



Stratodesk NoTouch OS Quick Start Guide V1.0





Introduction to Stratodesk

Stratodesk is redefining endpoint computing by delivering a single endpoint solution for VDI, DaaS and IoT markets. Today's enterprises are moving beyond traditional desktops towards smart workplaces where the diverse network of endpoint devices will create interoperability and compatibility issues without a single unified endpoint solution.

Stratodesk's cutting edge Linux-based endpoint OS and management suite, NoTouch, is a next generation, hardware-agnostic solution that enables companies to cost-effectively manage their endpoints. Our solution works seamlessly across x86 and ARM based hardware products (including Raspberry Pi) to provide a unified platform for your endpoints. It also increases endpoint security, simplifies user experience and allows customers to maximize the benefits of existing desktop hardware (Laptops, Thin Clients, PCs and ARM devices) through PC Repurposing.

Table of Contents

- [Install NoTouchOS](#)
- [PC's & x86 Thin Clients](#)
 - [Preparation](#)
 - [Prepare USB Drive/Stick](#)
 - [Live Boot](#)
 - [Installation Procedure](#)
- [Raspberry Pi Devices](#)
- [Jetson Nano](#)
- [MSI Installation](#)
 - [Warnings First](#)
 - [Manual Installation](#)
 - [Control the MSI Behaviour](#)
 - [Mass Rollout with Group Policies \(GPO\)](#)
 - [Troubleshooting](#)
- [Configuration Preload](#)
 - [Readout Config of Well-Known Device](#)
 - [Rename & Place on Boot Medium](#)
 - [PXE Live Boot](#)
 - [MSI File](#)
 - [Use/Install](#)
 - [Advanced Option](#)
 - [Certificates](#)
 - [Machine Certificates](#)



Install NoTouch OS

Installation in NoTouchOS terminology means to physically write NoTouchOS on a system's hard or flash drive, overwriting/wiping out Windows or any other operating system that was there. If you just want to run NoTouchOS for a quick test or side-by-side with the existing OS, do not install, use Live Boot - just run from the boot medium that you created, "live" mode is the default.

NoTouchOS works on both PCs/Thin Clients/Laptops/Tablets with x86 (Intel/AMD/VIA/etc) processors and the ARM-base Raspberry Pi devices.

PC's & x86 Thin Clients

Installing NoTouchOS is very easy. Most people choose to use a USB pen drive or PXE/network boot. Alternatively, one can burn a bootable CD-ROM from the ISO file that is included in the NoTouch OS download "All-In-One" package. Download this "All-In-One" package first. Another option is to install over a running Windows using [MSI Installation](#).

You might not have to "install" NoTouch OS. It runs well in "live" mode from USB, PXE or CD-ROM for a test, side-by-side with your existing OS. Installing is done when you actually **want** to wipe out Windows or whatever has been there before.

Preparation

Note: For installing with MSI packages, please see here: [MSI Installation](#) This section describes how to install with your own boot medium.

Preparing for installation is easy:

1. Set up your boot medium, such as
 - Prepare [USB Drive/Stick](#), or
 - Burn the NoTouch ISO on a CD-ROM, or
 - Set up PXE Network Boot
2. Let the target machine boot from your boot medium (this may require entering the machine's BIOS and changing boot options)
3. Immediately after boot, at the boot menu, type in "install" to avoid [Live Boot](#) and instead go into the text-based installer (a module called GENESIS internally)

Prepare USB Drive/Stick

Whether you want to [live boot](#) or [Install NoTouchOS](#) from a USB drive, be it a USB thumb drive/USB stick/etc or anything else, this is what you need to do.

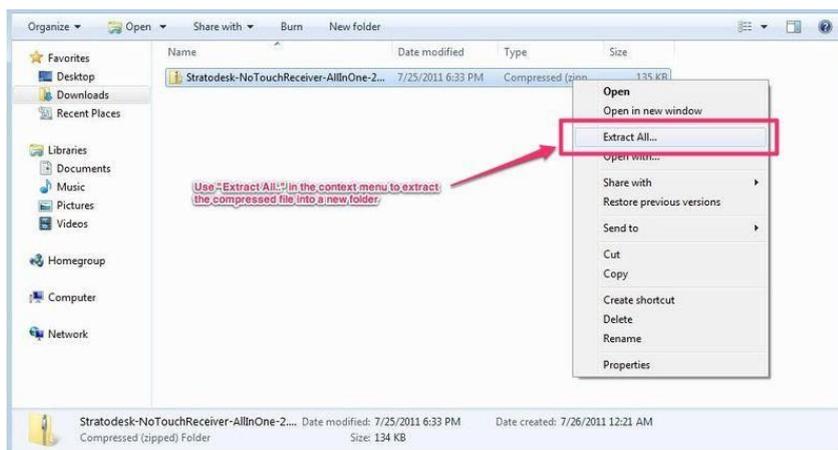
To create the bootable USB drive such as a USB pen drive or "USB stick" you'll need the following:

- USB flash drive, which fits your size requirements (e.g. 2GB), in FAT/FAT32 format
- The Stratodesk NoTouch OS All-In-One package (ZIP file). Download it from the Stratodesk web site.

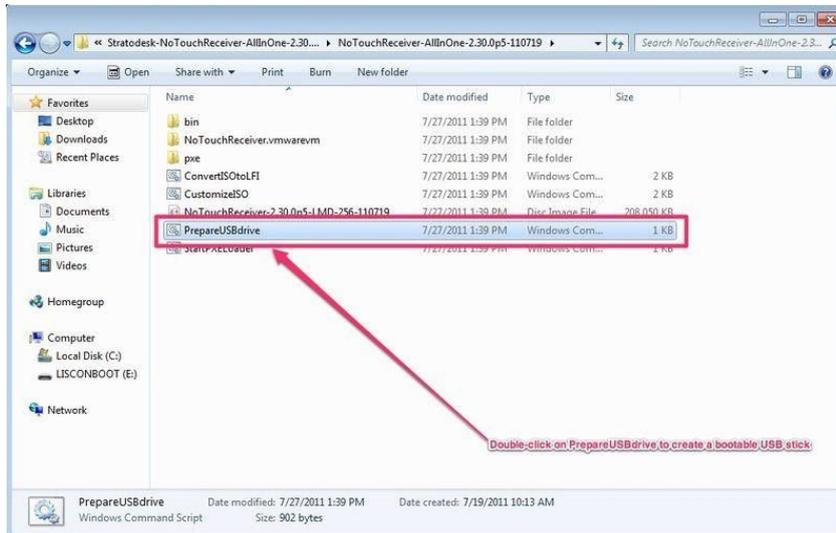
The actual installation is easy. Please follow the instructions that match your computer operating system below.

Windows users might be fine with just extracting the ZIP file with "Extract All..." and then double clicking on PrepareUSBdrive.cmd and following the instructions. A longer explanation is given below.

You can download the installation package from our support portal, or you can submit your name and email address for a free trial on our website. Then you will receive a download link for a ZIP-file which contains the necessary tools and files. Download this package and use the **Extract All ...** function to extract it.



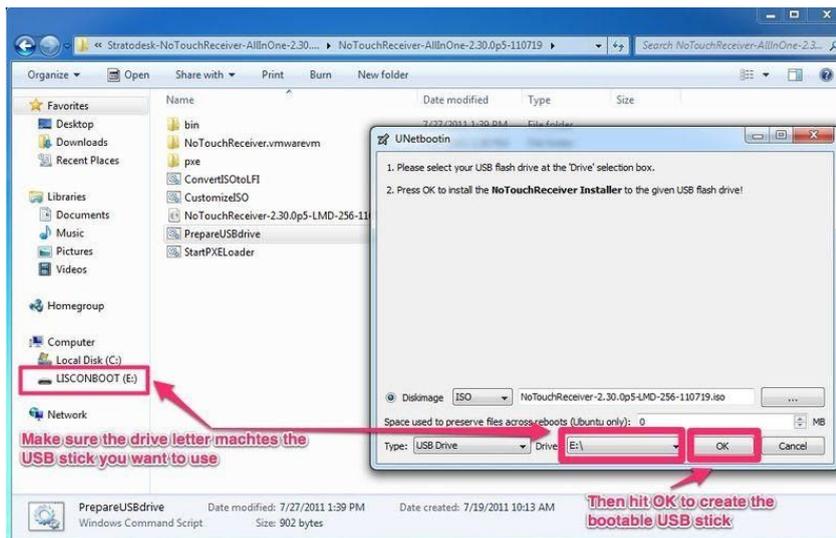
This will create a new folder with the extracted files. Now it is time to prepare your USB pen drive (USB-stick) or basically any bootable USB storage medium to boot NoTouch OS. Make sure that your USB drive is formatted with FAT/FAT32 File System. With the USB stick attached to your computer open the new folder and run the command **PrepareUSBdrive** by double-clicking on it.



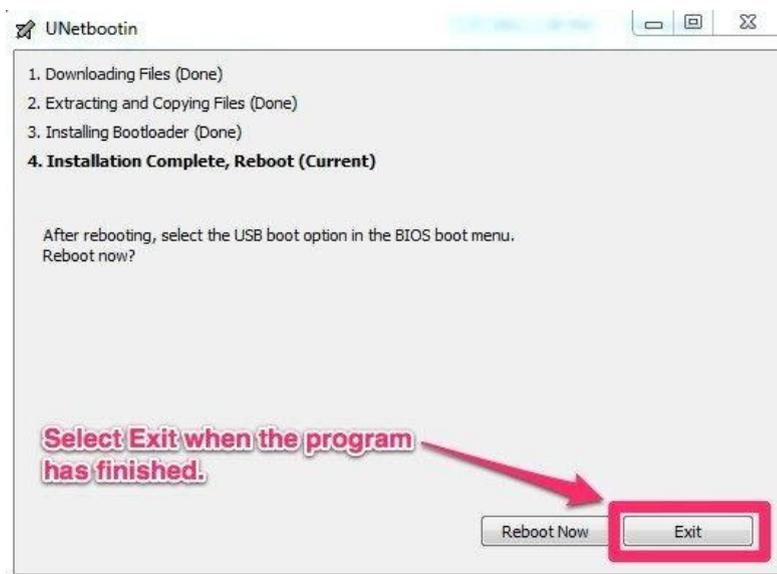
When you are asked if you want to allow the program to make changes to your computer select **Yes**.



This will start a tool named **UNetbootin** to create a bootable USB stick. All the settings should be prefilled but make sure the correct USB stick is selected in case you have more than one attached. Then just hit **Start** and the bootable USB stick will be created.



When the tool has finished select **Exit**. Now the USB stick is ready to use.



Procedure on Computers running Mac OS

While Stratodesk does not officially support installation on Mac, we are happy to see that this is easily doable.

1. Download and extract the All-In-One ZIP package to a temporary folder. Download and install the free UNetbootin software package (Mac version) from <http://unetbootin.github.io/>
2. Run UNetbootin to flash the NoTouch OS ISO file - you'll find that in the folder you extracted the All-In-One package into - to the USB drive. Follow UNetbootin's directions and make sure you pick the right ISO and the right USB device.



Procedure on Computers running Linux

While Stratodesk does not officially support installation on Linux, we are happy to see that this is easily doable.

1. Download and extract the All-In-One ZIP package to a temporary folder. Download and install the free UNetbootin software package (Linux version) from <http://unetbootin.github.io/> - Installing software on Linux is depending on your distribution. Please follow the instructions in UNetbootin's manual and your Linux distribution's manual.
2. Run UNetbootin to flash the NoTouch OS ISO file - you'll find that in the folder you extracted the All-In-One package into - to the USB drive. Follow UNetbootin's directions and make sure you pick the right ISO and the right USB device

Troubleshooting

Make sure you set your target machine's boot order to boot from USB first. Usually this is done in the system BIOS, which is usually accessed by hitting the Del or F2 keys immediately after turning on the machine. Refer to your hardware or BIOS vendor's specific instructions.

In some rare cases a system still might not boot from USB. Try these steps to solve this problem:

- Try to choose a different BIOS boot option such as USB-HDD or even USB-ZIP



- Use a different USB drive. The vast majority of USB sticks are fine but there are some out in the wild that refuse to be bootable; especially on older Thin Client hardware.

Did the USB pen drive have enough space? Did you clean the trash can / recycle bin so that deleted files were really deleted?

Did you use an earlier NoTouch version before on this drive? If so, did you really delete it before reapplying the procedure?

Should you still not be able to get it running, why not try a different USB drive? Especially these USB sticks/pen drives are now available in masses in every office as they are frequently used as swag/advertising items so it should not be difficult to find another one.

Live Boot

"Live Boot" refers to the concept of running NoTouch on a PC or laptop or similar device without writing it to a system's disk, thus without "installing" it onto a specific machine. NoTouch can be [live-booted](#) from USB, CD-ROM and network (PXE).

Live booting is easy:

1. Set up your boot medium, such as
 - [Prepare USB Drive/Stick](#), or
 - Burn the NoTouch ISO on a CD-ROM, or
 - Set up PXE Network Boot, e.g. by using the Stratodesk Virtual Appliance
2. Let the target machine boot from your boot medium (this may require entering the machine's BIOS and changing boot options)

Note: It is possible to customize and pre-load your own configuration - please see here: [Configuration Preload](#)

Raspberry Pi: "[Live Boot](#)" is not available for [Raspberry Pi](#) based systems.

Installation Procedure

Make sure you type in "install" or select it with your cursor keys, depending on the menu that appears; Do this **immediately** when the boot menu appears, after the BIOS runs its start-up checks (if you miss that moment, the system will boot to [live mode](#)). A text-based installer, sometimes referred to by its internal codename GENESIS, appears.

Note: Install means overwriting whatever is there on the hard or flash drive. There is no uninstall. Only install it when you are absolutely sure you want to repurpose this PC into a Thin Client.

```
ISOLINUX 6.03 ETCD Copyright (C) 1994-2014 H. Peter Anvin et al
Stratodesk
*****
***** NoTouch OS Live Boot / Installation ***** (c) Stratodesk *****
*****

live          ... Live Boot (Default)
install       ... Install to system disk

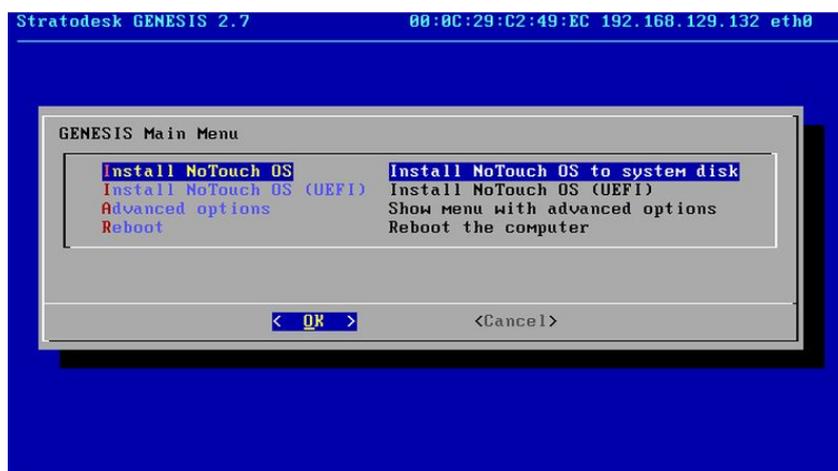
Diagnostic options:
live-verbose  ... Live Boot (Verbose boot)
install-verbose ... Install to system disk (Verbose boot)

https://www.stratodesk.com
US: Stratodesk Corp, San Francisco, California
EU: Stratodesk GmbH, Klagenfurt, Austria

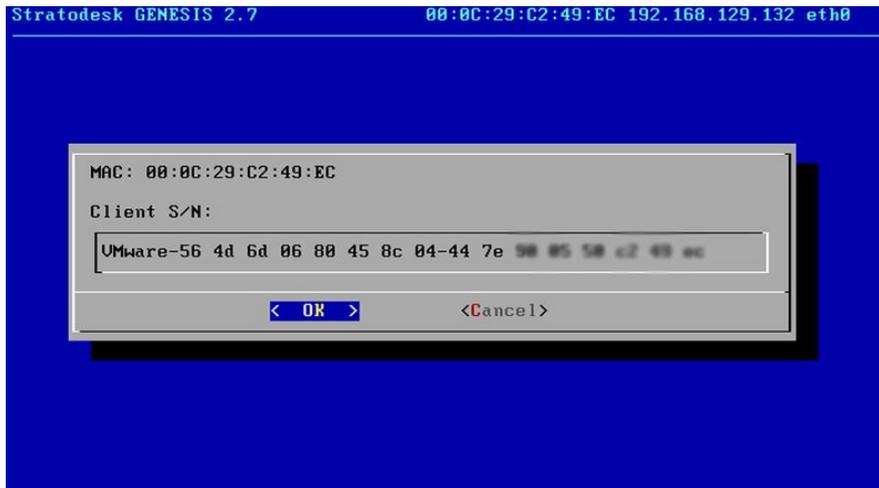
For technical support please write to support@stratodesk.com!

boot install Type "install"
```

This opens the **Stratodesk GENESIS Main Menu**. You only have to pick the appropriate **Install NoTouch OS** option and hit **ENTER** to start the installation.



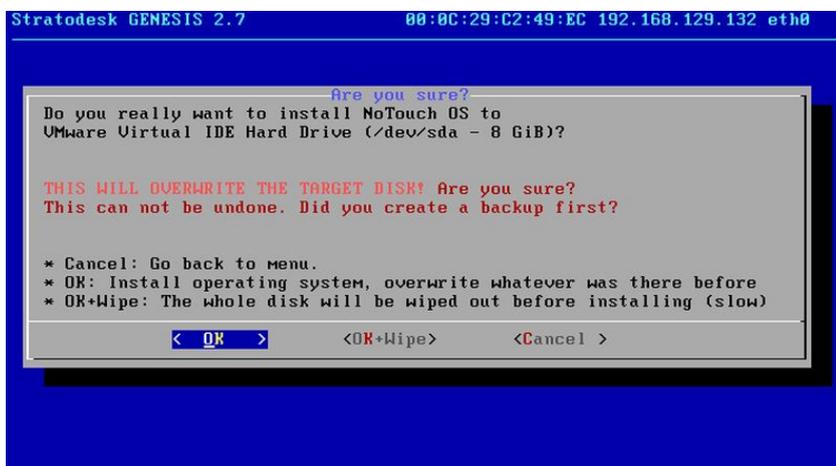
You will be asked for a system serial number. The system will try to read the device identification or serial number from the system's DMI-BIOS. On most brandname PCs this will correspond to the asset tag sticker, and that is the intended purpose: To match devices to their asset tags. In case the system cannot read a number from DMI-BIOS, please copy the asset tag or your inventory id number. For test purposes you can also enter a dummy S/N. The number you enter can later be used in NoTouch Center to identify the device.



Then the final question if you really want to install the **NoTouch OS** on the local drive will pop up. **Think again! Is there anything of value on the drive? Installing NoTouch will wipe your hard drive. Are you sure?**

If you are sure, select **OK** and hit **ENTER**.

Actually, there is a second option given, "OK+Wipe". This would securely erase the full disk, a process which can take several hours. Do **NOT** use this on Thin Clients - this feature is intended for PCs with real hard drives only.



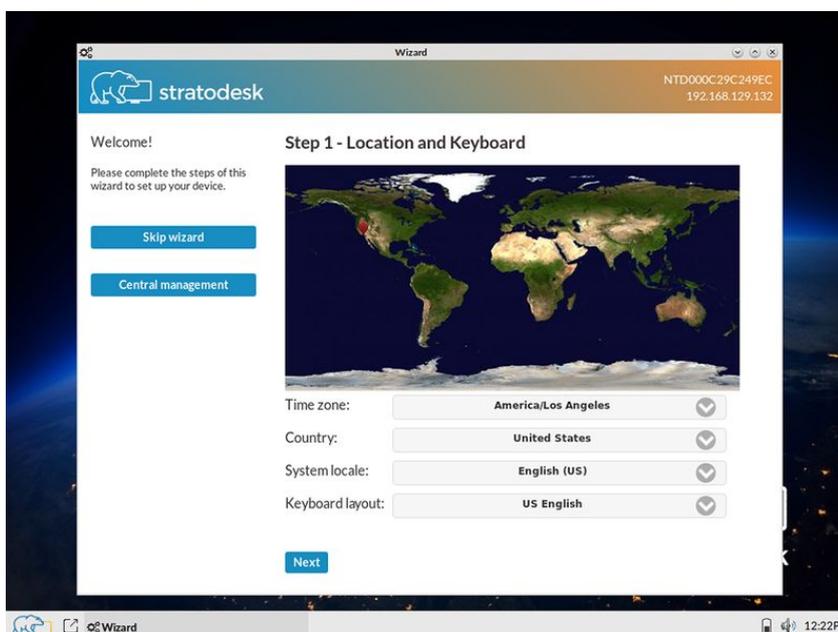
You will get the message that the installation finished successfully and will be asked to press **ENTER**.

```
Initializing partition table
OK!
Re-reading partition table
Formatting internal disk
OK!
Mounting internal disk
OK!
Copy system files to disk
1.16GiB 0:00:00 [ 133MiB/s] [ <=> ]
OK!
Verifying copied files
OK!
Installing boot loader
Using Grub2
OK!

Installation successful!
Press Enter to continue...
```

This will return you to the **GENESIS Main Menu** where you move the selection down to **Reboot** and press **ENTER**. The client will reboot and start up with **NoTouch OS**.

Now you are finished and after the reboot you will see the **NoTouch OS** Configuration Wizard.





Raspberry Pi Devices

Generic Raspberry Pis are easily converted to running NoTouch by reflashing the SD card.

1. Take the SD card from the Raspberry and insert it into your PC or Mac via an SD card reader
2. Unzip the NoTouch ZIP file. Double-check if you have an ZIP file with "-armhf-" in the file name.
3. On Windows, execute `FlashSDcard.cmd`.

Note for Mac or Linux users: Yes, you can flash the SD card on Mac or Linux too. Find out which device node represents the SD card reader - e.g. on Mac use Disk Utility. Then use the `dd` shell command as root, such as

```
dd if=lnx-2.40.1864-EEs-k404-armhf-160604.bin of=/dev/disk2 bs=16m
```

Jetson Nano

The Jetson Nano is easily converted to running NoTouch by reflashing the SD card.

1. Take the SD card and insert it into your PC or Mac via an SD card reader
2. Unzip the NoTouch JETSON ZIP file. Double-check if you have an ZIP file with "-JETSON-" in the file name.
3. On Windows, execute `FlashSDcard.cmd`.

Note for Mac or Linux users: Yes, you can flash the SD card on Mac or Linux too. Find out which device node represents the SD card reader - e.g. on Mac use Disk Utility. Then use the `dd` shell command as root, such as

```
dd if=lnx-2.40.5633-JETSON-k409-arm64-190804.bin of=/dev/disk2 bs=16m
```

MSI Installation

NoTouchOS can be installed directly from inside Windows with an MSI package. The big advantage is that you can roll MSI packages out without any third-party tools without any user interaction on the individual systems.

This installation procedure supports at least Windows XP, Vista, 7, 8 and 8.1.

Please note: **This will overwrite Windows.** It is supposed to be the "last" thing you ever do on the old Windows. You can actually use the MSI file to also run NoTouch side-by-side with Windows by creating the C:\wininstall_config.txt file, see below for more information. But beware, the default is to repurpose.

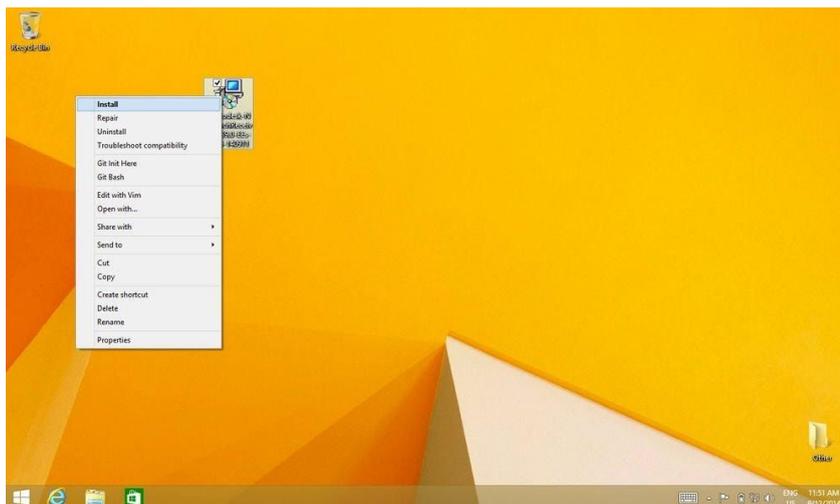
Warnings First

This package is intended to make an unattended mass rollout possible, i.e. repurposing a large number of PCs without user interaction. It looks and feels like a regular Windows MSI package, the only difference is that there is no uninstall - it will reformat the hard drive, overwrite Windows and install NoTouchOS.

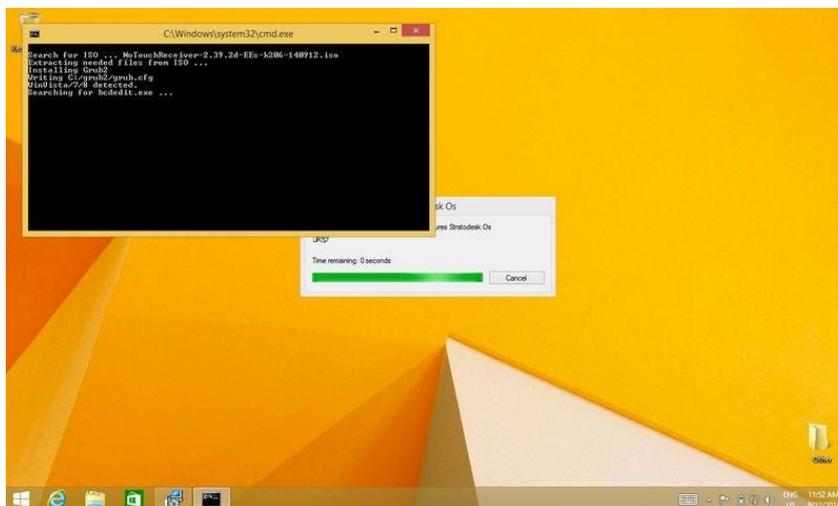
Please do not store these packages on (semi)public shares - one of your co-workers could be tempted to try it and then destroy his work machine. Test the package on a dedicated test machine, do the rollout on the machines intended to be converted, and then delete the dangerous MSI packages.

Manual Installation

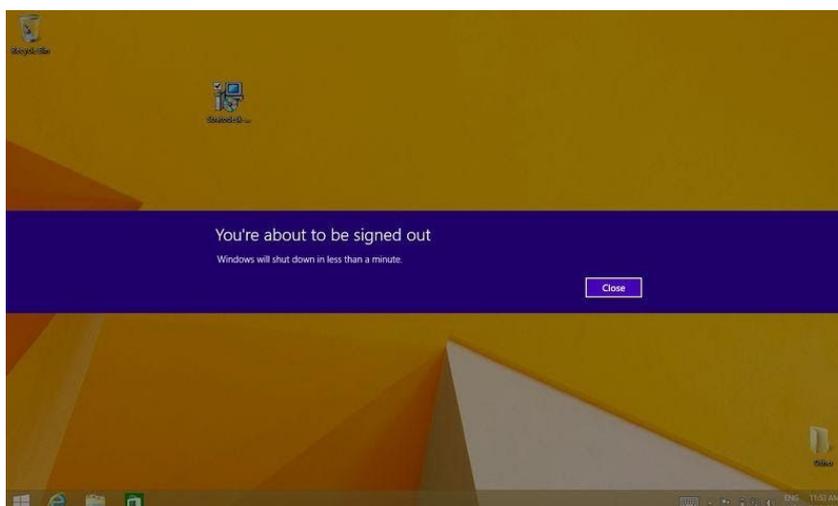
Firstly, copy the msi file to the target operating system.



Double-click it or right-click and select "Install"



At this point, the system will ask a few questions. The idea here is to make sure people know what they are doing. In a real mass-rollout you will have the config file rolled out and these questions will not be asked (see below). The system will do some magic - no further interaction necessary. After some time, it will request a reboot.



On the reboot, if you are fast enough, you will notice that the boot loader is now different. Again, no interaction necessary, just let the system do what it is supposed to do:

```
Windows Boot Manager

Choose an operating system to start, or press TAB to select a tool:
(Use the arrow keys to highlight your choice, then press ENTER.)

Windows 8.1
GRUB

Seconds until the highlighted choice will be started automatically: 2

Tools:

Windows Memory Diagnostic

ENTER=Choose      TAB=Menu      ESC=Cancel
```

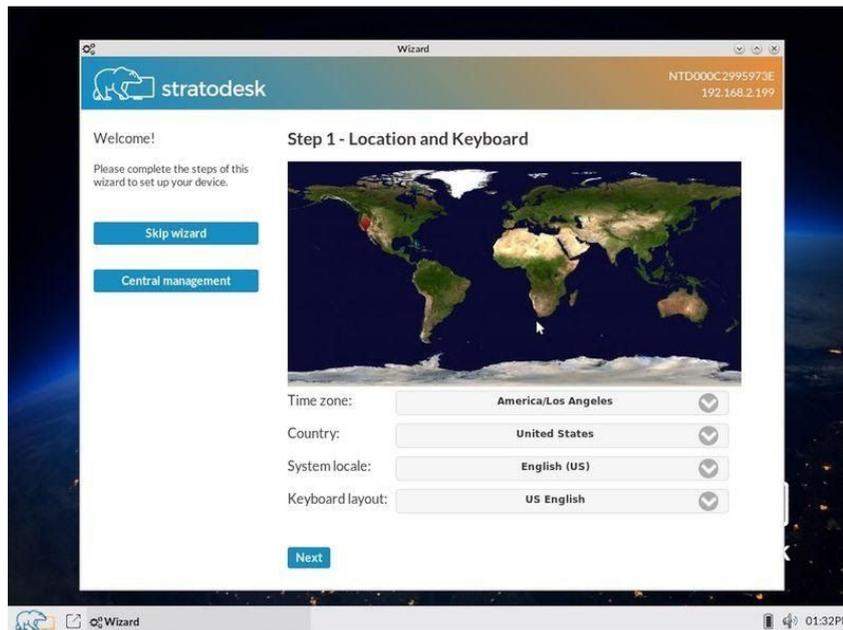
Then the regular text-based NoTouchOS GENESIS installer will come up, run through all of its steps without any user interaction and reboot again.

```
2.4796301 Write protecting the kernel text: 4032k
2.4797191 Write protecting the kernel read-only data: 2024k
Starting GENESIS, the fast and easy installer for NoTouch
In case of problems, use Alt-F2 to switch to a Linux console
or write to support@stratodesk.com
Loading kernel modules
Setting up filesystem and locales
Starting udev
Probe platform
bootmedium: cdrom

System boot completed

Boot device found at /dev/sda2 ...
Initializing partition table
OK!
Formatting internal disk
OK!
Mounting internal disk
OK!
Copy system files to disk
489MB 0:00:01 [ 341MB/s] [ <=> ]
OK!
```

Congratulations. Your PC has been upgraded to a NoTouchOS VDI endpoint.



Control the MSI Behaviour

You can control the behaviour of the MSI file, for instance tell it to create a dual-boot installation instead of overwriting Windows.

For this, create a text file on the target PC with this name before installing the MSI (we assume you will at the end of the day have this being created automatically on many many machines):

```
C:\wininstall_config.txt
```

The content of this file should be as follows:

- `mode=dual|replace` (choose "dual" for dual boot)
- `kparams=` (kernel parameters if needed, optional)
- `notdefault` (don't setup NoTouch to be the default boot entry, optional)
- `auto` (for unattended "replace" installations, optional)

Please test the installation first on a single test device before rolling it out to all devices.

Mass Rollout with Group Policies (GPO)

There are many tools available that support easy rollout of MSI packages. However, there is no need for any 3rd-party software, you can do this right with plain Windows.



Let's assume you have the MSI package downloaded and put on a file share where "Domain Computers" have read permission (Use "Share with"/"Specific people").

The user account you are using to install the file must have full administrative access (emphasis on "full" - we mean it!)

1. First, create the configuration text file (see below) and roll it out with regular GPO means!
2. Make sure you have the "tcmgr" DNS host name or alias configured and that it points to NoTouch Center.
3. Open "Group Policy Management" from "Administrative Tools" in the Start Menu.
4. Click your way through "Domains", your domain and search for "Group Policy Objects".
5. Do a right-click on the "Group Policy Objects" folder, click "New", and assign a name.
6. Edit your new policy - In the right pane on the bottom, there is a box that says "Security Filtering". Remove the "Authenticated Users" entry. Add either the group "Domain Computers" for all machines or specific computer names, depending on where you'd like the software to be deployed.
7. Go back up to the domain folder (in the navigation pane) and right click it. Click "Link an existing GPO". Click your new GPO's name and click OK.
8. Now go back to the GPO under "Group Policy Objects" folder, and right click it. Click on "Edit". A new window will open.
9. Navigate to "Computer Configuration" / "Policies" / "Software Settings" / "Software installations". Right click inside the empty pane on the right and go to "New" / "Software Package".
10. A new window pops up - navigate to the share that you created earlier (\\MYSERVERNAME\FOLDERNAME), not the physical folder on the server (C:\SOMETHING\FOLDERNAME) and select your MSI.
11. Click the "Assigned" bubble and then click on OK.
12. Now close all of your windows on the server and reboot all of your workstations. They will install the NoTouch MSI before the computer allows a user to logon (that means, the computer will have a "Please wait..." banner for some time.

Note: It may take two or three restarts for the server to update the GPO on the workstations.

After that, you'll find all machines in NoTouch Center ready to be configured. If you have set up 'Auto Assign' they will get their configuration automatically, if not, add them to the groups where you want them, and they will be configured by NoTouch Center.

Troubleshooting

In case the system does not start into Linux afterwards, most likely you did not have the correct permissions. Remember, you need full administrative permissions otherwise you won't be able to modify the boot loader configuration! If the system starts into Linux but then cannot boot properly most likely you have the wrong kernel version. Please try a different kernel version image.

Configuration Preload

When installing NoTouch on a device, it will create a factory-default configuration. The typical workflow is that the client would get its configuration from the management server immediately afterwards. There are cases however, where this is not possible, for example when a specific Wireless LAN or Network Authentication configuration is needed to access the network. An easy method exists how to automatically preload a configuration to a freshly-repurposed device with the standard USB/CDROM installation (for PXE see below):

1. Configure a sample device to the point you'd like to distribute
2. Fetch the configuration from this device
3. Place the file in the root folder of the USB medium or CD-ROM

On top of that, it is possible to add custom, machine-specific certificates.

Read out the configuration from a well configured device

Connect with your browser on your PC/workstation/laptop to the well-configured - the "template" device - and log in with your admin password. Even though it resembles the local configuration, some additional menu items are available:

- Choose "Download configuration"
- A file named HOSTNAME.cfg will be downloaded (instead of "HOSTNAME", the file name will be the actual system's DNS host name)

This file contains the full "configuration", meaning configuration parameters, but also certificates, custom templates, etc. It also contains static IP address configuration if you do not use DHCP.

Rename and place it on the boot medium

The easiest thing is to just rename the file to config.cfg and place it on the USB medium (root folder). Note: Please spell config.cfg all-lowercase, this is case-sensitive.

If, and only if you use a CD-ROM to repurpose devices, you need to create a custom ISO image. You may use third party tools provided they keep the boot capability of the ISO image, or you use the builtin method on Windows systems:

1. Inside the extracted NoTouch ZIP, create a folder named "localcd", and a subfolder "images"
2. Copy the config.cfg file into the "images" folder, and rename it to live.cfg
3. Execute CustomizeISO.cmd

PXE Live Boot

In a PXE live boot setup, you need to:

1. Get the configuration from one machine as described above
2. Copy config.cfg into the Stratodesk Virtual Appliance using scp or by connecting to the notouch file share
3. Make sure it resides in the /opt/clientconf/config directory (or the config subfolder of the notouch file share)

Note: This method cannot be used for installation via PXE.

MSI File

If you deploy or boot via our [MSI Installation](#), configuration preload could not be simpler. Simply roll out your config.cfg file and place it into the C:\ directory.

In other words, the MSI file looks - on the target machine, when executed - for a file named C:\config.cfg. If it is present, it is used, if not, default configuration will apply.

Note: Of course, the MSI file should be rolled out after the config.cfg. However, whatever mechanism you use (Group Policies, Altiris, ...), if you can roll out an MSI, you can also roll out the config.cfg.

Use/Install

No extra actions have to be taken. Just [Install](#) or [Live Boot](#) as usual. (Note: You need at least NoTouch version 2.36.13 to use configuration preload with [Live Boot](#))

With the file present, it will be used automatically. During the textual installation, you will see a one-line text message informing you that the installer is applying the configuration to the system which is not present otherwise.

Advanced Options

Modifying the configuration manually

The config.cfg file is actually a gzip-compressed tar file (tar.gz), a very common archive format in the Linux/Unix/Mac OS X world. You can open the archive and modify its internals. However, that can lead to producing unusable configuration, effectively meaning you could repurpose hundreds of devices with a totally useless configuration. So beware!

Per-machine configuration

If a file named MACADDRESS.cfg exists on the boot medium (meaning the MAC address of the local machine), it will be preferred over config.cfg. That means, you can prepare your USB stick to automatically repurpose different devices with different configuration.



Important: Type MAC addresses in a no-colon/no-dash format. So do not write 00:00:0C:12:A3:BC, nor 00-00-0C-12-A3-BC, but rather 00000C12A3BC.cfg. Only the latter is supported!

Side note: It may seem desirable to add more options such as host names, IP addresses etc. However, that would defy the purpose. When using this method is mostly to pre-distribute a configuration that allows to access the network. If you have networking from the beginning, there is not really a point in preloading the configuration since you could use the management center anyway.

Parameters only preload

The config.cfg contains ALL configuration. You may extract the file config.dat manually and just place this file on the boot medium. You can even create per-machine config.dat's named as MACADDR.dat similar to how described above.

Certificates

The methods described above allow to preconfigure newly repurposed devices with "configuration archives" that may already contain certificates. It is very handy to add certificates that every machine has to use to already beforehand in the configuration archive, so you do not have to worry about distributing them. Please see the main article - [Certificates](#) - first to understand about [how NoTouch works with certificates](#).

In some case, you may have to distribute machine-specific certificates, however, such as when using WPA2 or IEEE802.1X client certificates. Fortunately, NoTouch has a mechanism for that as well.

When installing/repurposing, the NoTouch installer looks if the boot medium contains a folder named certificates. In this folder, it expects to see subfolders with the names of MAC addresses, again in a no-dash/no-colon style. All files inside the folder matching the current system's MAC address will be copied to the local certificate store, possibly overwriting existing files.

Machine Certificate Best Practice

We suggest naming machine-specific certificates simply as "machine.crt" or similar. The reason is that you save the effort of entering a different filename into the configuration parameters (such as for [WPASupplicant](#)) on each machine. It is so easy, to configure one template machine, and then create a folder hierarchy where each machine has a folder named after the MAC address with a generic filename in there.