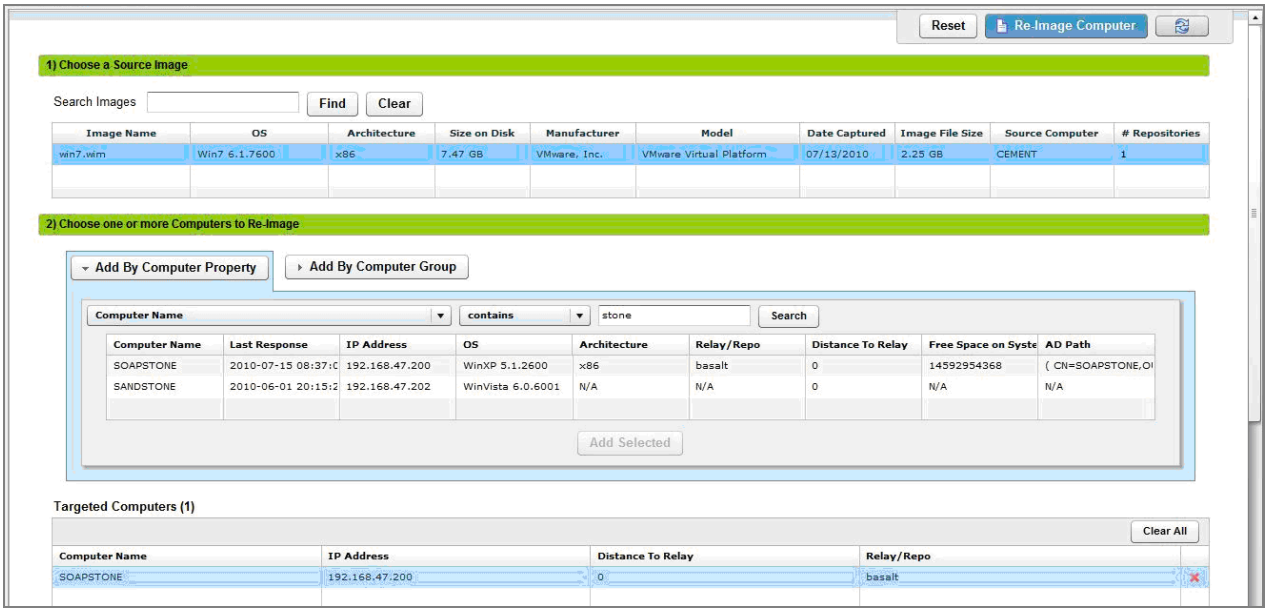
1. Choose a Source Image

Selecting a source image for your migration entails verifying that your image is appropriate for the given host computer. For example, verify that the image indeed contains Windows 7, and remember to send a 64-bit image to a machine with a 64-bit processor. You do not need to exactly match hardware, as Universal Deploy technology is used to ensure functionality. However, you may need to specify additional drivers in order to support different systems. Consult with your support representative for more information.



2. Choose Target Computers

When choosing computers to re-image, you need to verify that the image matches the correct machine. Start by verifying the computer names. You can browse the inventory to check details such as login name or computer name.

You can also verify whether the particular computer has recently communicated with the BigFix infrastructure. To do this, open the Re-Image Wizard from the navigation tree. Ensure that the re-image computer displayed in the list is shown with **BLACK** rather than **GRAY** text. Black text indicates that the computer shows recent communications and that data is up-to-date.

The Reimage Wizard displays available repositories, the images available on those repositories, and the amount of remaining disk space. Click *Re-Image* from the navigation tree and scroll down to the *Choose a Source Image* section.

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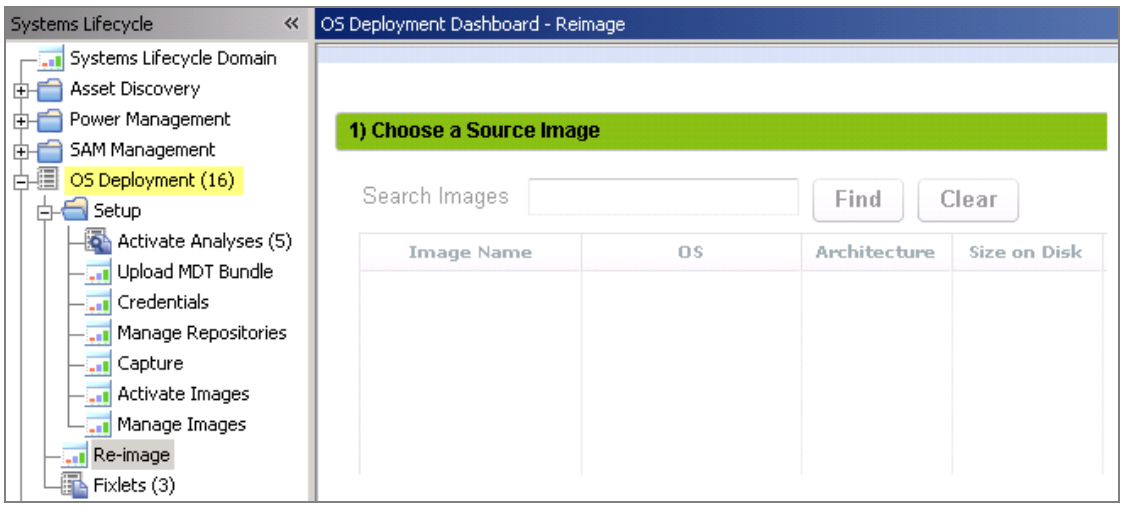


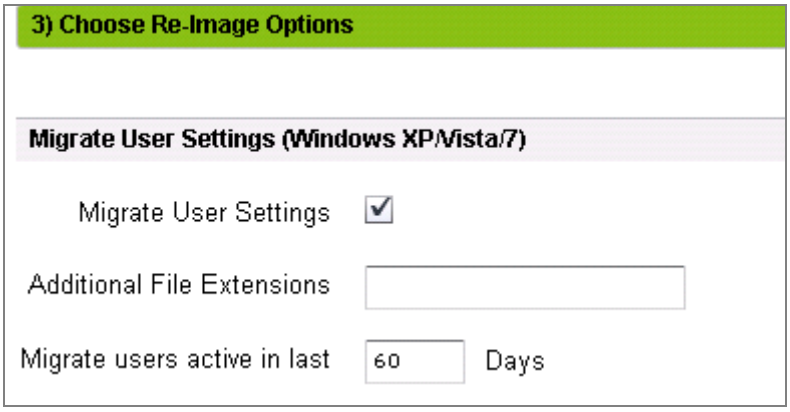
To ensure a smooth transfer of your imaging task across a wide area network, be sure to select a relay in the same network as the target system for maximum bandwidth. You may also select *Nearest Repository*. This feature depends on the target system's ability to identify the relay through which it communicates with the BigFix server. If that relay is also an OS Deployment image repository, it will be selected by using this option.

3. Choose Re-Image Options

The Re-Image Options part of the Re-Image Wizard allows you to set a number of parameters, including migration settings, driver storage paths, network settings, and credentials.

In the Re-Image wizard, scroll down the window to the *Choose Re-Image Options* section. The sub-sections below provide specific details about each component of the Re-Image Options section.

Migrate User Settings



Select whether you're utilizing User State Migration through the *Migrate User Settings* check box. This capability captures multiple user profile directories from the particular system that is about to be reimaged. In most cases, the profile data will stay on the migrated system. However, if the migration is

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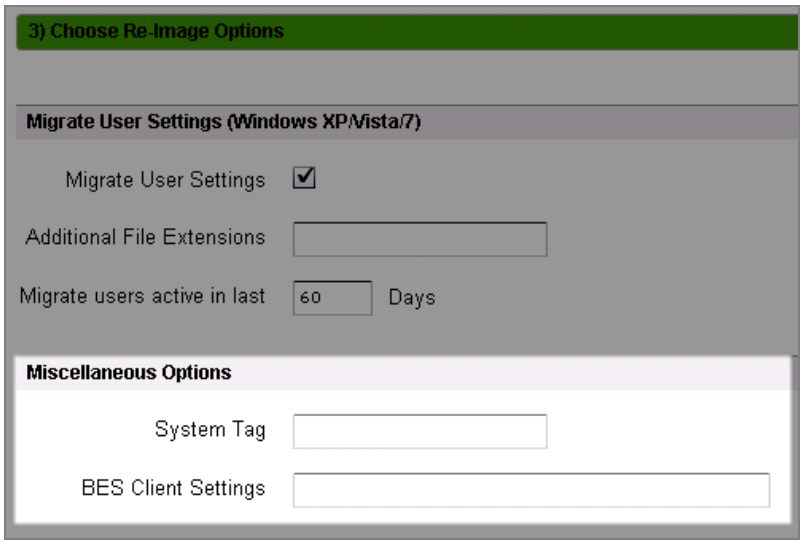
from Windows XP to Windows XP and the system does not have sufficient disk space to duplicate the migrated profiles, the data may overflow to the local relay's BFUSMRepository$ folder, and then be restored to the system after the image task is complete. Use caution to avoid filling up the relay's available storage by performing multiple migrations in those scenarios.

User State Migration behavior and capabilities may vary somewhat based on the original OS, new OS, and amount of storage space.

From / To	Windows XP	Windows 7
Windows XP	Uses local storage space to copy profile; potential disk impact, may use local relay for compressed storage if computer has insufficient space (at cost of network impact).	Uses "hard link" to migrate the profile locally, no disk impact, no network impact.
Windows 7	Uses "hard link" to migrate the profile locally, no disk impact, no network impact.	Uses "hard link" to migrate the profile locally, no disk impact, no network impact.

Miscellaneous Options



The *Miscellaneous Options* section under Re-Image Options allows you to "tag" a system with role-specific baselines (e.g., *Emeryville Office* or *Accounting Department*). You can then install specific software applications that are relevant to those baselines, such as VPN for remote users or financial software for accounting personnel.

> Note: In the case of system migration, pre-existing client settings will be restored in the new OS. This feature allows you to extend with new client settings.

BigFix OS Deployment supports role-specific baselines that allow the administrator to target deployments based on user-defined tags. A baseline can be set up to leverage these tags by looking for their presence and value. For example, if the newly imaged system is tagged with "Emeryville=1" and "Accounting=1", then the baseline to support the Accounting group in the Emeryville office would use the following relevance:

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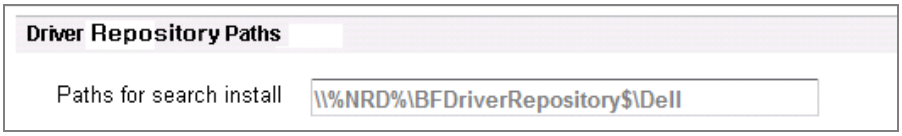
```
value of setting "Location" of client = "Emeryville" AND
value of setting "Group" of client = "Accounting"
```

When systems are migrated from one OS to another, BigFix OS Deployment retains the client settings that were set in the previous OS, so that most settings will not need to be re-entered in this field.

The *System Tag* field allows you to set a flag to indicate to the BigFix Platform that this system has been freshly imaged. This is useful to "top off" baselines and enforce settings.

Driver Paths



For search installs, select driver repository paths containing the appropriate storage and network drivers for this system. Be sure to provide valid driver paths when deploying to different hardware than the original captured image. This will ensure that the system boots properly after imaging is complete.

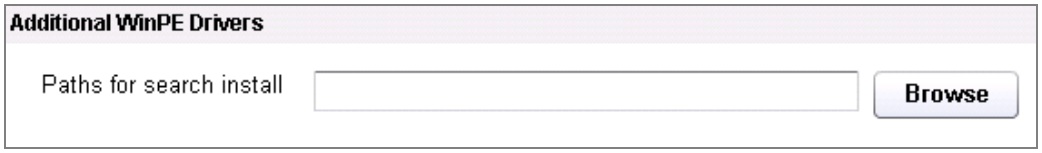
Use the pipe character ("|") as a delimiter to specify multiple network paths. Drivers may also be provided in the gold image or as post-installation software distribution tasks. Always ensure that the correct drivers are provided. If they are not, the reimaged computer could be unable to boot or could be disconnected from the network after the reimage operation.

Use the *%NRD%* variable to indicate that you wish to use the nearest relay's name as part of a driver path. For example, you might enter into the Console the following string: *\\%NRD%\intel*

This will cause reimage targets in multiple locations to automatically deduce the proper relay. For example:

- Machines in Kansas will use this path: \\TopekaRelay\bfdriverrepository$\intel
- Machines in Nebraska will use this path: \\LincolnRelay\bfdriverrepository$\intel

Additional WinPE Drivers (Optional)



During reimage, computers boot into WinPE to start the reimage process. These are mainly network and storage drivers. Computers will bluescreen if they do not have the appropriate WinPE storage drivers in place. If they do not have the appropriate WinPE network drivers, they will be unable to access the appropriate network resources.

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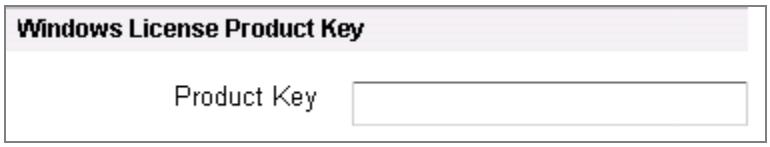
Windows License Product Key

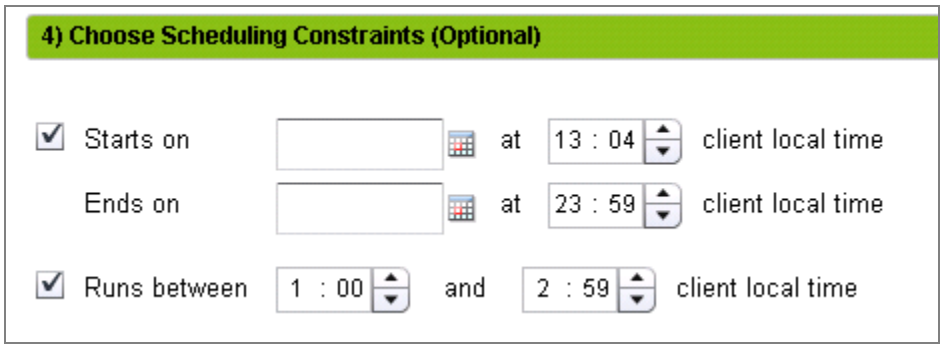


Enter a valid Windows License Key into this field. Note that if you are going to deploy multiple copies of Windows, you will need a volume key.

If you are using Network Credentials, you must set them under the *Network Credentials* section.

4. Schedule Task

You may use this section to schedule reimaging tasks to occur within maintenance windows.



Once you have set all desired re-image options, click *Re-Image Computer* in the bottom right of the window. You may also click *Reset* at any time to revise option settings.

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Part 3

Support

Frequently Asked Questions

The following are a list of Frequently Asked Questions. If you have a question about this product and don't see your question below, see the Global Support section of this document for a list of available resources.

What is a "master image"?

A master image, also referred to as a *gold image,* contains your Common Operating Environment (COE) and can also contain basic drivers.

What is a Common Operating Environment (COE)?

A COE is a base operating system along with the applications that are most common to your organization (e.g. Microsoft Office, Outlook, Adobe Reader, etc).

How long does a typical migration take?

Depending on variables such as the size of the image, amount of data in user profiles, network bandwidth, and hardware, the migration process can take anywhere from a few minutes to a few hours.

How do I know if I have sufficient hardware resources on my machine to migrate to Windows 7?

To access hardware resource requirements for Windows 7, click **HERE** and subscribe to the *Windows 7 Migration* site masthead. Be sure to subscribe *All Computers* to the site. Once you have subscribed to the site, you can access it under the *All Content* domain in the domain panel of the BigFix Console. From *All Content,* click *Sites,* then *External Sites,* and then *Windows 7 Migration.*

What is *User State Migration*?

User State migration (USM) allows you to capture users' information from the system before reimaging its disk, and then restore it to the system after reimaging. This includes information outside of the COE, such as internet favorites, Microsoft Office settings, email settings, and documents stored in the My Documents folder. For more information on preparing for User State Migration, see the related Knowledge Base article on the BigFix support website.

Where can I learn more about role-specific baselines?

BigFix OS Deployment supports role-specific baselines that allow the administrator to target deployments based on user-defined tags. A baseline can be set up to leverage these tags by looking for their presence and value. For example, if the newly imaged system is tagged with "Emeryville=1" and "Accounting=1", then the baseline to support the Accounting group in the Emeryville office would use the following relevance:

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```
value of setting "Location" of client = "Emeryville" AND
value of setting "Group" of client = "Accounting"
```

For more information on creating baselines, see the BigFix Console Operators Guide.

For additional questions about Windows 7, check the Windows 7 FAQs page on the Microsoft website:

Best Practice "Tips"

- In order to deploy Windows 7 images onto many new machines at one time, BigFix recommends that you use a "lab environment" with a dedicated network.
- Provide role-specific applications as BigFix "baselines" targeting BES Client settings. For more information on creating baselines, see the BigFix Console Operators Guide available on the BigFix support website.
- Use *limited rights service accounts* to access network shares. Field image repositories and driver repositories can be set to read-only for most operations. For more information on service accounts and permissions, see the related Knowledge Base article on the BigFix support website.
- The content and maintenance of a master image is a potential subject of debate. Larger "one size fits all" images have less setup with more maintenance, while smaller "stripped down" images have more setup with less maintenance. *BigFix recommends the use of smaller images.* For more information on master image production and maintenance, see the related Knowledge Base article on the BigFix support website.

Global Support

BigFix offers a suite of support options to help optimize your user-experience and success with this product. Here's how it works:

- First, check the BigFix website Documentation page:
- Next, search the BigFix Knowledge Base for applicable articles on your topic:
- Then check the User Forum for discussion threads and community-based support:

If you still can't find the answer you need, contact BigFix's support team for technical assistance:

- Phone/US: 866 752-6208 (United States)
- Phone/International: 661 367-2202 (International)
- Email: enterprisesupport@bigfix.com

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