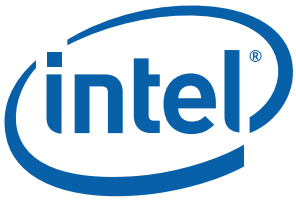


Intel® Integrator Toolkit

Quick Start Guide

Version 3.3.0

Preface

This Quick Start Guide gives an overview of the Intel® Integrator Toolkit and summarizes the steps to take when using the basic features of the tool. Refer to the following documents for additional information:

- **Readme.RTF**—Provides both basic and last minute information about the current version of the product. The readme can be found in the Intel Integrator Toolkit package.
- **iToolkit.CHM**—Provides detailed information to help the user complete a task. This HTML help file requires a Microsoft Windows* operating system for viewing and includes system messages, troubleshooting tips, and methods to implement automated processing. The help file can be viewed by selecting the Help button from the command line in the Windows-based interface or Help from the DOS command line.

An interactive training tool (under the Resources tab) for the toolkit is available at the following site: http://www.intel.com/design/motherbd/software/itk/resources.htm

Intended Audience

The information given in the Quick Start Guide is intended for experienced system integrators.

Intended Use of the Toolkit

The Intel Integrator Toolkit is a utility used for setting up custom system settings and then replicating these settings to other systems in a manufacturing environment. It also allows you to customize a BIOS splash screen where you can display a badge of your choice.

Conventions

The following conventions are used in the Quick Start Guide:

CAUTION

Cautions warn the user about how to prevent damage to hardware or loss of data.

NOTE

Notes call attention to important information.

Glossary

Term	Description
Batch file	A file that contains instructions to run on the system. This is then used to automatically install selected components to a system.
Modified BIOS capsule	The resulting BIOS file when flex module changes are made.
DOS	Disk operating system
Flex BIOS	A BIOS architecture that allows customization of the functional modules included with the BIOS, such as splash screen customization, network boot support, and languages. This architecture allows you to maximize the use of the system's available flash memory space to suit your needs.
Flex module	Includes language packs, logo module, and optional BIOS file settings which can't be modified in INI files.
PnP	Plug and Play
SMBIOS	System Management BIOS
Windows* PE	Microsoft Windows* Preinstallation Environment. A version of the operating system that can be booted from various media and does not need to be installed on the system hard disk. It is intended to provide an environment in which manufacturers can customize their systems (update BIOS, change system settings, ad perform diagnostics) prior to the installation of an operating system to the hard disk.
WMI	Windows Management Instrumentation. An operating system interface that allows system drivers to report information that can be retrieved by applications.
Workspace	A workspace is a reference environment where you can modify system settings, flex modules, and create INI and BIO files.

File Types

File Extension	File Type	Use
.bio	BIOS file	The BIOS file(s) contains the BIOS splash screen. For Flex BIOSs, the customized BIOS file also contains Flex Modules and splash screen.
.ini	Intel Integrator Toolkit configuration file	The INI configuration file is the output file from the Microsoft Windows*- and DOS*-based applications and is used as the input file for the DOS-based toolkit application. This file is used to install the configuration settings for BIOS settings and SMBIOS on the target systems.
.itk	Intel BIOS configuration file	Each BIOS configuration file is applicable only to a particular BIOS version for an Intel® Desktop Board product. The BIOS configuration file is the required input for the workspace, the starting point for the Windows-based application.
.itw	Intel Integrator Toolkit Framework Edition workspace	Workspace for the Intel Integrator Toolkit Framework Edition. In this interface of the toolkit, the workspace file is your working environment. It contains your current settings for the BIOS you have selected. The workspace allows you to generate INI and BIO files.
.txt	Text	A report that presents all of the configuration settings contained in the workspace in a text file. It also contains target system report when the Generate a Target System Report command is used in the DOS-based tool.

Contents

Overview

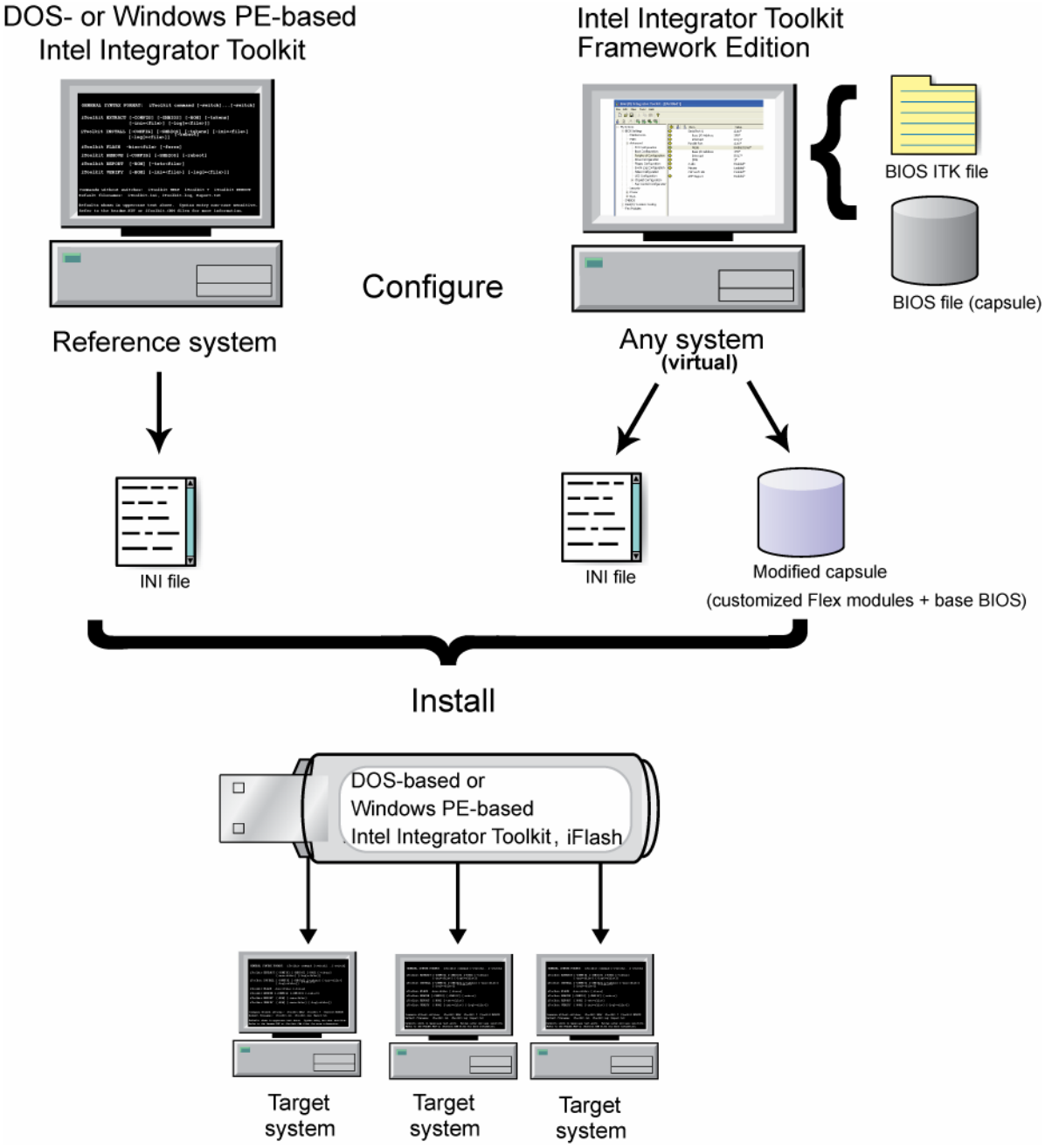
The Intel Integrator Toolkit is used to customize system settings and then replicate these settings in a manufacturing environment. The toolkit comes with different interfaces to accomplish these tasks. The DOS*- and Microsoft Windows* PE-based interfaces can be used to both configure and install the customized system settings onto target systems. The Windows-based interface (Intel Integrator Toolkit Framework Edition) can be used as a virtual system builder to customize system settings; you will have to use either the DOS- or Windows PE-based interface of the toolkit to install these settings onto target systems.

The table below shows the capabilities of each interface:

Task	Intel® Desktop Board	Intel Integrator Toolkit Interface
Configure system settings and/or install customized settings	Intel® 945 or higher chipset	DOS[1]-based interface to configure and then install configured settings onto target systems.
		Microsoft Windows* PE-based interface to configure and then install configured settings onto target systems.
Configure system settings	Intel 945 or higher chipset	Intel Integrator Toolkit Framework Edition to configure virtually (use the DOS- or Windows PE-based interface to install configured settings onto target systems).

[1] – Both Microsoft MS-DOS* and ROM-DOS* have been validated with Intel Integrator Toolkit 3.2.

The diagrams below show the function the different interfaces of the Intel Integrator Toolkit perform in the process of replicating system settings onto target systems.



Conceptual Overview of the Intel® Integrator Toolkit System Configuration Process

Configuring Settings

This chapter gives general information about configuring system settings using the different features of the tool and preparing files to install on a target system. You may configure system setting using any of the Intel Integrator Toolkit interfaces. Refer to the *iToolkit.chm* help file for more detailed information.

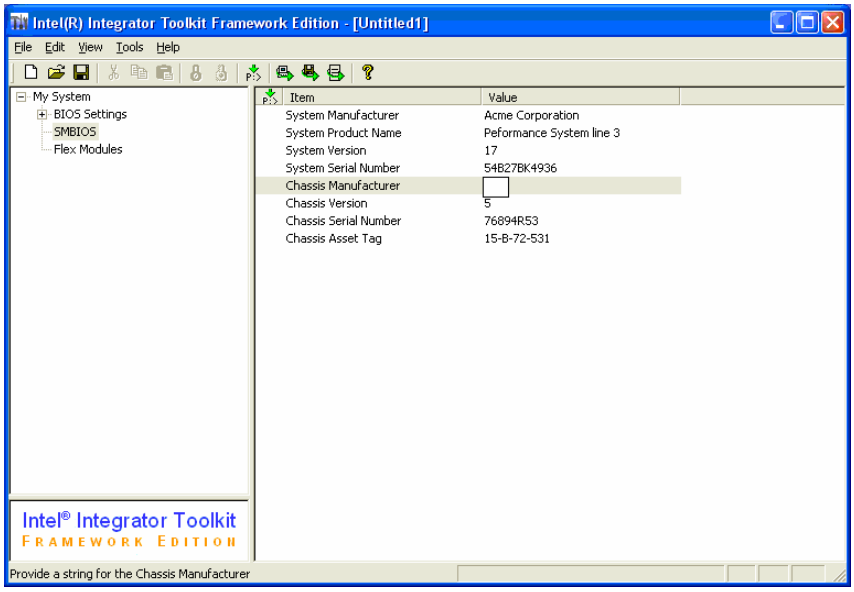
This chapter consists of two main sections:

- Configure Using the Microsoft Windows-based Interface
- Configure Using the DOS- or Microsoft Windows Preinstallation Environment (Windows PE)-based Interface

Configure Using the Microsoft Windows*-based Interface

The Intel Integrator Toolkit Framework Edition acts as virtual system builder, allowing you to configure the system's BIOS, SMBIOS, and Flex Module settings in a GUI environment, and create a reference-free INI file. This interface requires an Intel Integrator Toolkit-enabled BIOS (an .itk file in the BIOS package). If the Flex Modules in the BIOS are modified, the interface creates a modified BIOS capsule also.

This Windows-based interface can be used in place of the extract function in the DOS- or Windows PE-based interface of the toolkit. However, the DOS- or Windows PE-based interface is required to install the INI file settings onto target systems.



The left-hand pane contains the hierarchical tree of BIOS Settings, SMBIOS, and Flex Modules nodes and leafs. The right-hand pane displays the configurable settings in rows for the node selected in the left-hand pane.

The workspace contains a toolkit toolbar with icons that let you lock or hide BIOS settings, if your BIOS allows; prompt the user for SMBIOS settings; generate INI files; and generate reports. Most of these commands are also available on the main menu; Generate INI and Generate BIOS are the two exceptions and are combined under Generate Installation Files on the main menu. You can set default directories for the files the toolkit uses. The table below shows the seven toolkit icons and their descriptions:

Icon	Name	Description
	Lock BIOS Setting(s)	Prevents the end-user from editing specified BIOS settings.
	Hide BIOS Setting(s)	Hides specified BIOS settings from the end-user.
	Prompt for SMBIOS Value(s)	Specifies SMBIOS settings that the end-user will be prompted to enter a value.
	Generate Installation Files	Generates the following installation files: • INI file: consisting of the BIOS settings and SMBIOS values in the current workspace. • Custom BIOS Update: an executable file that contains the modified BIOS settings. • After Flex Module settings are configured, generates a modified BIOS file that includes these changes.
	Generate Report	Generates a report consisting of the BIOS settings, SMBIOS values, and Flex modules in the current workspace.
	Generate Media	After BIOS, SMBIOS, and/or Flex modules are configured, generates media containing settings that will be installed on target systems. Used with the DOS-based interface.

Prepare Work Environment

To get started, you will need to first download the correct BIOS for your Intel® Desktop Board.

Download BIOS Update

To download a BIOS update:

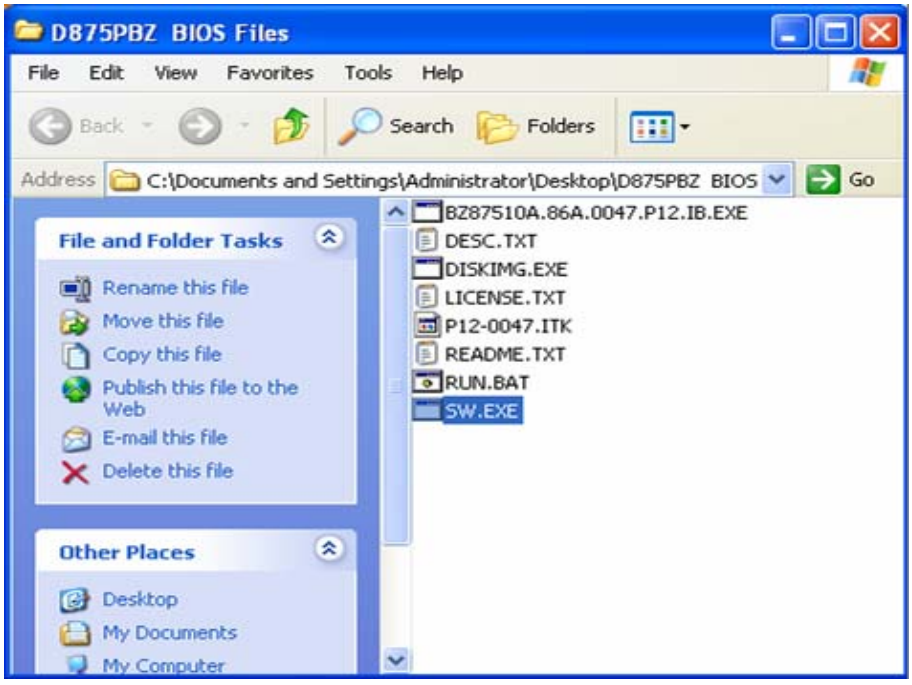
1. Go to http://www.intel.com/support/motherboards/desktop/ .
2. Select your Intel Desktop Board.
3. Select “Latest BIOS and driver updates.”
4. Select your operating system.
5. Click BIOS Update.

6. From the given choices, download the Iflash BIOS update with the following extension: **XXXX.IB.ZIP**.
7. Double click the **SW.EXE** file. The following files will be saved to your system:
   - Xxxx.xxxx.exe
   - Xxxxxxxx.dll
   - Xxxxxxxxx.itk

The .itk file is included in the BIOS download (Flash only).

NOTE

If only the BIOS.EXE file is displayed, double click it to extract all the files. Look for the SW.EXE file; double click it to extract its contents.



Create a Workspace

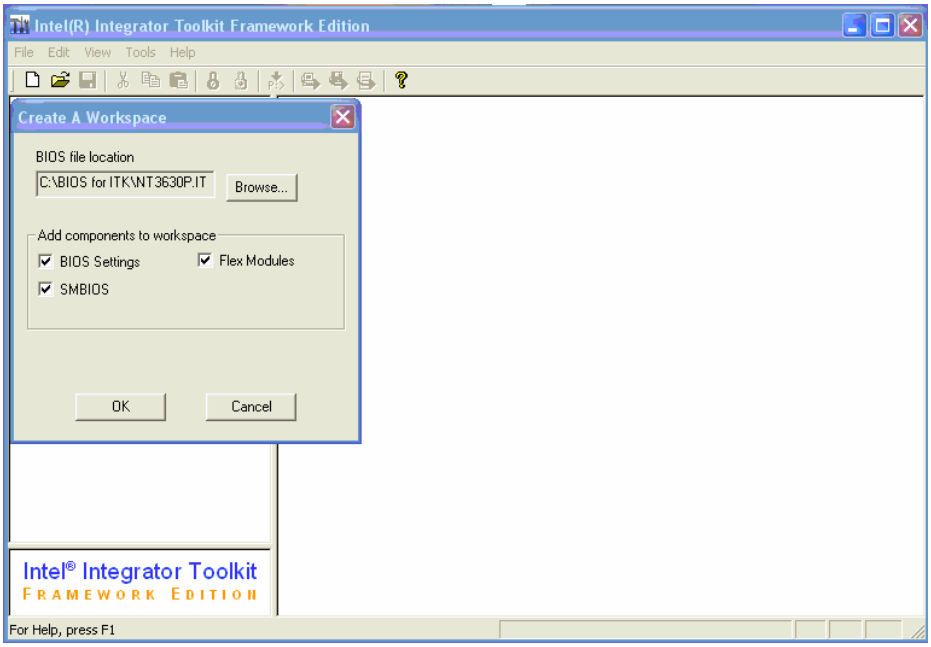
A workspace is an environment where you can make changes to system settings and create an INI file.

To create a workspace on your system:

1. Launch the Intel Integrator Toolkit Framework Edition.
2. Click **New** on the standard toolbar or on the **File** menu, click **New Workspace**.
3. **Browse** to locate the folder where the Integrator Toolkit (.itk) you want to open is located.
4. In the **Add Components to Workspace** pane, unmark the check boxes for those items you do not want to include in this workspace.
5. Click **OK**.

NOTE

For the .itk file to update Flex Modules (such as the splash screen), the .itk and .bio files must both be located in the same directory you are referencing.



Define BIOS Settings

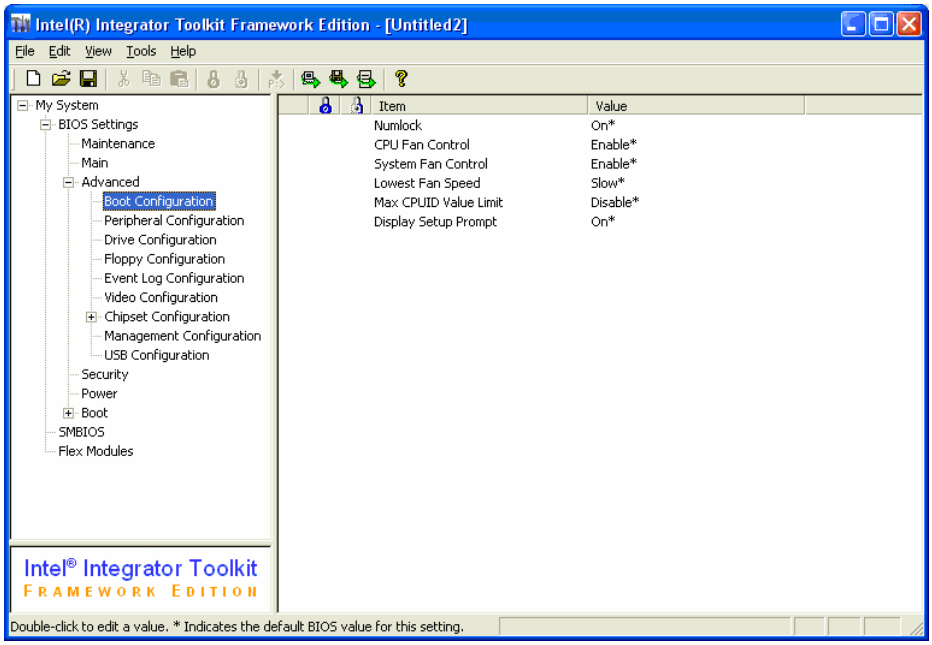
CAUTION

Incorrect system BIOS settings may cause a system to malfunction, fail to boot, or operate with decreased performance. Incorrect BIOS settings may affect system stability and functionality. Customization of system BIOS settings is intended for use only by professional PC system integrators.

In the BIOS Settings node, you can replace the original factory default settings for any specified BIOS value.

To define BIOS settings:

1. In the left pane of the main window, expand the **BIOS Settings** node until you see the component you wish to configure.
2. In the left pane, select the component you wish to configure. The configurable items will appear in the right pane.
3. In the right pane, select the item you wish to configure.
4. Double click in the **Value** column to edit the value for that item.



Notes:

- The above screen shows only a sample BIOS Settings node. Any content in the node may vary significantly between BIOS files for specific Intel Desktop Board products.
- The asterisk mark (*) indicates the default BIOS value for a setting.

Lock or Hide BIOS Settings

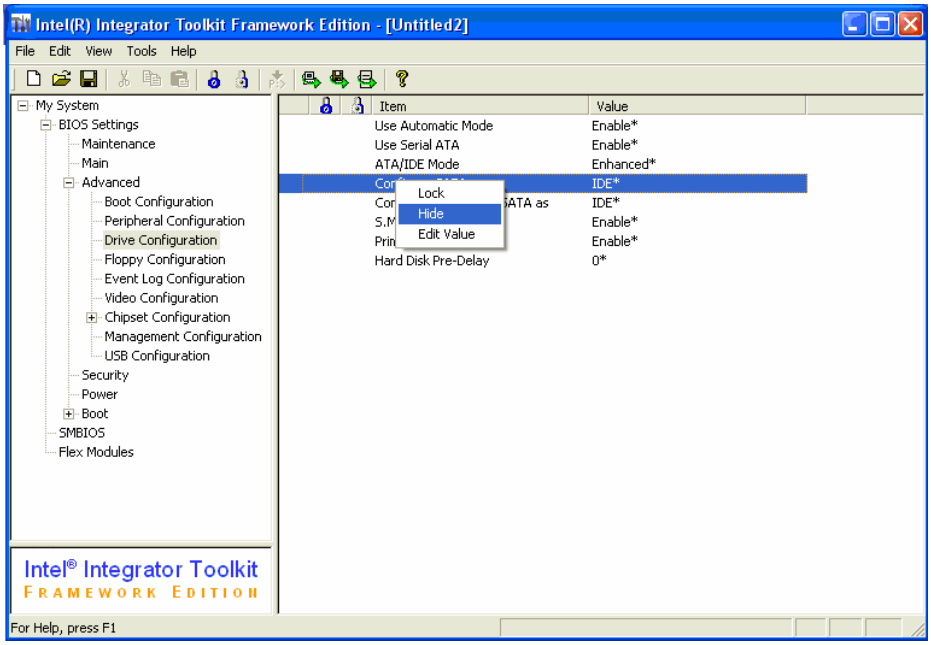
There may be times when you will want the end-user from not accessing or changing BIOS settings. The lock or hide features are the two choices for doing this:

- **Locking BIOS settings:** The lock option, in the pop-up menu, allows the end-user to see the BIOS setting, but not modify it. To prevent the end-user from editing a BIOS setting, right-click in that item's row and click the Lock option in the pop-up menu or select the item's row and click the **Lock BIOS Setting(s)**  icon in the toolkit toolbar.
- **Hiding BIOS settings:** The hide option, in the pop-up menu, prevents the end-user from seeing or modifying the BIOS setting. To hide specified BIOS settings from the end-user, right-click in that item's row and click the Hide option in the pop-up menu or select the item's row and click the **Hide BIOS Setting(s)**  icon in the toolkit toolbar.

NOTES

BIOS settings can be either locked or hidden, but not both. If a setting is hidden, it is also locked.

Only a limited number of settings can be locked or hidden if you are using the Windows-based Integrator Toolkit interface. The number will vary depending on the BIOS being used.



Note:

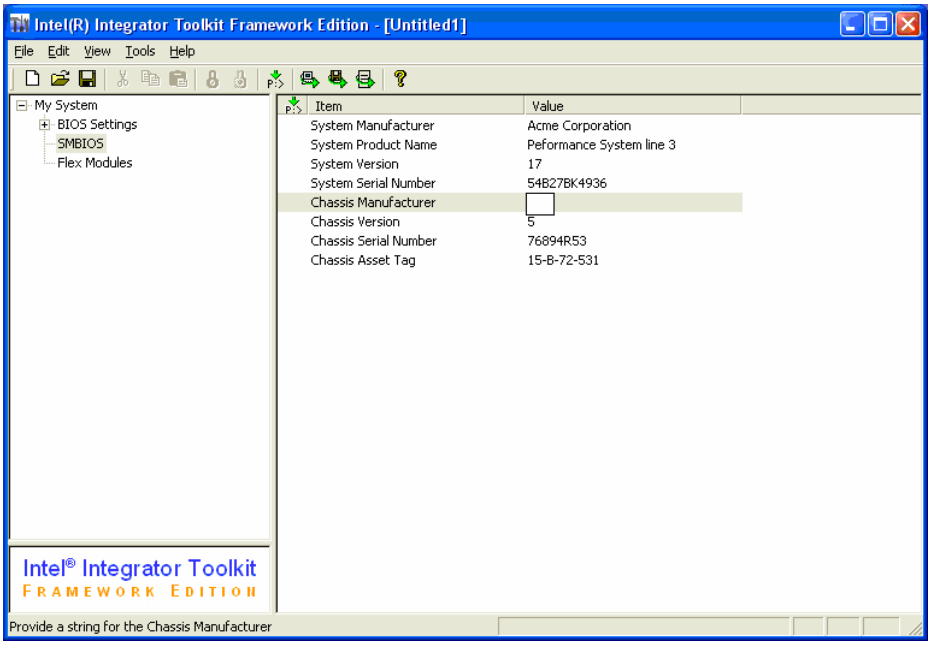
The above screen shows only a sample BIOS Settings node. Any content in the node may vary significantly between BIOS files for specific Intel desktop board products.

Define SMBIOS Settings

In the SMBIOS node, you can enter values or opt to display a prompt at install time to enter descriptive information about the system and chassis. For SMBIOS information, go to http://www.dmtf.org/standards/smbios/ .

To define SMBIOS settings:

1. In the left pane of the main window, expand nodes until you see the **SMBIOS** node. The configurable items for the SMBIOS component will appear in the right pane.
2. In the right pane, select the item you wish to configure.
3. Double click in the **Value** column to edit the value for that item.



4. To prompt for input of SMBIOS values during the installation process, right click on that item's row and click **Prompt** from the pop-up menu or select the item's row and click the **Prompt for SMBIOS Values** icon on the toolkit toolbar.

Note:

The above screen shows only sample SMBIOS content.

Select Flex Modules

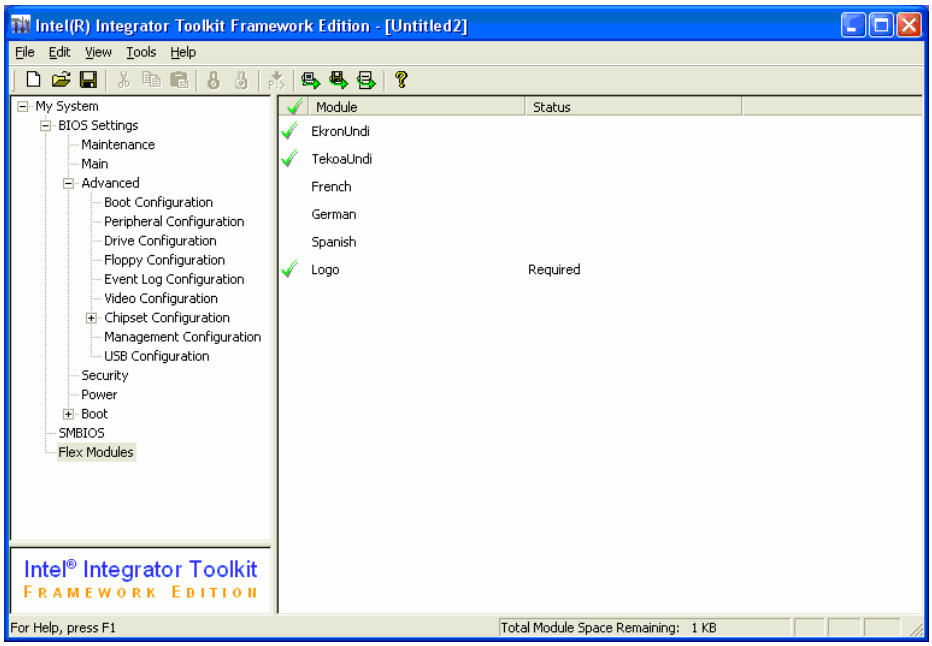
The Flex Module node includes optional language packs and may include other optional modules. The toolkit also provides a customizable BIOS splash screen as a required Flex Module with an optional badge feature.

NOTE

If you wish to change the BIOS language, you must make sure that the language you want is one of the languages listed in the Flex Module node.

To define flex module settings:

1. In the left pane of the main window, expand the nodes until you see the **Flex Modules** node.
2. In the left pane, click the **Flex Modules** node. In the right pane, select the module of the item you wish to configure.
3. Right click the item to edit the content of that cell.
4. After you complete all Flex Module setting changes, click the **Generate Installation Files** icon on the toolkit toolbar to generate a new .bio file.



Note:

The above screen shows only a sample of Flex Module content. The Flex Modules available may vary significantly between BIOS files for specific Intel desktop board products.

Customize a Splash Screen

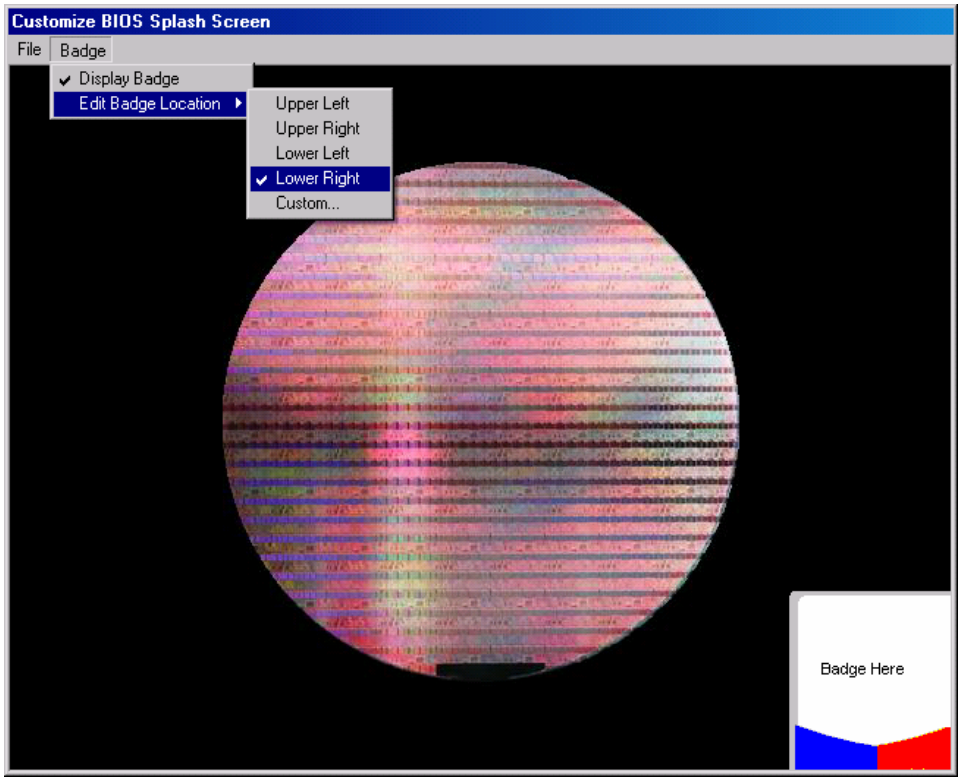
NOTE

The splash screen can be set using a bitmap or baseline JPEG image. Only baseline JPEG images are supported; all other types of JPEG images, such as progressive JPEGs are not supported.

The Flex Module includes a feature where you can customize the default BIOS splash screen with your own full-color graphics file.

To customize a splash screen:

1. In the left pane of the main window, select the **Flex Modules** node.
2. Right-click the **Logo** component.
3. In the **Customize BIOS Splash Screen** window, go to **File → Open Graphics File…**
4. Browse to locate the graphics file you wish to include.
5. Click **Open**.
6. To display the badge and choose a location on the screen, click **File → Open Graphics File** from the Customize BIOS Splash Screen window. Then select **Edit Badge Location** to place the badge in a location of your choice on the screen.
7. To save the new splash screen file, go to **File → Update BIOS File**. To exit without saving the graphics file to the BIOS file, go to **File → Exit**.



Generate Installation Files

The files generated in this dialogue are those you will use to install the configured system settings onto target systems using either the DOS-based or Windows PE-based Intel Integrator Toolkit. The three files that can be generated from this feature are a **BIO File**, **Custom BIOS Update**, and **INI File**.

Generate a BIO File

To generate a BIO file:

1. After configuring settings, select **Generate Installation Files...** from the **File** menu or click the **Generate Installation Files** icon on the toolkit toolbar.
2. Mark the check boxes for those items you want to include in this BIOS file.
3. Click **Browse...** to locate and open the desired file on your hard drive.
4. In the **File name** field, type a name for the BIOS file.
5. Click **OK**.

Generate Custom BIOS Update

To generate an executable Custom BIOS Update:

1. After configuring settings, select **Generate Installation Files...** from the **File** menu or click the **Generate Installation Files** icon on the toolkit toolbar.
2. Mark the check boxes for those items you want to include in this BIOS update.
3. Click **Browse...** to locate and open the desired file on your hard drive (for example, C:\temp\cb.exe).
4. In the **File name** field, type a name for the BIOS update.
5. Click **OK**.

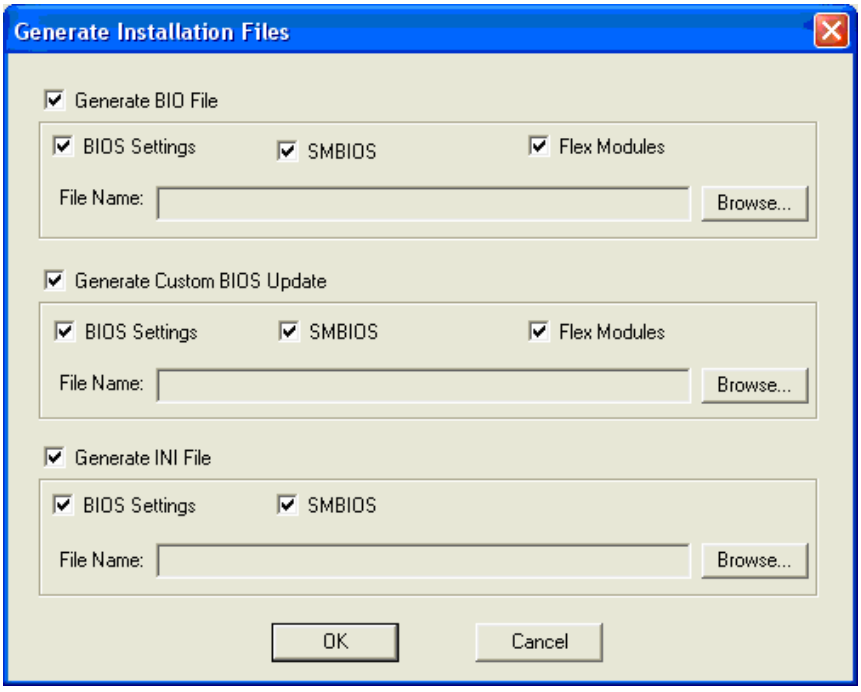
To run the Custom BIOS Update:

1. Locate the file that was just saved using the **Generate Installation Files/Generate Custom BIOS Update** (in this example C:\temp\cb.exe).
2. Double click the **.exe** file.
3. Respond to the prompts as they appear.
4. Click **Finish**.

Generate an INI File

To generate an INI file:

1. After configuring settings, select **Generate Installation Files...** from the **File** menu or click the **Generate Installation Files** icon on the toolkit toolbar.
2. Mark the check boxes for those items you want to include in this INI file.
3. Click **Browse...** to locate and open the desired file on your hard drive.
4. In the **File name** field, type a name for the INI file.
5. Click **OK**.



Generate Media

The Generate Media feature generates and copies all files to a specified location, such as a portable USB drive, along with a batch file to execute those files using the DOS-based installation tool.

NOTES

The Generate Media feature applies only to DOS or itoolkit.exe related files.

The instructions below assume that you will be using a portable USB drive as the output media for the files. If you use a floppy for generating media, follow the steps in the Generate Media topic in the iToolkit.chm help file.

To generate media:

1. Click the **Generate Media** icon on the toolkit toolbar.
2. In the **Files** tab, browse to the destination folder where the files will output (a portable USB drive).
3. In the **Generate Batch File** pane, mark the **Create Batch File** check box to create a batch file.

NOTE

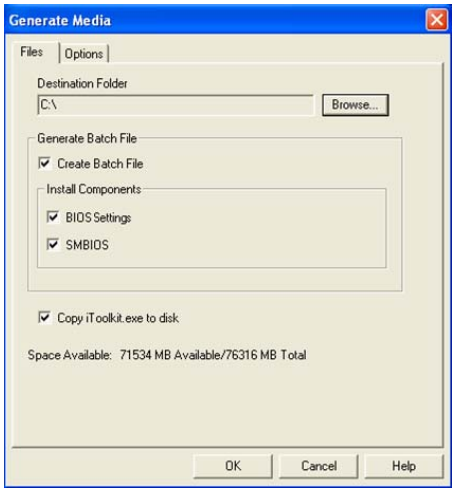
Use this feature when you will use an automated process to install customized settings to a target system. The Generate Batch File will generate an Autoexe.BAT file for this purpose.

4. In the **Install Components** subpane, mark the check boxes for the components you wish to copy to the target location.

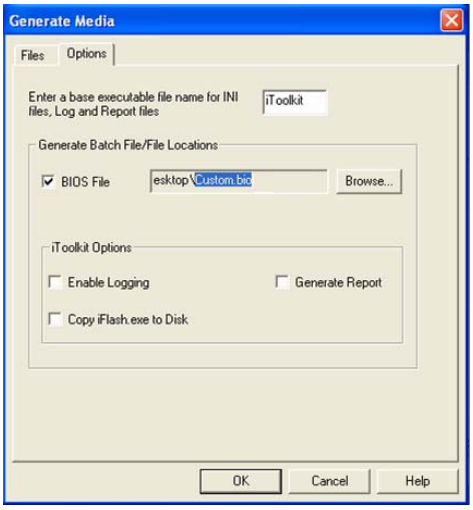
NOTE

Flex Modules, such as splash screen, are updated in the Options tab, covered in step 6.

5. To copy the DOS toolkit executable, mark the **Copy iToolkit.exe to disk** check box.

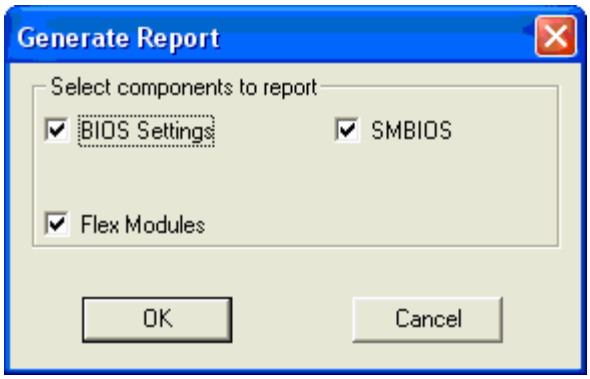


6. In the **Options** tab, enter a base executable file name, which will apply to the INI, log, and report files.
7. In the **Generate Batch File / File Locations** pane, mark the BIOS File check box to include the existing BIOS file.
8. If you made changes to the Flex Modules, for example the splash screen, browse to select the BIOS that you created previously (see Customize a Splash Screen in this document).
9. In the **iToolkit Options** subpane, mark the options you wish to include in the resulting iToolkit.exe file.
10. Click **OK**.



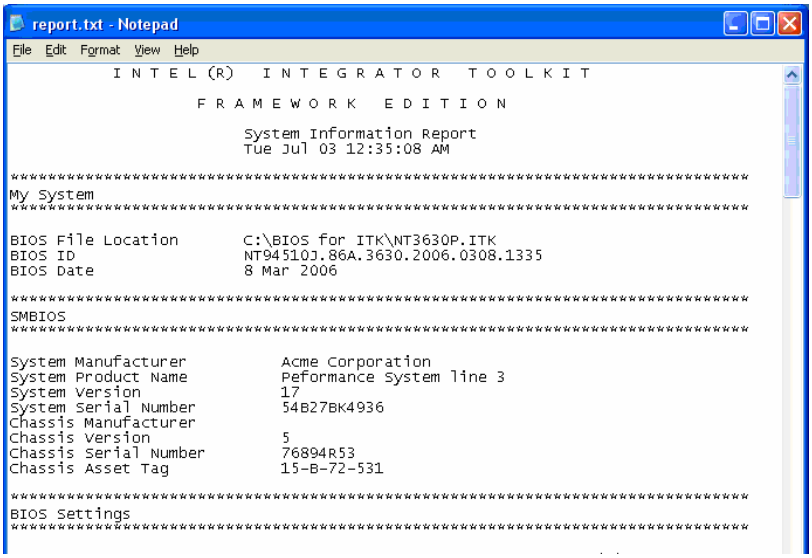
Generate a Report

You can generate a report of your system's settings in a formatted text file.



To generate a report:

1. After defining a workspace, click the Generate Report icon on the toolkit toolbar or on the File menu, click **Generate Report...**
2. In the **Select Components to Report** pane, mark the check boxes for those items you want to include in this report.
3. Click **OK**.
4. In the **Save As** dialog box, if you want to save the report in a different folder, locate and open the desired folder.
5. In the File name field, type a name for the report.
6. Click **Save**.



Install Configured Settings onto Target Systems

For information about installing the customized toolkit configurations onto the target system(s), refer to the section titled Manufacturing Environment in this document.

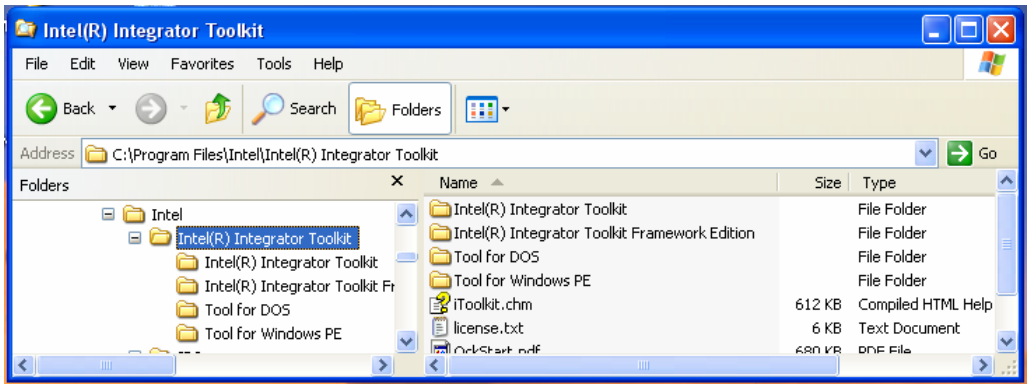
Configure Using the DOS- or Microsoft Windows Preinstallation Environment (Windows PE)-based Interface

The DOS- and Windows PE-based interfaces of the Intel Integrator Toolkit use a reference system to read system settings, customize them, and then create an INI file.

The following command line is used in this section:

EXTRACT—Retrieves customized BIOS, SMBIOS, as well as BOM information (in the DOS-based Intel Integrator Tool only) from a reference system. Editable tokenized settings let you extract all CMOS settings and then insert only updated settings into the INI file.

When you download the Intel Integrator Toolkit to your hard drive, it will create a folder called Intel(R) Integrator Toolkit. You will find the DOS-based interface in the **Tool for DOS** subfolder, and the Windows PE-based interface in the **Tool for Windows PE** subfolder.



Double click the folder of your choice to start working with the tool.

[1] – Both Microsoft MS-DOS* and ROM-DOS* have been validated with Intel Integrator Toolkit 3.2.

NOTES

The Windows PE image used in conjunction with this application must be built using the Microsoft Vista, Microsoft Windows XP Professional Edition with Service Pack 2, or Microsoft Windows Server 2003. Microsoft Windows PE images based on other versions of Microsoft Windows XP are not supported.*

In the Windows PE-based interface, neither the PnP nor WMI options are required to run the Intel Integrator Toolkit installer.

Prepare Work Environment

NOTE

For information about creating bootable media (floppy disk, USB flash drive, CD-ROM), go to the following Intel website:
http://www.intel.com/design/motherbd/standardbios.htm

NOTE

Windows PE files will have a W at the end of the file name; for example, itoolkitW.exe.

In this section, you will:

- Prepare a floppy or other media for reference system extraction
- Configure the reference system and then extract desired customized settings
- Prepare a bootable media with the finalized INI file

Prepare an Extraction Disk

Run the iToolkit.exe to extract toolkit files to a directory of your choice. Then create a bootable media containing the following files:

Intel Integrator Toolkit	Required Files	Optional Files
DOS-based	*Itoolkit.exe* — executable file for Intel Integrator Toolkit *MSDOS* bootable* files — includes user added files such as Microsoft's *Command.com*, *Msdos.sys,* and *Io.sys*	*Iflash* and *BIOS* files — user added files, if needed *Editor* — includes editors such as *Edit.com* with *Qbasic.exe*
Windows PE-based	*ItoolkitW.exe* *ItoolkitWRes.dll* *ItoolkitW.dll* *EfiVar.dll* *Variable.sys* *Invoker.dll* *Invoker.sys*	BIOS files — user added files, if needed

Define BIOS Settings

Once you have built the reference system and, if needed, flashed the reference system's BIOS to the desired version, you may want to define BIOS settings if:

- You want to automatically configure all BIOS settings
- You have access to a reference system using the same BIOS version as those being configured
- You would rather create a configuration using F2 BIOS Setup than the Windows-based configuration tool
- You have already set up a reference system with the BIOS settings that you want

To define BIOS settings:

1. Use BIOS F2 Setup to configure the BIOS settings on your reference system.
2. Boot to DOS or Windows PE on your reference system.
3. Run ***itoolkit[w] extract –config –ini=xxx.ini***.

Define BIOS Settings Using Tokens

NOTE

The token extract and install feature is only valid for Intel desktop boards that have an Intel 945 or higher chipset.

Token settings provide a method for extracting BIOS settings from a reference system into an INI file with plain text. Once these settings are extracted to an INI file, they can be individually edited in the INI file. Each extracted token setting can be cut and pasted to other INI files. This allows the user freedom to only set CMOS settings that are needed. The advantage to using tokens is that it is BIOS independent and can be used on any system. The tokenized settings can then be installed onto any supported target system.

You may want to use tokens to define BIOS settings if:

- You would like your INI file to contain individually text editable BIOS settings
- You only need (or want) to program those BIOS settings explicitly identified in your INI file
- You are not able (or do not want) to use the Windows-based Intel Integrator Toolkit configuration tool
- You do not have access to a .itk file for your system BIOS

To define BIOS settings using tokens:

1. Boot to DOS or Windows PE on the reference or target system.
2. Run ***itoolkit[w] extract –tokens –ini=xxx.ini***.
3. Edit ***xxx.ini***:
   - Modify tokenized settings that you would like to program
   - Delete tokenized settings that you want to leave set to their current settings
   - Set the lock and hide properties (to true or false) for settings that you do or do not want hidden (this can be done only in Windows PE)

The following provides examples of command lines for the token extract operation:

- **ITOOLKIT EXTRACT[W] -tokens [-INI=<INI file name>]**
  Extracts just the tokenized settings to the specified or default INI file.
- **ITOOLKIT EXTRACT[W] -tokens <other component flags> [-INI=<INI file name>]**
  Extracts the tokenized settings to the specified or default INI file, as well as the other components specified.

For more detailed information, go to the Token Extract and Install Component topic in the *iToolkit.chm* help file.

Define SMBIOS Settings

You may want to define SMBIOS settings if:

- You are not able (or don't want) to use the Windows-based Integrator Toolkit configuration tool
- You want to replicate the SMBIOS strings from a reference system to one or more target systems
- You do not have access to a .itk file for your system BIOS

To define SMBIOS settings:

1. Boot to either DOS or Windows PE on your reference or target system.
2. Run ***itoolkit[w] extract –smbios –ini=xxx.ini***.
3. Edit xxx.INI:
   - Modify SMBIOS strings that you would like to program
   - Delete SMBIOS strings that you want to leave set to their current values
   - Set SMBIOS strings that you would like cleared to an empty value, such as "***SystemManufacturer=***"

Customize the INI File

To prompt for input of SMBIOS values during the installation process, enter **$PROMPT$**, and the prompt text string after appropriate keyword within the SMBIOS section of the INI file. For example:
SystemSerialNum=$PROMPT$, "Enter Serial Number:"

Prepare the Installation Disk

NOTE

For information about BIOS updates and creating bootable media, go to the following Intel website: http://www.intel.com/design/motherbd/standardbios.htm

Create a bootable disk (bootable USB flash drive or floppy disk) as required for your specific manufacturing process containing the following files:

Intel Integrator Toolkit Interface	Required Files	Configured Files	Optional Files
Windows PE-based	*ItoolkitW.exe* *ItoolkitWRes.dll* *ItoolkitW.dll* *EfiVar.dll* *Variable.sys* *Invoker.dll* *Invoker.sys*	*iToolkit.ini* — the file generated after system settings are configured using any of the Intel Integrator Toolkit interfaces. *Modified BIOS capsule* —generated after the Intel Integrator Toolkit Framework Edition configuration tool is used. It includes the base BIOS and customized flex modules.	
DOS-based	*iToolkit.exe*	*iToolkit.ini* — the file generated after system settings are configured using any of the Intel Integrator Toolkit interfaces. *Modified BIOS capsule* — generated after the Intel Integrator Toolkit Framework Edition configuration tools is used. It includes the base BIOS and customized flex modules.	*Iflash*

Customize a Splash Screen (Windows PE only)

NOTE

The splash screen can be set using a bitmap or baseline JPEG image. Only baseline JPEG images are supported; all other types of JPEG images, such as progressive JPEGs are not supported.

You may want to customize a BIOS splash screen if:

- You want to dynamically select a .jpg file at install time
- You don't have any need to run the Intel Integrator Toolkit Framework Edition configuration tool

To install a custom BIOS splash screen:

1. Obtain a .bio file for your Intel desktop board.
2. Boot to Windows PE.

Run ***itoolkitw flash –bio=xxx.bio –splash=zzz.jpg*** (where zzz.jpg is your image file).

Manufacturing Environment

Now that the configuration of system settings is complete, you can install these settings onto target systems in the manufacturing environment.

The following command lines are used in this section:

- **FLASH**—Updates the system BIOS version when necessary.
- **INSTALL**—Replicates customized BIOS or tokenized settings in the manufacturing environment. Editable tokenized settings also let you install only the CMOS settings that are needed on target systems.
- **REMOVE**—Removes BIOS and SMBIOS settings from a target system and returns the system's configurations to their original state.
- **VERIFY (DOS-based interface only)**—Verifies BOM information to make sure the target system configuration matches the reference system to increase build quality.
- **REPORT (DOS-based interface only)**—Generates a BOM report file for viewing or printing.

In this section, you will:

- Make sure BIOS version of target system matches that of reference system. Flash the BIOS if necessary
- Install the customized settings onto target system(s) by booting to the bootable media

Install Configured Settings onto Target Systems

The ***-install*** switch replicates customized BIOS and tokenized settings in the manufacturing environment. Editable tokenized settings also let you install only the CMOS settings that are needed on target system(s).

If you want to simply install customized settings:

1. Boot the target system to the installation disk (portable USB or floppy). If necessary, flash the BIOS.
2. Enter the command: ***itoolkit[w] install*** or ***itoolkit install.*** This command installs the BIOS and SMBIOS settings on the target system using data from the *iToolkit.ini* file.

If you use automated procedures to install customized settings:

1. The *autoexec.bat* file might execute the following example tasks:
   - Flash BIOS to correct version, if necessary:
     itoolkit[w] flash –bio=file.bio
   - Set DATE and TIME

- Execute additional Integrator Toolkit commands:
  itoolkit[w] install

2. For more information on using automatic processes, go to the Sample.ZIP topic under the Examples section in the *iToolkit.chm* help file.

Install Tokenized Settings

NOTE

When using both config and token features, config features will be installed first, but the token features will overwrite any corresponding config features.

To install to a target system only the tokenized settings found in the specified or default INI file, use the command:
itoolkit[w] install –tokens [ini=<ini file name>]

Other Command Features

Remove Customized Settings from Target System

To remove BIOS and SMBIOS information from the target system:

1. Use the command: ***itoolkit remove***.
2. The target system's settings are returned to factory defaults.

Verify Target System BOM against Reference System (DOS only)

To verify the target system BOM against the reference system:

1. Use the command: ***itoolkit verify –log=filenam1.log***.
2. If the configuration of the target system does not match the configuration of the reference system, warnings will appear.
3. You may also note differences between the target and reference system as captured in the logged file called "filenam1".

Generate a Target System Report (DOS only)

To prepare a BOM report on the target system:

1. Use the command: ***itoolkit report***
2. A *Report.TXT* file is created during system report generation.
3. View, print, and/or edit *Report.TXT* as needed.

Command Summaries

See Command Line Options in the *iToolkit.chm* help file for command naming parameters and usage instructions.

Windows PE Commands

```
GENERAL SYNTAX FORMAT: iToolkitW command [-switch]...[-switch]

   iToolkitW EXTRACT [-CONFIG] [-SMBIOS] [-tokens] [-ini=<file>]
             [-log[=<file>]]

   iToolkitW INSTALL [-CONFIG] [-SMBIOS] [-tokens] [-ini=<file>]
             [-log[=<file>]]

   iToolkitW FLASH   -bio=<file> [-splash=<file> [-badge]]

   iToolkitW REMOVE  [-CONFIG] [-SMBIOS]

Commands without switches:  iToolkitW HELP   or  iToolkitW?
        Default filenames: iToolkit.ini, iToolkitW.log
Defaults shown in uppercase text above.  Syntax entry non-case sensitive.
Refer to the Readme.RTF or iToolkit.CHM files for more information.
```

DOS Commands

```
GENERAL SYNTAX FORMAT: iToolkit command [-switch]...[-switch]

   iToolkit EXTRACT [-CONFIG] [-SMBIOS] [-BOM] [-tokens] [-ini=<file>]
                [-log[=<file>]]

   iToolkit INSTALL [-CONFIG] [-SMBIOS] [-tokens] [-ini=<file>]
                [-log[=<file>]] [-reboot]

   iToolkit FLASH   -bio=<file> [-force]

   iToolkit REMOVE  [-CONFIG] [-SMBIOS] [-reboot]

   iToolkit REPORT  [-BOM] [-txt=<file>]

   iToolkit VERIFY  [-BOM] [-ini=<file>] [-log[=<file>]]

Commands without switches:  iToolkit HELP     iToolkit ?     iToolkit REBOOT
       Default filenames: iToolkit.ini, iToolkit.log, Report.txt
Defaults shown in uppercase text above.  Syntax entry non-case sensitive.
Refer to the Readme.RTF or iToolkit.CHM files for more information.
```