



Blanco PreInstall

User Manual for version 3.0

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1. General Information

PLEASE CAREFULLY READ THE NEXT PARAGRAPH BEFORE YOU START USING THE PROGRAM

Thank you for choosing Blancco for your data erasure needs. Before you start using the Blancco software make sure that all files, folders, software applications or any other information that you want to save for later use are backed up on an appropriate media device other than the original storage device. If you are not sure whether to erase the information on the storage device, please contact your system operator, information management or a corresponding party, which maintains the computers in your organization. For future use of the erased computer an operating system must be installed. Data that has been erased from the storage device by this program cannot be recovered by any existing method.

The PreInstall software is intended for the centralized erasure of PCs with Windows operating systems. It can be preinstalled to PCs or sent and installed remotely.

Reports from the erasures can also be sent to the Management Console. The reports can be obtained before and after the erasure process. Reports obtained before the erasure process only contain information about the computer's configuration. To use an encrypted HTTPS connection between PreInstall and MC, the TLS certificate hostname in MC must match MC's hostname and the certificate must have been signed by a trusted party.

When PreInstall is executed, the following actions are performed on a normal configuration:

1. The system boot order will be changed.
2. All applications will be closed.
3. After the system is rebooted, Blancco Drive Eraser software will be started.
 - With UEFI machines, two reboots may be required.
4. Report is sent to MC (optional).

The PreInstall software can be configured so that the system will automatically reboot or shut down and Blancco Drive Eraser is started during the next power on.

1.1 Copyright and Confidentiality Statement

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1.2 Minimum System Requirements

- The following Microsoft Windows operating systems are supported:
 - Windows Server 2008 (32 and 64 bit)
 - Windows Server 2012 (32 and 64 bit)
 - Windows Server 2016 (32 and 64 bit)
 - Windows Server 2019 (32 and 64 bit)
 - Windows Server 2022 (32 and 64 bit)
 - WinPE (Windows Preinstall Environment)
 - Windows 7 (32 and 64 bit)
 - Windows 8.x (32 and 64 bit)
 - Windows 10 (32 and 64 bit)
 - Windows 11
- Administrator rights are required
 - If PreInstall is run automatically after installation, the MSI package needs to be run from an administrator account, or executed from an administrator command prompt with `msiexec /i Preinstall.msi`
- PreInstall must be able to create a bootable, unencrypted partition.
 - If any software prevents creation of such a partition, it prevents the usage of PreInstall.
- File system: FAT32 or NTFS.
- 1 GB of unfragmented disk space.
 - PreInstall will use unallocated space if the operating system sees that there is enough available.
 - There might be some special partitions, which are shown as unallocated space to the operating system (for example, some types of encrypted partitions).
 - Dynamic disks are not supported.
 - The maximum number of existing partitions on the boot disk is three (3) on an MBR disk and 128 on a GPT disk.
- [Optional] For remote management: remote management tool with MSI-push capability or a deployment solution for WinPE.
- Works with most storage device encryption tools (some limitations and extra requirements may exist).
- Installing the latest Windows updates is recommended.

1.3 Requirements for the User

Person(s) using this program should have prior experience using computers and the user should, at all times, follow the guidance of this documentation and guidance given by Blancco.

2. Installation and Usage

The software can be run manually or fully automatically, depending on the configuration of the software.

2.1 Manual Approach

Before starting the software, remove all bootable media from the drives. These include floppies, CD- and DVD-ROMs and bootable USB-devices.

1. If the software was delivered as a .zip-package, then extract it.
2. Execute the extracted .MSI-file (with administrator rights).
3. Run the PreInstaller.
4. The program will ask if the user accepts the EULA (<http://www.blancco.com/eula>).
5. The program warns the user and asks if the user is sure the user wants to continue with the process.
6. The user is informed that the Blancco Client Software will run on the next (re)boot.
7. During booting, a boot selection screen is shown. Choose "Blancco" to start the erasure process. Choosing Windows will start Windows and remove Blancco from the boot menu (this will start 120 seconds after the reboot is completed and the uninstallation will take ~60 seconds).
8. The erasure software starts. It can be fully automatic, or manual. Refer to the client software's user manual.
9. The machine has now been erased.

2.2 Automatic Approach

The software can be configured so that the whole process is automated.

This process can be automated to the point that the software only needs installation (which can be automated with other tools), and during the execution no popup windows or other screens are shown. This way the user may have no idea that the software is ready to run / running on the user's computer.

The booting can also be automatic or it can wait until the next (re)boot and the client software will run then. This all depends on how the software is configured.

2.3 Verification

The software can be configured so that it asks for the computer's MAC-address or system serial before starting the software. If a wrong MAC-address / system serial is given, the execution of the software is aborted.

This way the risk of accidentally erasing a wrong system is much lower.

2.4 Asset Report

PreInstall can be used as an asset profiler. This means that the software creates an asset report which contains information about the hardware of the machine, such as CPU model and frequency, RAM amount and type, attached USB devices, etc. Creation of an asset report requires specific "Blancco Asset Profiler" licenses.

Creating an asset report requires a connection to a Management Console. PreInstall consumes a license from the MC and sends the asset report to the MC. The asset report is also saved locally to the directory

where the BlanccoPreInstall.exe is located at. If a valid MC address and credentials are not given, the asset report is not saved or sent to the MC.

Note that PreInstall can generate an asset report even when there is no Blancco Drive Eraser image available.

An asset report is created by using “--asset_manager” parameter. Example:

```
BlanccoPreInstall.exe --asset_manager
```

For more information, see the “--asset_manager” parameter description in the “Command line Parameters” chapter.

2.5 Command Line Parameters

Long Parameter	Short Parameter	Description
--image=<path/to/image.iso>		Defines the path to the Blancco Drive Eraser ISO-image.
--lang=<language ask>		Attempts to set language or shows language selection dialog.
--hide		Hides splash window.
--force		Hides the confirmation should the system be erased as well as notifications related to rebooting and shutting down.
--restore	-R	Restores the boot order and removes the boot loader files as well as the scheduled task. Note that --restore is delayed for 60 seconds after reboot. If rebooting is done earlier than 60 seconds after reboot, the --restore task is not run.
--no_restore		Do not create an automatic restore task. By default PreInstall creates a restore task at next Windows startup to remove itself from the machine in case it's booted back to Windows.
--disableSecureBoot		Disables SecureBoot on supported machines. Currently supported machines are: <ul style="list-style-type: none">• Lenovo Thinkpad models from 2020 onwards. Note: Requires the usage of --supervisorPassword parameter.
--supervisorPassword		Supervisor password is required to access BIOS. This password is required when using the --disableSecureBoot parameter and it cannot be left empty. If no password is entered, it will give an error.
--named_pipe=<name of pipe> [Optional]		PreInstall works as a named pipe client. When providing with this parameter, PreInstall will attempt to connect to a named pipe server with the chosen name. If successful, PreInstall will try to download Drive Eraser preferences from the named pipe server. PreInstall will then apply the downloaded preferences to the Drive Eraser ISO image.
--asset_manager	-A	PreInstall works as an asset manager client.

Long Parameter	Short Parameter	Description
		<p>Create an asset report using the Blancco Asset Profiler. See chapter "Asset Report" for more information.</p> <p>This requires a connection to MC.</p> <p>MC-credentials can be given as parameters with these options:</p> <p>--server_address, --username, --password</p> <p>If MC-credentials are not given as parameters, a dialog will open requesting the credentials.</p>
--server_address=<address>		<p>Server address for the MC. Used with "--asset_manager" parameter. Requires also parameters "--username" and "--password".</p> <p>Example:</p> <p>--server_address=https://123.45.67.89:8443</p>
--preferences=<path to preferences XML file>		When this optional parameter is specified PreInstall will apply the specified XML file to the Drive Eraser preferences.
--username=<username>		Username used for the MC-credentials. Used with "--asset_manager" parameter. Requires also parameters "--server_address" and "--password".
--password=<password>		Password used for the MC-credentials. Used with "--asset_manager" parameter. Requires also parameters "--server_address" and "--username".
--verify=<first field>,<second field>,...		Defines a comma separated list of fields that the end user needs to fill in before the erasure can commence. The values filled in by the user need to match the system information.
--bootloader_level arg		<p>Configures the Windows EFI partition. There are 3 options:</p> <ul style="list-style-type: none"> • 0: Do not modify Windows EFI partition. • 1: Add Blancco bootloader files to Windows EFI partition. • 2: Overwrite Windows EFI partition. <p>Option 1 is <u>default</u> in PreInstall.</p>
--reboot	-r	Reboots the system after execution.
--shutdown	-s	Shuts down the system after execution.
--timeout=<seconds>		Set the timeout of the boot menu after which the default option is automatically selected.
--title="Title here"		Set boot menu entry to "Title here".
--no_default		PreInstall will not set Drive Eraser as the default entry in the boot menu.
--write_domain_user		<p>Creates a custom field on the Drive Eraser ISO, which contains the Windows domain name and the username of the user that ran PreInstall. This field is locked.</p> <p>The format is:</p> <p>Domain\User : <domain name from Windows>\<user name from windows></p>
--extract_wireless_settings		Extract wireless settings from the current Wi-Fi connection into the DE image.
--help	-h	Displays the help page, which lists the usage of the

Long Parameter	Short Parameter	Description
		<p>parameters.</p> <p>Note that this opens a new console window and the execution of PreInstall is paused until the new window is closed. The help window can be closed by either clicking the "X" on top right of the window or by pressing any key on the keyboard.</p> <p>If Parameter "--force" is used, a new console window is not opened. Instead, the help text is written to the log and PreInstall exits immediately instead of pausing the execution.</p>
--deactivate		<p>Allows PreInstall deactivation if there is a Windows Update restart pending.</p> <p>If "--force" is also used, "--deactivate" can also be used when there isn't a Windows Update restart pending.</p>
--reactivate		Reactivates PreInstall, if it was deactivated previously (see "--deactivate" above).
--version	-v	Show the version information. Note that all other options are ignored if this parameter is used, except for --help, which overrides this parameter.

2.6 Example Commands

Execute PreInstall on the machine using the image DriveEraser.iso:

```
BlanccoPreInstall.exe --image DriveEraser.iso
```

Execute PreInstall on the machine using the image DriverEraser.iso and suppressing all GUI dialogs:

```
BlanccoPreInstall.exe --force --image DriverEraser.iso
```

Restore the boot order and remove the boot loader files as well as the scheduled task:

```
BlanccoPreInstall.exe --restore
```

Generate an asset report:

```
BlanccoPreInstall.exe --asset_manager
```

2.7 Registry Configuration with Blancco Drive Eraser

PreInstall will read the configuration for Blancco 5 ISO from windows registry, under registry key:

```
HKLM\SOFTWARE\Blancco\B5Config
```

All configuration values are stored as strings. Value name will contain full path to value. For example:

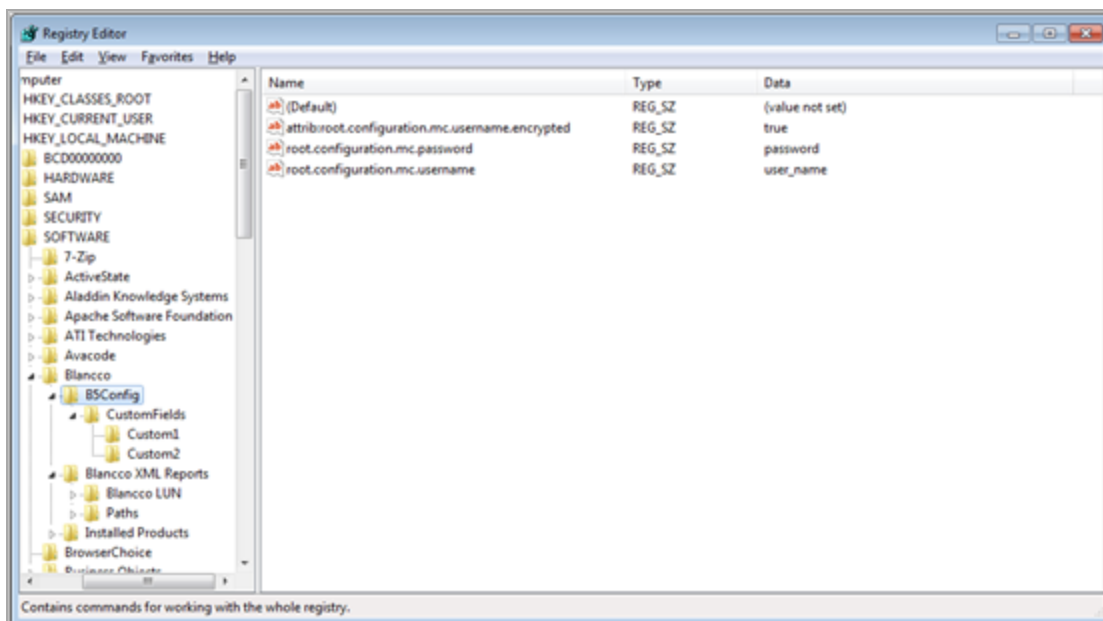
```
Value Name: root.configuration.mc.address Data: cloud.blancco.com
```

Attribute values are indicated by "attrib:" tag at the beginning of value name. For example:

```
Value Name: attrib:root.configuration.mc.username.encrypted Data: true
```

Values are read to following entry as "Value Name" - "Data" pairs by PreInstall and passed to configuration API:

```
map<string,string>
```



2.7.1 Custom fields in the Registry

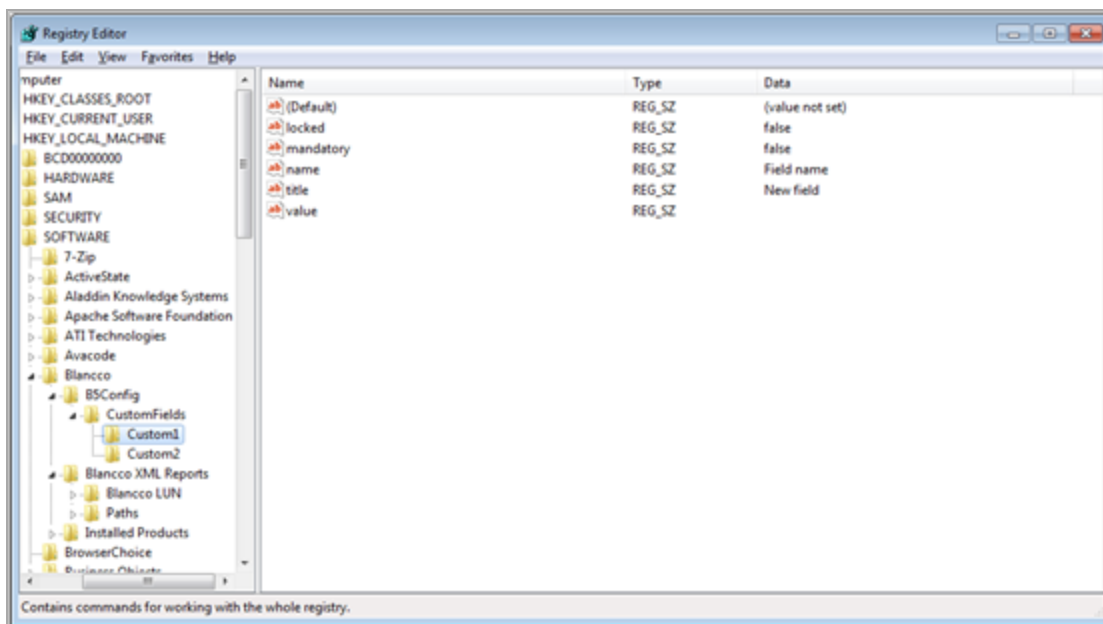
Custom fields are stored under

```
HKLM\SOFTWARE\Blanco\B5Config\CustomFields
```

Each custom field has it's own registry key

```
HKLM\SOFTWARE\Blanco\B5Config\CustomFields\CustomField1
```

that contains all the values for an individual Custom Field.



2.8 TLS Certificate Validation

By default, the TLS certificate validation is turned on.

Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Blanco\Blanco XML Reports			
DWORD	DoNotVerifyCertificates	Possible values are 0 and 1. 0 = Verify TLS certificates 1 = Do not verify TLS certificates	Defines if the TLS certificate validation is turned on or off. By default, it is turned on.

```
Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Blanco\Blanco XML
Reports\DoNotVerifyCertificates
```

By default, the user can consume asset license from MC, if the MC's certificate was signed by a party (e.g. a certificate authority) trusted by Windows.

If the MC's certificate was not signed by a party trusted by Windows, the certificate validation can be turned off in PreInstall using the above registry key.

Note: the registry key "DoNotVerifyMCCert" doesn't exist anymore. It was renamed to "DoNotVerifyCertificates".

If MC's certificate is not trusted by Windows, then the user can add a root certificate to the Windows certificate store.

2.9 Custom Drive Eraser preferences

Custom drive eraser preferences can be passed to PreInstall. PreInstall will apply these custom preferences to the Drive Eraser image.

2.9.1 Delivery methods

2.9.1.1 Named pipe

A named pipe server can be used to send custom Drive Eraser preferences XML to PreInstall. To instruct PreInstall to connect to a named pipe server the parameter `--named_pipe=<name of pipe>` must be specified when running PreInstall. The named pipe server must meet all of the below criteria in order for PreInstall to be able to communicate successfully with it:

- The server must be running on the same machine as PreInstall
- The server must be running with administrator rights
- The server must be signed (either directly or indirectly) by a trusted party. PreInstall uses the Windows certificate store as the reference for trusted parties.
- The server must be signed directly by a party trusted by PreInstall. For more information, please contact Blancco Support.
- The server must be using the pipe type `PIPE_TYPE_MESSAGE`
- The server must send messages in UTF-8 format

On a successful connection to the named pipe server, PreInstall will behave as follows:

1. Send a message "getProxyDetails"
2. Expect to receive an XML response from the named pipe server
3. Send a message "getPreferences"
4. Expect to receive an XML response from the named pipe server
5. Close the connection to the named pipe server

For the "getProxyDetails" and "getPreferences" messages, the named pipe server should respond with XML. The server may prefix any messages it sends with custom information such as the message length. PreInstall will ignore anything in the response that comes before "<root>".

Note the following about messages that PreInstall sends to the named pipe server:

- All messages are encoded in UTF-8
- All messages are prefixed with the message length
 - The message length is encoded as a 4-byte ASCII string, i.e. if the message length is 24 bytes, PreInstall will prefix the message with the string "0024"

2.9.1.2 XML file

A file can be used to pass custom Drive Eraser preferences XML to PreInstall. To instruct PreInstall to read a preferences XML file, the parameter `--preferences=<path to preferences XML file>` must be specified when running PreInstall. The XML file passed to PreInstall must be encoded in UTF-8 format.

2.9.2 XML content

The XML passed to PreInstall is processed the same way regardless of the source, i.e. all of the information below about the XML content applies to both XMLs passed via a named pipe and files.

2.9.2.1 Rules

- The XML passed to PreInstall can be complete or impartial
 - The XML passed to PreInstall will override the XML that is already present in the Drive Eraser image
 - In case of impartial XMLs, only the parts specified in the custom XML are overridden in the Drive Eraser image
 - The XML pieces not specified in the custom XML are left untouched in the Drive Eraser image
- XML outside of the XML path <root><configuration> can be specified but is ignored by PreInstall
- The full path to each XML element must be specified, for example
 - Invalid path: <proxy><proxy_username>
 - Valid path: <root><configuration><proxy><proxy_username>

2.9.2.2 Encryption

Some of the XML elements may be encrypted. Depending on the absence/presence of the "encrypted" attribute and its value, PreInstall will behave in different ways to cover different use cases. The PreInstall behavior and use cases are summarized in the table below:

Use case	XML syntax	Action from PreInstall
Pass an unencrypted value to PreInstall and let PreInstall leave it unencrypted when applying the custom XML element to the Drive Eraser preferences	<proxy_password>	PreInstall will pass the raw unencrypted value to Drive Eraser
Pass an unencrypted value to PreInstall and let PreInstall encrypt the value before applying the custom XML element to the Drive Eraser preferences	<proxy_password encrypted="false">	PreInstall will encrypt the passed value, set the encrypted attribute to "true" and then pass this modified XML element to Drive Eraser
Pass an already encrypted value to PreInstall and let PreInstall leave the already encrypted value untouched when applying the custom XML element to the Drive Eraser preferences	<proxy_password encrypted="true">	PreInstall will pass the raw already encrypted value to Drive Eraser

3. PreInstall & WinPE

3.1 Booting Windows PE images with Preinstall

Blancco Preinstall can add Windows PE ISO images to Windows boot menu. Usage is the same as when using Drive Eraser ISO images.

3.2 Running Preinstall inside Windows PE

Preinstall can be run inside Windows PE to make Drive Eraser bootable from local the machine.

Notes:

- All existing partitions will be removed when running Preinstall inside Windows PE.
- Windows PE environment must contain a WinPE-WMI package, see [WinPE Optional Components Reference](#) for more information

When running Preinstall inside Windows PE, the image and Preinstall executable are both deployed as separate files. In the example below, Preinstall is used to make Drive Erase ISO image located on network drive Z: bootable on the local machine:

```
"%SYSTEMDRIVE%\BlanccoPreInstall.exe" --image="Z:\Blancco Images\Blancco_Drive_Eraser"
```

Supported additional parameters are **lang**, **force**, **hide**, **reboot** and **shutdown**.

4. MSI Package Creation

Things to note:

- Running a 64 bit version of PreInstall from an MSI package isn't currently supported.
- Using the WixEdit GUI with the Blancco PreInstall XML files is only supported with WixEdit version 0.7.5.

4.1 Prerequisites:

- WixEdit software
 - Open the Start menu, search for "Turn Windows features on or off" and select ".NET Framework 3.5 (includes .NET 2.0 and 3.5)", click ok and go through the installation dialogue
 - Download and install WixEdit 0.7.5 using the download link:
<https://github.com/WixEdit/WixEdit/releases/download/v0.7.5.0/wixedit-0.7.5.msi>
- Blancco PreInstall package (zip file)
- Blancco Drive Eraser image

4.2 Usage

1. Copy the custom Drive Eraser ISO into the PreInstall package subfolder "msi_build".
2. Name the ISO file "BlanccoErasureClient.iso".
 - Alternatively a link to the ISO can be provided, to download the ISO from somewhere, instead of manually copying it into the "msi_build" folder of the PreInstall package. See the parameter "--ISOLink" in the parameter table below.
3. Run the executable "PreInstallPackageGenerator.exe" included in the PreInstall package to generate an MSI package.
 - See the example use cases below
4. After PreInstallPackageGenerator.exe has finished running, the generated MSI package can be found in the subfolder "MSI" of the PreInstall package.

4.3 List of Parameters

Parameter	Mandatory	Description
--additionalArguments	No	List of additional arguments to pass to PreInstall when run immediately after installation (only effective when the parameter --launchPreInstall is also passed). The parameters need to be surrounded by inverted commas, e.g. --additionalArguments "--force --write_domain_user "
--architecture	Yes	The architecture (32 bit or 64 bit) of the PreInstall binary to use when generating the MSI package.
--autoXML	No	If active, the MSI package installation won't require any user input/confirmation during installation, e.g. pressing the "Next" button.
--help	No	Displays the help text.
--ISOLink	No	URL to a Drive Eraser image.
--language	Yes	The language to be used in the generated MSI installer.

Parameter	Mandatory	Description
--launchPreInstall	No	Run PreInstall once the MSI installation completes.
--noDE	No	Creates an installer that does not contain BlanccoErasureClient.iso. Package Generator can be ran without BlanccoErasureClient.iso in the msi_build folder.
--preInstallDir	No	The root directory of the PreInstall package. This argument is only necessary when running the PreInstallPackageGenerator.exe from anywhere else other than the PreInstall package root directory (where the PreInstallPackageGenerator.exe is located by default).
--doNotRestoreBootOrder	No	Restore the boot order (i.e. undo any boot changes done by previous PreInstall runs).
--wixDir	Yes	The location of the Wix installation.

4.4 Example Use Cases

Manually install PreInstall without running it

```
PreInstallPackageGenerator.exe --architecture win32 --language en --wixDir
"C:\\Program Files (x86)\\WixEdit\\wix-3.0.5419.0"
```

Automatically install PreInstall

```
PreInstallPackageGenerator.exe --architecture win32 --autoXML --language en --
wixDir "C:\\Program Files (x86)\\WixEdit\\wix-3.0.5419.0"
```

Automatically run and install PreInstall

```
PreInstallPackageGenerator.exe --architecture win32 --autoXML --language en --
wixDir "C:\\Program Files (x86)\\WixEdit\\wix-3.0.5419.0" --launchPreInstall --
additionalArguments "--force --reboot "
```


5. Troubleshooting

Problem:

After running PreInstall and rebooting, the Blancco boot menu appears. I would wish to boot back to Windows and there is no option for that.

Solution:

It's possible that Windows was installed in legacy (BIOS) mode, but the computer is configured to prefer UEFI boot. Please consult your computer's manual on how to boot in legacy mode.

Problem:

PreInstall version, the error message 11004 is shown. When booting the computer after installation no boot menu is shown.

Solution:

Running the MSI from the admin command prompt as follows should solve the error message 110004:
cmd -> "Run as administrator" -> `msiexec /i <preinstall msi>`

Problem:

Following error is displayed:

```
PreInstall has encountered an error and will now terminate (120001)
Could not find image [image path]
Please check that image name or path doesn't contain characters which are not supported by your regional format.
```

Solution:

Please check that the image name or path does not contain characters which are not supported by your regional format. These characters are usually characters with umlauts (â, ä, ö, ü, ê, ë, etc.) or similar characters.

Problem:

PreInstall was able to create a partition but was not able to create directories and files. The environment is protected by Bitlocker.

Solution:

If PreInstall is run in an environment protected by Bitlocker, the "Deny write access to fixed drives not protected by Bitlocker" policy must not be enabled.

6. Contact Information

Visit the technical knowledgebase (FAQ) and contact Blancco Technical Support by submitting a technical support ticket at:

<https://support.blancco.com/>

See the instructional videos for Blancco products at:

<https://www.blancco.com/resources/videos/>

For contact information and the latest information about secure data erasure solutions, visit the Blancco website at:

<https://www.blancco.com>

We are always looking for ways to improve our products. Please let us know if you have any suggestions!