



SDS 24.0

User guide

softthinks™
TECHNOLOGIES

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Welcome to the SoftThinks Deployment Suite (SDS) 24.0 User Guide!

SDS is a unified, modular and multiplatform (Windows, macOS, Linux x86/x64 devices) solution for deployment, maintenance and repair.

WARNING: This product, being scalable and customizable, some features described in this document may not be available in your version of the product and the screenshots may not exactly match your workflow. Also, some customizations of your product version may not be described in this document.

What's new?

This version 24.0 mainly brings the following changes compared to version 23.0:

1. Windows devices support
 - a. Fixed Intel NVMe SSDs S/N detection when using IRST driver
 - b. Fixed CPU detection on Microsoft Laptop Studio
 - c. Fixed screen resolution issue on MS Surface 1724 cutting off dead pixel test
 - d. Fixed microphone test issue with HP Elitebook 840 G3, EliteBook 840 G5, EliteBook X360 1030 G2, ProBook 450 G5 using Conexant audio driver
 - e. Fixed AMD CPU clock speed detection
 - f. Completed support for Qualcomm arm64 CPUs Snapdragon 7c and Snapdragon 8cx Gen 2 & Gen 4
 - g. Added/updated drivers in boot images for:
 - i. Microsoft Surface 3 (battery, audio, touch), Microsoft Surface Laptop 2
 - ii. Lenovo X1 Fold Gen 1 (Intel SST 10.28.00.6539)
 - iii. HP 840 G3 (Conexant driver) & HP 840 G8
 - iv. Dell, HP & MSI devices with Realtek audio chips
 - v. Devices with Intel Smart Sound Technology
 - vi. Devices with Intel Touch technology
 - vii. Devices with Intel graphics chips
 - viii. Devices with biometric capability
 - ix. Devices with Intel I219 LAN chip
 - x. Devices with Realtek RTL8852B/ RTL8152/RTL8153/RTL8155/RTL8156 network chips
 - xi. Devices with Mediatek Wi-Fi chips
 - xii. Devices with ATTO chips
 - xiii. Servers with ADAPTEC HBA 1000 family chips
 - h. Added drivers loaded dynamically (WINPE_ONLINE_DRIVERS) for WinPE Hardware Diagnostics
 - i. Dell Inspiron 5505, Latitude 5175 and Precision 5510
 - ii. Lenovo 80FVB and 81CT
 - iii. Microsoft Surface Laptop 2 and Surface Pro 7+
 - iv. MSI GS65 (to fix an audio test issue with sound playback distorted)
2. macOS devices support
 - a. Fixed Mac mini, MacBook and MacBook Pro chassis detection
 - b. Fixed Bluetooth detection issue on MacBook Pro 5,1
 - c. Added/updated drivers in boot images:
 - i. SerialIO driver to recognize keyboard and trackpad
 - ii. Broadcom SD Host controller driver for the detection of the SD card slot
 - d. Added drivers loaded dynamically (WINPE_ONLINE_DRIVERS) for sound cards and webcams support:
 - i. MacBookPro 16" 2019 (MacBookPro16,1)
 - ii. iMac 2013
 - iii. MacBook 12" 2015 (MacBook8,1)
3. Chromebooks & Chromium OS devices
 - a. Added support for Chromebooks

4. Hardware support and detection
 - a. Enhanced USB-Ethernet boot keys compatibility
 - b. Enhanced GPU driver management
 - c. Update RAM decoding to JEDEC specification from January 2024
 - d. Fixed RAM module size detection issue when over 32GB (64GB one reported as 32GB for example)
 - e. Fixed RAM manufacturer detection issue ('UNKNOWN ID:0x.....' or 'UNKNOWN - [.....]')
 - f. Added KIOXIA (KXG), TOSHIBA (AL/MG/HDWR), APACER, MICRON (MTFD), INTEL (SSDSC), INNODISK, OWC, ADATA, SANDISK (eMMC), MUSHKIN and ADDLINK disks manufacturers identities
 - g. Fixed AMD CPU speed detection issue on some devices (Ex: Dell Inspiron 5515 Ryzen CPU)
 - h. Fixed Microsoft Laptop Studio CPU detection issue
 - i. Fixed TPM version detection issue
 - j. Fixed SD card exclusion issue when detecting disks
 - k. Added blades S/N in device S/N field in SQL DB
 - l. Removed limitation of 11 network cards supported
5. Image capture & deployment enhancements
 - a. Added Windows Digital Product Key injection in Windows through SDS Windows Test Manager
 - b. Added the possibility to force deployment to biggest or smallest disk found
 - c. Added the ability to add comments in SDS without having to go to the server to add notes through SDS Console. This way ensures the image captured matches the notes captured, avoids manual mistakes and allows the users making the image without access to the server / SDS Console to put notes
6. Wipe enhancements
 - a. Added the ability to interact with Absolute refurb tool to remove the agent and deactivate Persistence
7. Hexadecimal viewer enhancements
 - a. Added automatic validation based on the presence of a customizable thumbprint
 - b. Added the possibility to exclude USB, SD, MMC storage devices
8. Offline (WinPE) Hardware Diagnostics enhancements:
 - a. General
 - i. Fixed potential crash with corrupted or too long hardware information reported by the device
 - b. Audio test
 - i. Added the possibility to test independently the left and right internal speakers instead of together
 - ii. Fixed issue where the default output device was forced to headphones for the Internal Microphone / Input Jack Test
 - iii. Added workaround for the oem620.inf (Conexant ISST Audio) driver issue under WinPE which plays through speaker instead of headphones on 1st try
 - iv. Fixed issue where the microphone volume was set for the Internal Speaker / Output Jack Test when using the default input device
 - v. Improved volume level management
 1. Automatically unmute the device if it is muted
 2. When setting the microphone volume, the default input device is used too
 3. Fixed an issue where the microphone volume was not always restored back to the exact value
 - c. Storage test
 - i. Fixed potential random crashes at the end of the test
 - ii. Fixed SMART Attributes test result incorrectly recorded
 - iii. SMART Attributes test now automatically close (if no several disks) and send a specific value to ("Feature not present") if no SMART attributes
 - iv. Fixed SMART Status test not reporting "Feature not present" or reporting the same result for all disks
 - v. SMART Status test now also reports CAUTION status
 - vi. SMART Short/Long self-test now returns "Feature not present" if the disk is SMART compliant but doesn't support SMART self-test
 - d. Screen tests

- i. Fixed potential false positive results
 - ii. In display ports test, added a pictogram of each display port to help operator selection
 - e. Screen tests
 - i. Fixed potential false positive results
 - ii. In display ports test, added a pictogram of each display port to help operator selection
 - f. USB ports tests
 - i. Added selection of the type of the USB port to which the operator has plugged the USB key with a pictogram of each of them to help. This information is stored in the SQL database
 - g. Network tests
 - i. Secured network tests settings read (no more case sensitive)
 - h. Webcam test
 - i. Fixed black screen issue with macbookpro13,1 requiring to set up highest resolution available
 - i. CPU/GPU/HDD Monitoring
 - i. Added FMA3 CPU instruction set test
 - ii. Added support for recent CPU/GPU
- 9. Online (Windows) Hardware Diagnostics (WindowsTestManager) enhancements:
 - a. We now increase the output and input volume level to a customizable value during the audio test to avoid failing test because of volume too low, and we can restore the original volume levels after the test
 - b. Made the audio test recording delay customizable
- 10. Manual auditing (SDSQuestion module) enhancements
 - a. Added the ability to automatically close the module if all questions have been answered
 - b. Added new keyword to display the OS DPK article code in the questions / responses default values
 - c. Added the possibility to preselect a response in a dropdown list
- 11. SQL DB and ERP integration
 - a. Added and automated Razor ERP integration in the installer
 - b. Reduced the amount of data sent to SQL DB (deduplicated data and removed not valuable ones)
- 12. Boot images
 - a. Onn installation, added update of SDS component in the boot images if the version distributed with the installer is more recent to ensure that both SDS structure and boot images are synchronized
- 13. Reports enhancements
 - a. Added the possibility to specify a custom size for PDF outputs (typically for labels)
 - b. Enhanced report template grammars to extract substrings / tokens from SQL data
 - c. Added management of new wipe engine's results when a SMART attribute exceeds threshold
 - d. Added interpretation of Hexadecimal viewer closing code
 - e. Fixed CPU nominal and maximal frequencies format
 - f. Added management of "Disk Health Percentage" which is a real-time computed percentage indicator based on a customizable list of S.M.A.R.T. attributes
 - g. Enhanced and synchronized all reports templates
 - i. Results colored in non-graphical templates
 - ii. Added free CPU sockets & free RAM banks
 - iii. Fixed RAM bank id format for specific and unexpected values
 - iv. Added new information in mobiles reports template
 - v. Fixed a typo error in some report templates where disk wear level was used instead of disk health level
 - vi. Optimized reports files size
- 14. General enhancements
 - a. Optimized SDS memory footprint for better stability and performances
 - b. Enhanced screen resolution support and management
- 15. Stability and memory usage improvements
- 16. Various fixes, enhancements and optimizations

We also developed a Dashboard (web portal) to which you can push all operations made on your SDS server(s), make them accessible to whomever you want with specific rights in a very convenient and customizable graphical way. You can also export statistics very easily with many filters and criteria (See SDS Dashboard User Guide).

The version 2.2.0.x of the SDS Dashboard introduced the following changes since SDS 23.0 launch (August 2023):

1. Performances optimizations
 - a. When filling the reporting view
 - b. When exporting large amount of data to Excel file
 - c. When going back to reporting view after having navigated to other views
 - d. When changing date/group/locations filters on the left (added "Apply" button to refresh the view only once all changes made)
 - e. When enabling / moving / deleting columns in Columns pop-up view
2. Web browsers compatibility optimization
3. Reporting view enhancements:
 - a. Added new data / columns:
 - i. Added "General" > "Server name" column
 - ii. Added "Hardware" > "Battery" > "Health Level" column which is the inverse percentage of battery wear level, allowing to show in reporting view and excel export either the battery wear level or the battery health level depending on your needs
 - iii. Added "Hardware" > "CPU" > "Total sockets" & "Free sockets"
 - iv. Added "Disk wipe" > "Disk Health Percentage" which is a real-time computed percentage indicator based on a customizable list of S.M.A.R.T. attributes
 - v. Added "Hexadecimal viewer" category with its result and individual disks checks results
 - vi. Added "Manual Inputs" > "Welcome screen" > "user_click" information from welcome screen
 - vii. Added in "Manual Inputs" > "Welcome screen" mobiles information from welcome screen
 - b. Columns filters:
 - i. Added the possibility to specify several values in bulk (separated by pipe '|' character) for a filter
 - ii. Added the possibility to filter out null / empty values
 - iii. Added different, less than and greater than operators
 - iv. Columns filters are now applied on interpreted values displayed and not only on RAW SQL DB value (for example you were not able to filter a result on "PASSED" value but had to specify "0" or "1" value depending on column type)
 - v. Clicking on FILTERS button in top bar has now the same behavior than clicking on Filters item in any column header contextual menu, meaning that you can now add several filters from both ways
 - vi. Fixed an issue when the value specified in filter contains parenthesis
 - vii. Fixed reset of columns filters when clicking on "COLUMNS" button
 - c. Scenarios
 - i. Non-administrator users can now add and manage their own scenarios
 - ii. The width of the columns is now saved for each scenario
 - d. Made tests comments columns resizable
 - e. Added management of new device / disk wipe results (Aborted, Skipped, SMART Threshold Exceeded / Removed)
4. Reporting details / history sub-view (when double-clicking on any reporting view line) enhancements:
 - a. If a device has been processed several times, we now show the most recent processes on top and the oldest on bottom
 - b. Added Hexadecimal viewer result and individual disks checks results
 - c. Added sub-device S/N in Hardware Diagnostics details
 - d. Fixed incorrect disk wipe result (all the disks were having same result than 1st one)
 - e. Fixed modules incorrectly labeled
 - f. All errors are now reported in "Process completion"

5. Reports enhancements
 - a. Added the possibility to specify a custom size for PDF outputs (typically for labels)
 - b. Enhanced report template grammars to extract substrings / tokens from SQL data
 - c. Added management of new wipe engine (SDSShredder) results when a SMART attribute exceeds threshold
 - d. Added interpretation of Hexadecimal viewer closing code
 - e. Fixed CPU nominal and maximal frequencies format
 - f. Added management of "Disk Health Percentage" which is a real-time computed percentage indicator based on a customizable list of S.M.A.R.T. attributes
 - g. Enhanced and synchronized all reports templates
 - i. Results colored in non-graphical templates
 - ii. Added free CPU sockets & free RAM banks
 - iii. Fixed RAM bank id format for specific and unexpected values
 - iv. Added new information in mobiles reports template
 - v. Fixed a typo error in some report templates where disk wear level was used instead of disk health level
6. Optimized reports files size Excel export enhancements
 - a. Fixed pagination issue when the data contains specific characters interpreted by Excel
 - b. Added the possibility to customize the Excel filename
 - c. Added the scenario selected in Excel file header
7. Scenarios creation usability enhancements
8. Various fixes, enhancements and optimizations

If you created bootable USB sticks with an older version you will need to update them (See [Create Deployment USB stick](#)).

It is mandatory to update your WinPE image(s) to the latest version for full compatibility with all Windows versions and the support of the latest enhancements, bring to Bitlocker for example, but also for the hardware diagnostics.

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Glossary

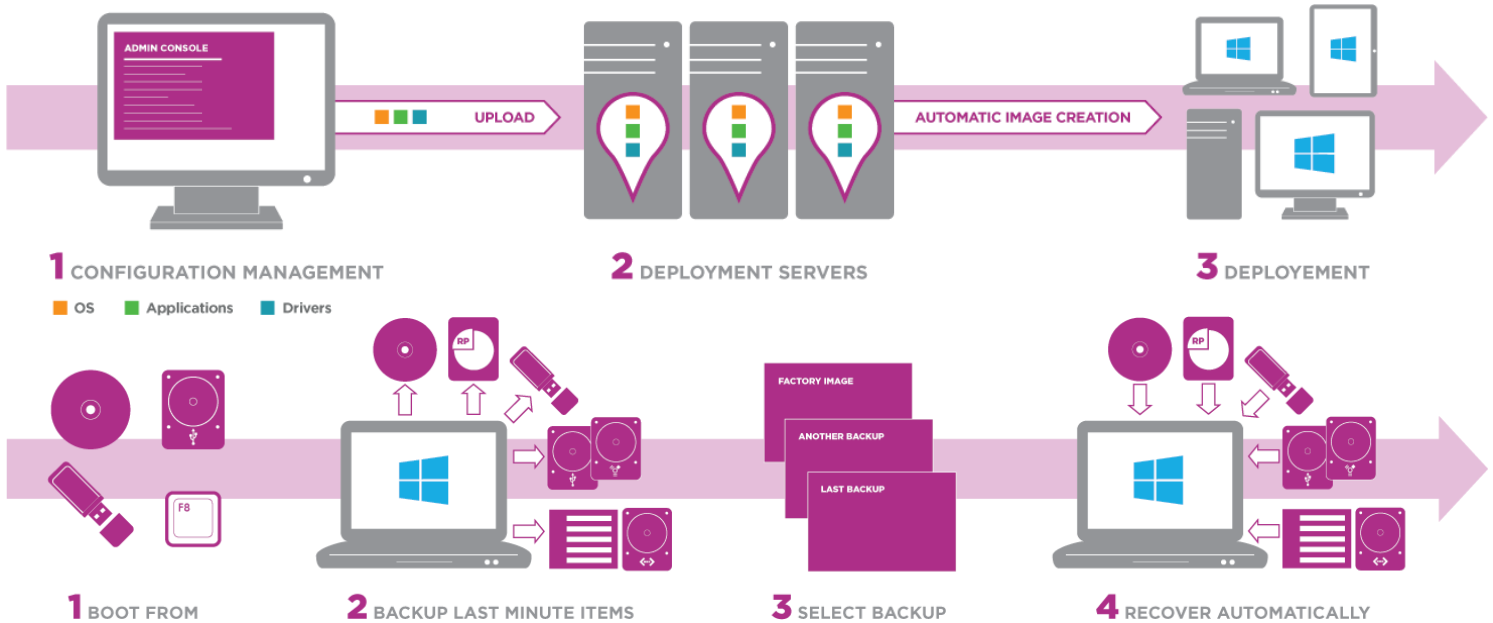
Definitions, Acronyms and Abbreviations used in this user guide

Term	Explanation
ADF	A utomatic D eployment F ile: Similar to the Profile in that it is linked to specific hardware. The difference is that it also is named with a unique identifier for the model being deployed such as the Motherboard Part Number
Boot key / stick	Bootable USB key you can use to boot a computer without PXE boot
BTO	B uilt T o O der: These are PCs that are built as they are ordered by the customer with a specific hardware configuration
CRC	C yclic R edundancy C heck: Error correction method
CTO	C onfigured T o O der: These are PCs that are installed with a specific set of software as ordered by the customer
Factory Image	First complete system backup made in Factory to restore the system to its Factory state.
FAT	F ile A llocation T able: File System managing files up to 4GB
INF	This refers to the text files that permits the installation of peripheral, those files are using the extension .INF (mymodem.INF)
LAN	L ocal A rea N etwork
MBR	M aster B oot R ecord
Nomad Disk	Instead of using a server, you install the software on an external hard drive.
NTFS	N ew T echnology F ile S ystem: file system was introduced originally in Windows NT. It has been used in all versions since Windows 2000. NTFS is reliable, fast, and virtually incorruptible and can recognize and format large hard disks
OOBE	O ut- O f- B ox E xperience
PnP	P lug a nd P lay: system that enables the installation of peripherals without any manual operation on the hardware (I.e. Jumpers)
PnP ID	P lug a nd P lay I Dentifier: strings returned by PnP hardware when enumerated by the operating system
POST	P ower O n S elf T est: Sequence of test that happens while a PC is cold-booting (i.e. RAM count)
Preset	Predefined setup of options that can be applied to any unit (not linked to any specific hardware) in order to deploy Generic Images
Profile	Predefined setup of options linked to specific hardware and so which it can only be used to deploy Static Images to a specific model of computer
PXE	P reboot e Xecution E nvironnement
RIS	R emote I nstallation S ervices
Smart Image	Small update to the base image that is applied to the same hardware that captured from. The system will apply the base image and then the smart images
WinPE / WinRE	W indows P reinstallation E nvironment: lightweight version of Windows used for the deployment of workstations and servers or troubleshooting an operating system while it is offline
WinRE	W indows R ecovery E nvironment: used primarily to help save or salvage your Windows operating system

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Presentation

Designed for your devices, SDS allows you to effectively manage the process of devices deployment / diagnostic / repair / refurbishing.



SDS: A 360° multi-device solution

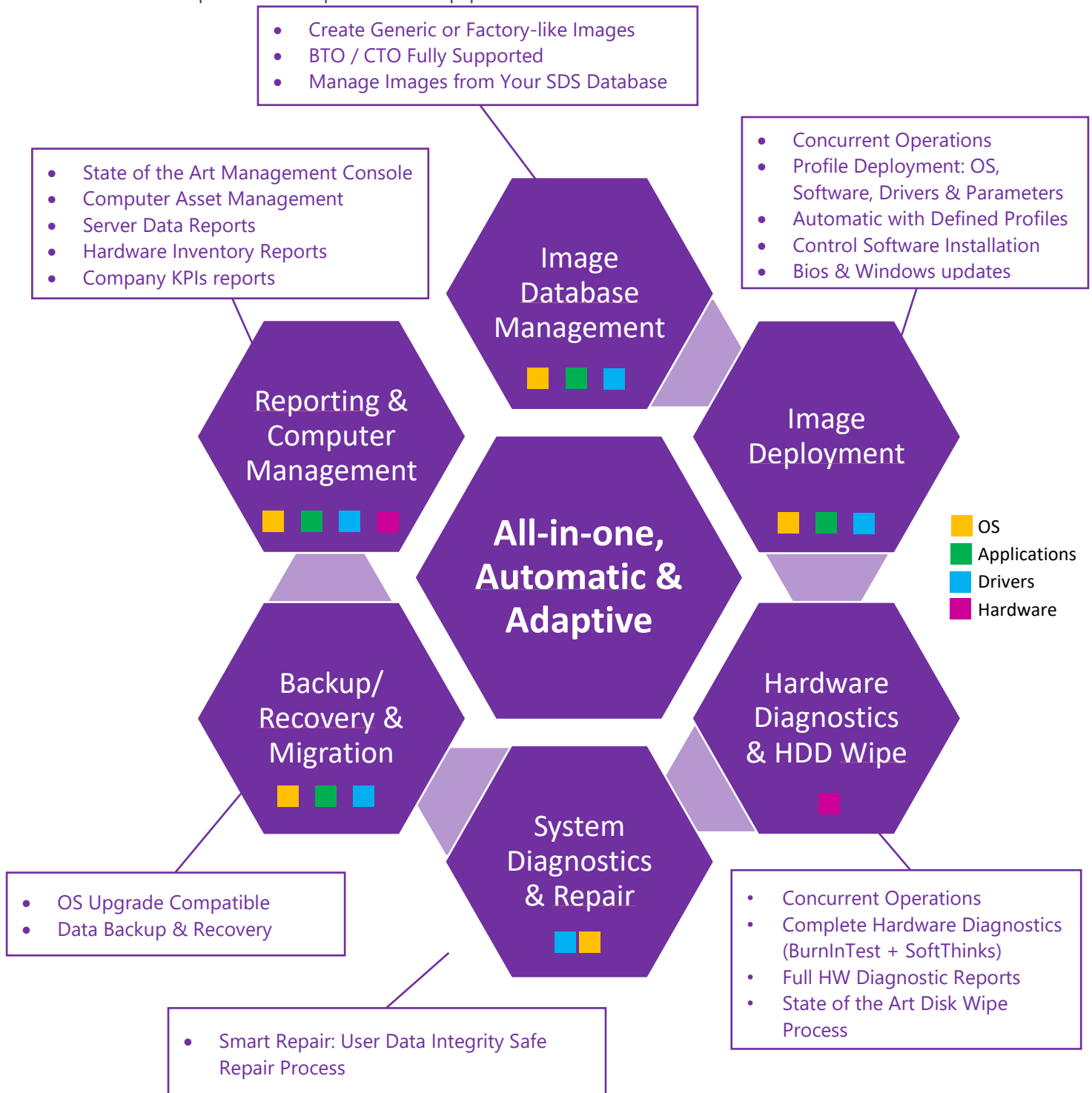
SDS can process the following devices:

- ✓ Windows x86/x64 devices (desktops, laptops, servers, tablets):
 - All SDS features including static and generic deployment, wipe, diagnostic...
- ✓ Windows ARM64 devices (Microsoft Surface Pro X, Qualcomm ARM64 devices with partitions emulating BIOS)
 - Deployment and wipe
- ✓ macOS devices (MacBook, MacBook Air, MacBook Pro, iMac, Mac mini) using Intel CPUs (not Apple Silicon as M1/M2... for the moment)
 - Deployment (through static images with partitions extension), wipe and diagnostic.
- ✓ Linux devices
 - Deployment (through static images with partitions resizing), wipe and diagnostic. Support depends on Linux distribution and disk layout.)
- ✓ Chromebooks and Chromium OS devices
 - Diagnostic and wipe
- ✓ Disks
 - Diagnostic and wipe (through racks, enclosures...)
- ✓ iOS & Android smartphones and tablets (through a partnership)
 - Diagnostic, update, deployment, wipe...

SDS: Industrialization to reduce repair and production costs

- Automatic deployment solution:
 - Deploy according to BOM, hardware PNP, ...
 - Full BTO/CTO support
- One controlled process:
 - Entire process managed by using a powerful script
 - Embedded automatic decision maker
- More services for more profitability:
 - Each module by service, can be activated on an as needed basis
 - High added value branded services for end-user support and maintenance
 - On-site and off-site availability

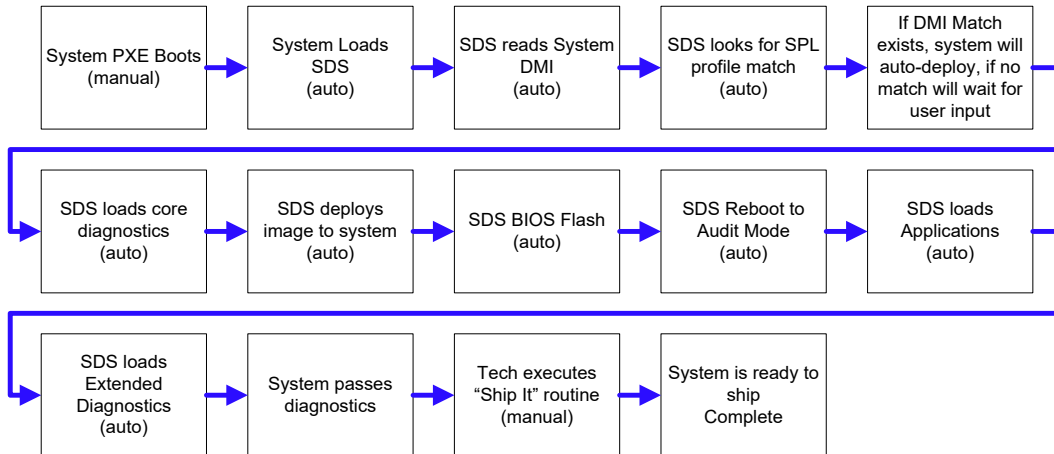
SDS: Unique Computer Support Solution



All-In-One : The Most Complete Deployment, Maintenance & Refurbishing Package Available
Automatic : Capable of Being Automated and Can Run Features Simultaneously
Adaptive : Modify up to 20 Features for Manufacturing Original Equipment, Managing Computer Repair Centers, Running Refurbishing Activities, Maintaining Computers, Running Small Repair Businesses

SDS: Deployment Process Flow

SDS Deployment process – by default the SDS deployment process follows the below steps. This process is modular and can be customized to support individual customer’s needs. This process is just to give you a good idea of the automated process SDS provides. Images used in this process are captured in Audit mode with sysprep.exe running on the desktop.



Dynamic Technology Overview

This chapter aims to give you a broad picture of what is SoftThinks Dynamic Preload and Recovery Technology using the example of a BTO/CTO PC manufacturer.

Of course, all parts briefly covered in this Technology Overview will be thoroughly detailed throughout this manual as we go along with the different processes involved. However, reading this overview should help you understand the more technical issues you will face during the implementation of the technology as described in the manual. You will also be ready to prepare your company's production and recovery strategies.

BTO/CTO PC Manufacturing Industry production facts

Consider the following example:

- A PC manufacturer produces **BTO** PCs using the 17 following devices which require specific set-up during production such as driver integration within the operating system preinstalled before shipment of the PC:
 - 4 x Motherboards
 - 5 x Graphic cards and their bundle software
 - 3 x Sound Cards and their bundle software
 - 2 x Modems and their bundle software
 - 3 x Network devices

Note: Although there can be some other hardware specifications like cases, CPUs, hard disks, we do not take them into consideration in our example, as they do not affect the pre-installation process in production nor the restore of the PC after a crash at end user level.

Only considering the different hardware configurations, the "OEM" already has a potential of $4 \times 5 \times 3 \times 2 \times 3 = 360$ different PCs that can leave the production line (BTO).

- "OEM" is also doing **CTO** PCs, and therefore technicians in production could have to preinstall 1, 2 or 3 different applications (or none) on their PCs according to each client requirements.

Therefore, you can now multiply the BTO PCs figure by the 9 (= 3 x 3) combination of applications "OEM" could ship with its equipment (plus one when no software is shipped):

$360 \times 10 = 3600$ different PCs or with different software configurations (BTO/CTO).

Problem:

In our example, - quite common in the BTO/CTO industry -, it is obviously almost impossible to create as many different static images prepared to fit all or even part of these configurations for a fully unattended preload process in production. This means that, even though "OEM" can prepare a few static images for some PCs, the technician would very often have to complete the pre-installation of most PCs produced manually.

Answer:

SoftThinks offers with the Dynamic Technology to pre-install all PCs in production with a unique and universal Master Image per operating system and language deployed through the network or with a hard disk using a replication platform or a cloning software.

Problem:

It also seems almost impossible to provide the end user with a recovery device that could restore the PC to at least factory level without any manual integration of drivers, bundle software or applications.

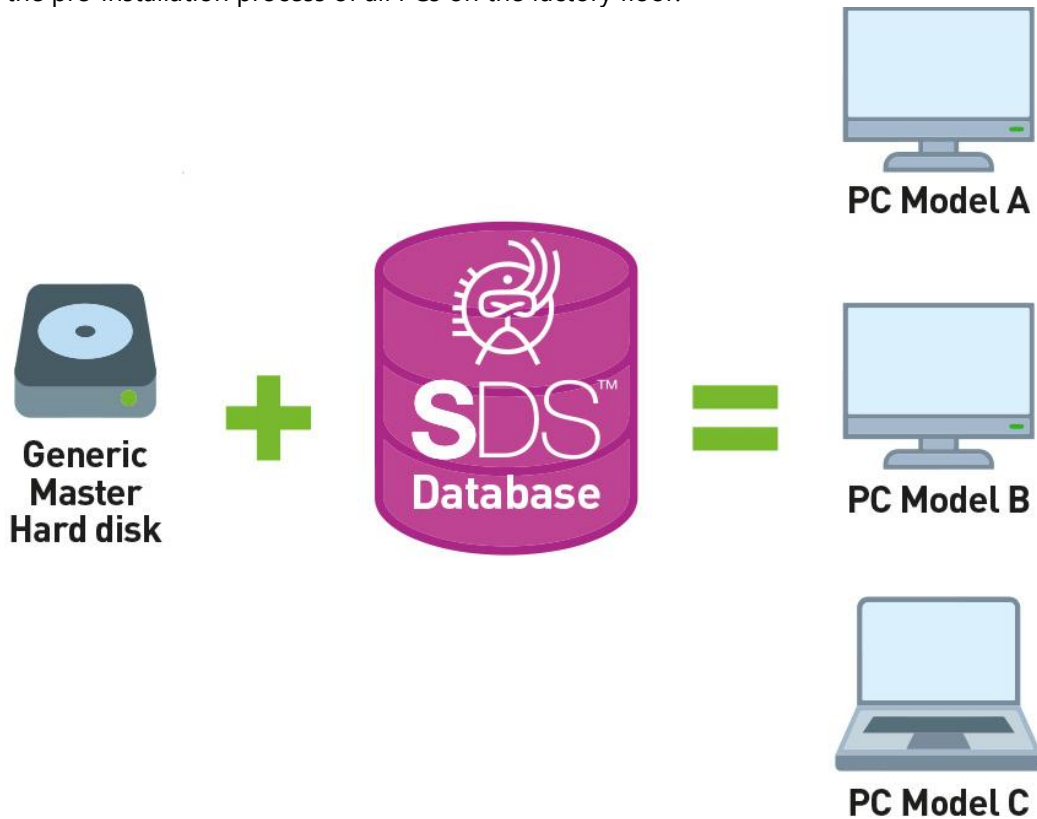
Answer:

SoftThinks Backup and Recovery is a full Recovery Program which can be preinstalled on hard drive.

How does SoftThinks Dynamic Technology handle the BTO/CTO situation?

Basic principle

The Dynamic Technology basic principle is to merge a Generic Master common to the entire production with a database of all items that affect the pre-installation process of all PCs on the factory floor.



During deployment, all components of the Target PC are automatically recognized, and dynamically installed/configured with the items found in the database. The entire database being placed on the same Master, there is no need to create several images for different PCs.

The BTO deployment process is universal and unattended!

The same items are provided to the End User within SoftThinks Backup & Recovery system allowing a full restore of the PC in case of a crash.

SDS Deployment Environment

The best environment to take advantage of the SDS Deployment system is to have the following.

1. Line - Have a production line setup to allow for several PCs to be connected.
2. Server – Server running Windows Server 2008R2/2012 with the SDS software installed.
 - a. Please refer to the section on server configuration recommendations for the optimal server configuration.
3. Ethernet Switch - 24 port Gigabit switch with non-blocking throughput 24 port switch should have a 48 GB backplane to allow 2 GB per port.
4. Network Cabling - Cat6 Cabling run from the Gigabit switch to each bay on the line.
 - a. Cables run to the location for the SDS Server for each of the network ports on the server.
 - b. Cat6 cabling is currently the best Gigabit Ethernet Cabled connections for electromagnetically noisy manufacturing environments.
5. Power - The line should have enough power to support the number of units to be processed, the server and the Gigabit Ethernet switches.
6. Systems - Have 2-5 systems loaded with the factory images on those systems.
7. SDS Console System – Can be run from the server desktop for the evaluation.
8. Technicians – 1-2 technicians to train on the SDS process.
 - a. Technicians should be familiar with the current process that is being used at your location.

SDS Line discussion and diagrams

The next step in the process is to use a second line to deploy the software to your systems.

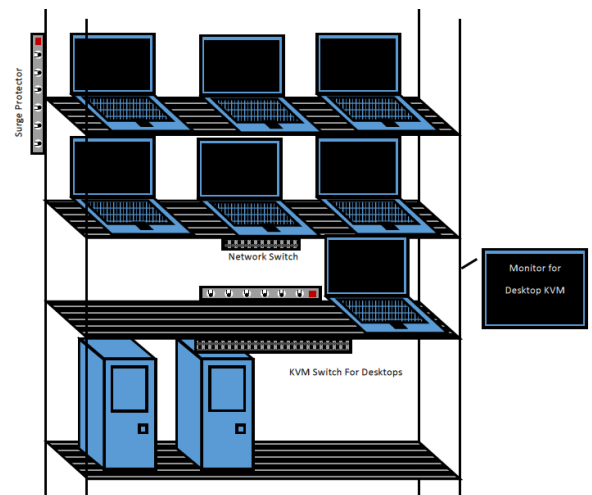
Using a second line for software deployment will increase your throughput.

Here below is a diagram for an entry level SDS manufacturing refurbishment line.

1. Systems are lined up side by side on the line and run through the process.
2. If any systems fail during this part of the process, they are sent to a hardware repair area removing them from the valuable software deployment bay.
 - a. Once the item is repaired it is returned to the line to be run through the process again until it passes and can be shipped.

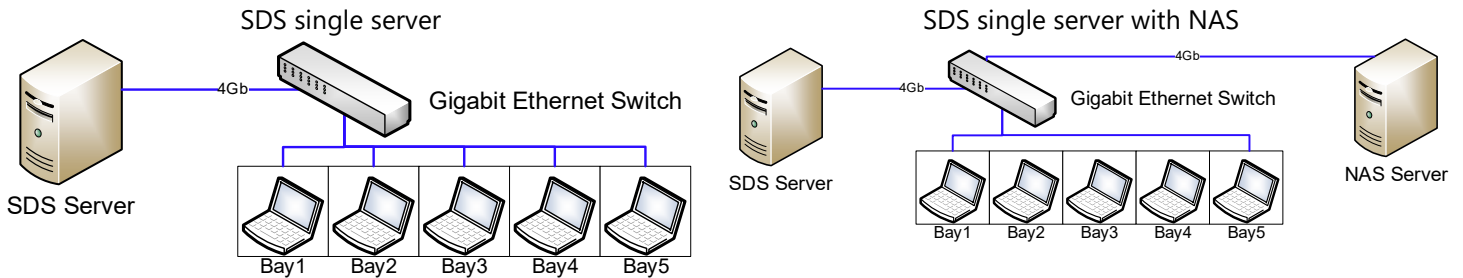


Live portable line for an example



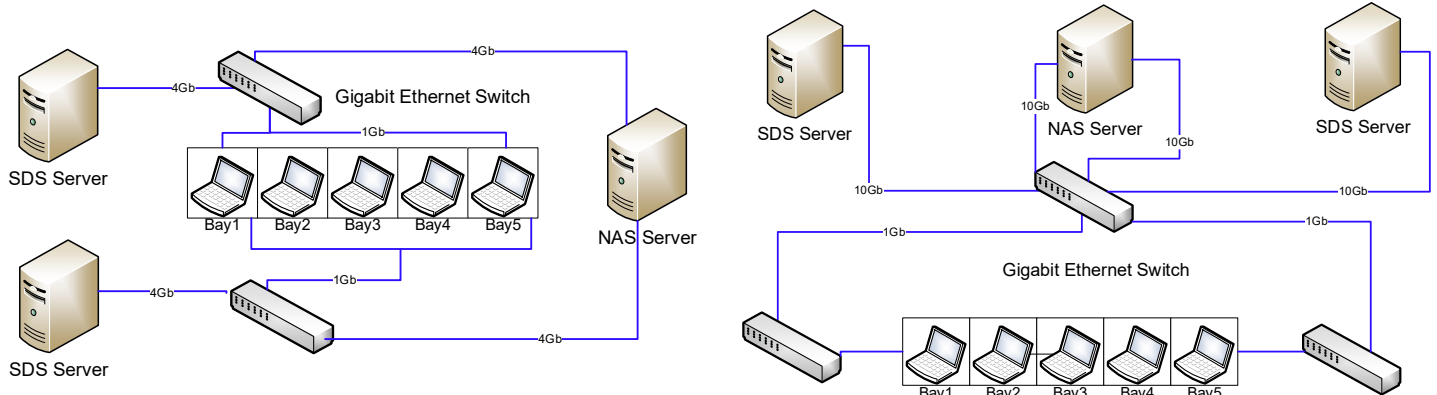
*Proven concept for more units at once in a smaller footprint.
Suggest U shape for work area*

Adding a NAS to the solution allows you to increase throughput by dividing up the work. Server delivers the DHCP addresses the WinPE boot image and the NAS delivers the software being deployed to the systems. Below you will find multiple examples of configuration that can be utilized for maximum throughput during the deployment process:



SDS Multiples Servers with NAS

The following illustrations show how multiple servers can be added to the NAS solution. Depending on network setup, a new server can simply be added to the current layout and utilize the same benefits of single storage area, and allowing for server redundancy.



Recommended configurations based upon the number of systems to manufacture per month or day, these can be scaled based on volume and network design:

Item	Solution 1	Solution 2
# of devices	4000/month or 200/day	8,000/month or 400/day
Servers	1 x Server from the "server configuration for SDS" (C.1)	1 x Server from the "server configuration for SDS" (C.1), additional NIC ports for the server is recommended.
NAS	1 x Server from the "server configuration for SDS" (C.1)	2 x Server from the "server configuration for SDS" (C.1)
Network Switch	1 x network switch with 24 client ports & 4 server ports	2 x network switches with 24 client ports & 4 server ports
Deployment Time	1 hour deployment * depends on below consideration	1 hour deployment * depends on below consideration
Deployment Time Considerations	Target Machine performance (ex: mini vs. i7 core) Preferred diagnostics configuration (cycles) Size of image (20GB OEM Factory image on average)	Target Machine performance (ex: mini vs. i7 core) Preferred diagnostics configuration (cycles) Size of image (20GB OEM Factory image on average)
Solution Capacity	1h/system x 24 systems at a time = 192 systems /day Number of systems will vary depending upon average system load time. Most systems deploy in under 1 hour. Average deployment times on Win 10 PC is 45 minutes per unit. Average download time from deployment server is 10 minute per system. The download speed can be faster if you are using 10Gb or faster backbone and the 1Gb switches are not chained. Does not include DOD wiping time. Wiping time can vary depending on drive type, drive size and computer performances (from 30 seconds for a PCIe Nvme 256GB to 3h for a 500G SATA drive with Celeron processor)	

Installation & Configuration

SDS Server Hardware Minimum / Recommended Requirements

- ✓ CPU: Intel Xeon E3 or Core i5 min / 4x 2GHz with 2MB L2 Cache or greater (8-16 Cores) recommended
 - ✓ RAM: 8GB min / 64GB recommended
 - ✓ Storage: 1 disk for the OS (ideally a 128GB or more SSD) and 1 disk for the database (ideally 2xHDD in RAID) min / 3 to 6 - 7.2K RPM SATA 6Gbps 3.5" HotPlug Enterprise Hard Drives or Higher configured in RAID 5 or 10 (SAS RAID Controller Internal with Battery w / 256MB cache) recommended
 - ✓ Network: 2 gigabit network cards (2*1Gb/s for smaller operations. 10-20Gb/s for improve transfer speeds of images across large volume networks for larger operations or operations maximizing speed with less hookups)
- We can adjust this configuration to scale for the number of systems to be processed at the same time.

SDS Server Software Prerequisites

- ✓ Windows Server 2019 or higher (US or FR native with language pack if needed)
- ✓ Active Directory domain services and DNS Server DNS installed and configured
- ✓ DHCP Server DHCP installed and configured with the DHCP lease time set to 1h or 2h
- ✓ Windows Deployment Services (WDS) installed and configured
- ✓ WDS remote installation folder shared with Full Control for Everyone and labelled "RemoteInstall"
- ✓ Latest Windows Assessment Deployment Kit (Windows ADK) installed (download from <https://developer.microsoft.com/en-us/windows/hardware/windows-assessment-deployment-kit>)
- ✓ SQL server configured on the server where you want to store usage statistics (not required if you want to use SDS Dashboard)

Please refer to [How to configure Windows Server](#) to configure your server step-by-step in order to match the prerequisites above.

Note: It is technically possible, but not recommended, to install SDS on a non-Server Edition of Windows but with the following limitations:

- No PXE boot (but you can boot from a bootable USB key plugged on an Ethernet + USB ↔ USB adaptor)
- No native DHCP (See [How to configure DHCP on a non-server edition of Windows](#))

Note: If you are using a 3rd party antivirus solution on the server (like Eset one), please exclude RemoteInstall folder and sub-folders, as well as SelectorSRV.exe, SelectorSRV_X64.exe and SelectorSRVG.exe processes.

SDS Console Requirements (optional)

By default, SDS Console is installed on SDS Server, but you have the possibility to install it on another system which has access to SDS Server.

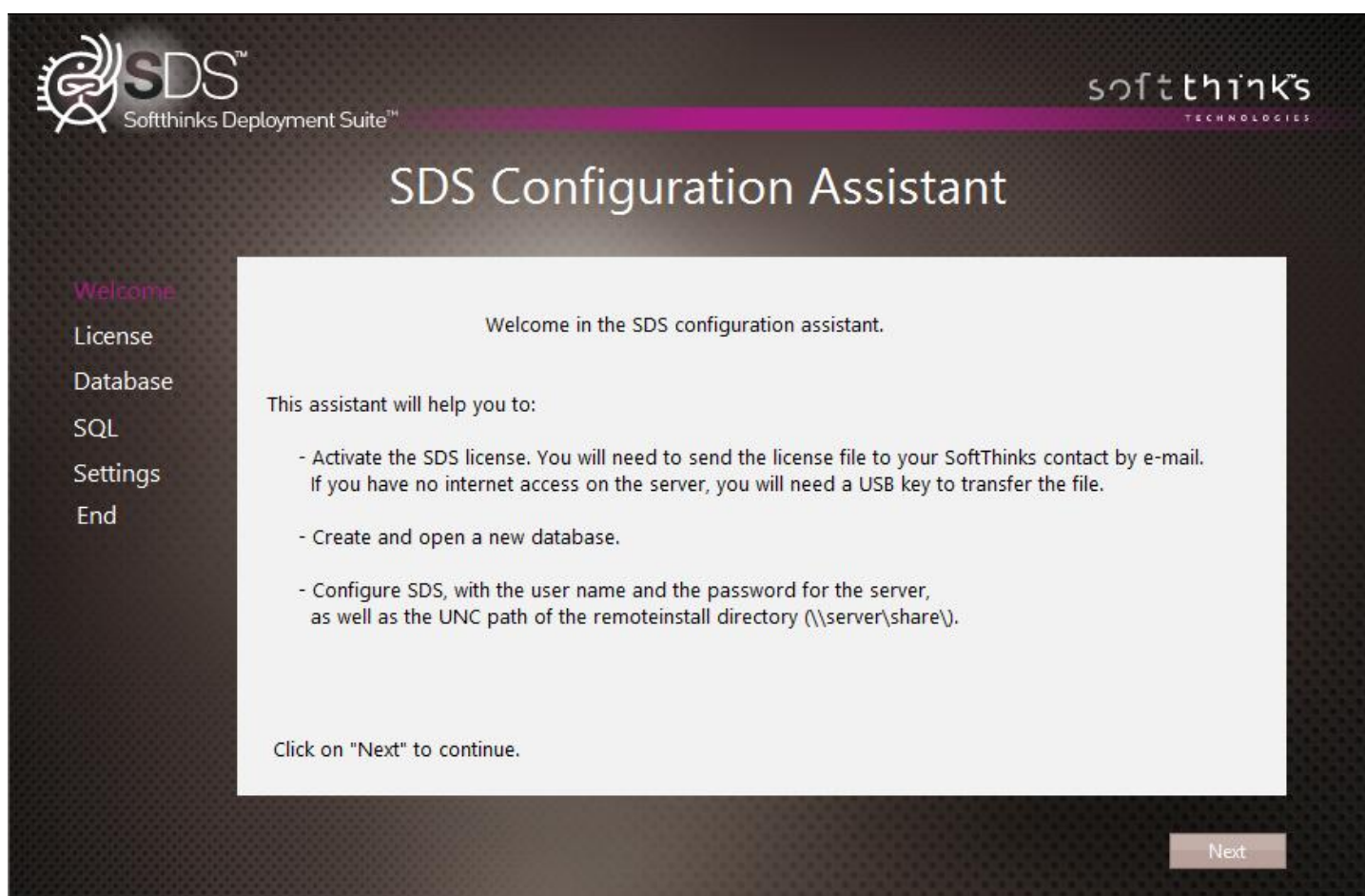
- ✓ CPU: 3GHz CPU with 2LB L2 cache
- ✓ RAM: 8GB min
- ✓ Storage: 250GB 7200 RPM Drive with 32MB Cache – recommended for performance and have room to export and import images
- ✓ Video card: Standard Video Card with at least 1024x768 resolution support - 256MB RAM
- ✓ Monitor: 24" monitor or larger recommended for production to allow better viewing systems remotely using the console.
- ✓ OS: Windows 10 64Bit with Anti-Virus Software loaded

SDS Installation

Once you have ensured that all the hardware and software prerequisites are matched, you can launch the SDS installer (setup.exe in the installation folder) and follow the on-screen steps.

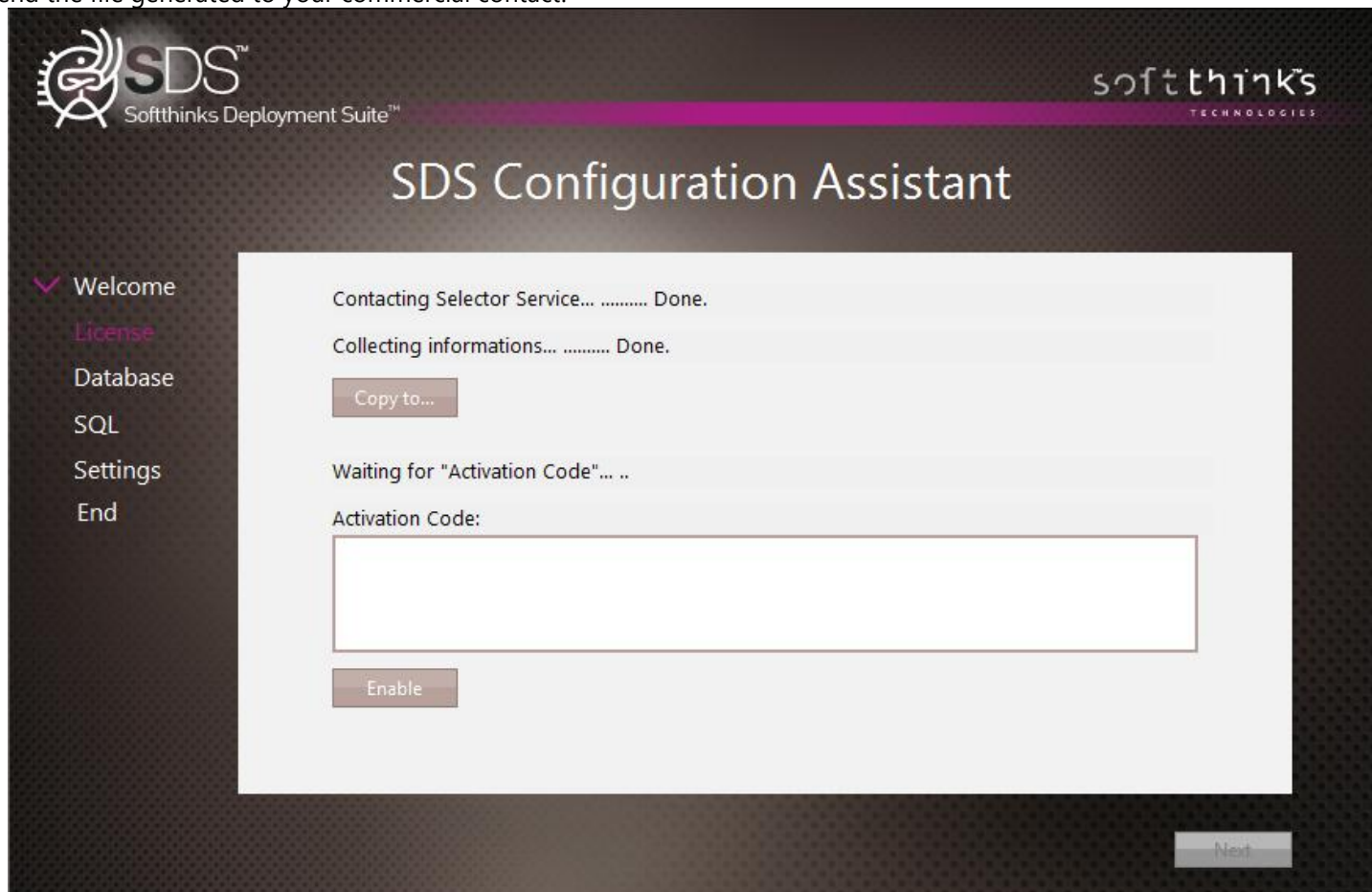
At the end of the process, the SDS configuration wizard will be automatically launched.

SDS Configuration and activation

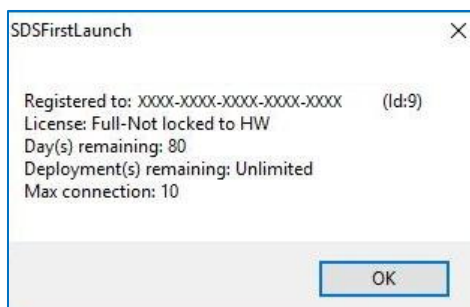


License

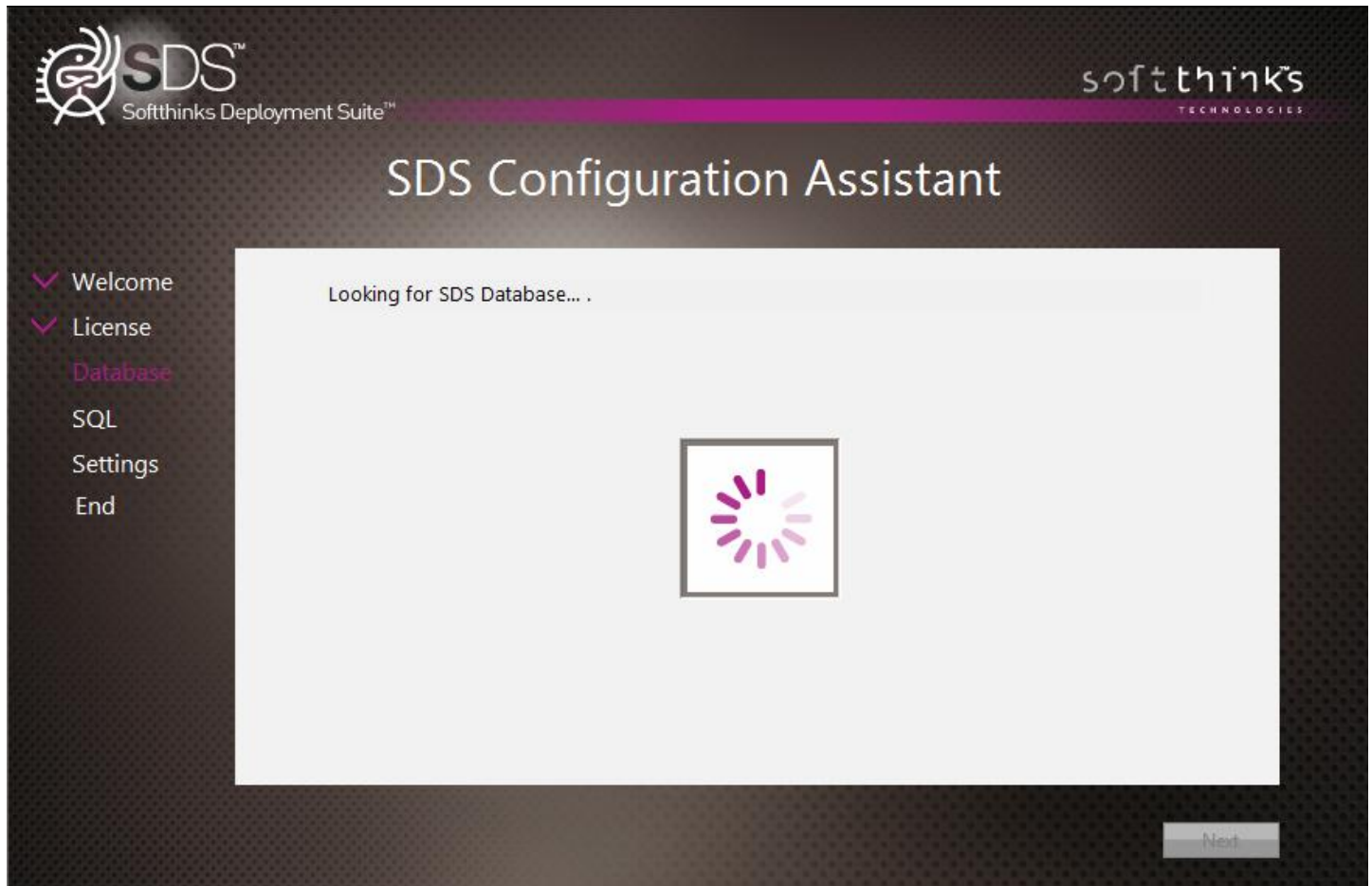
Enter the activation code which has been provided to you. If you don't have it, please click on the button "Copy to..." and send the file generated to your commercial contact:



Once the activation code is successfully verified, a message box will indicate you that your product has been activated, as well as the license type, the days remaining, the deployments remaining, and the maximum number of simultaneous connections allowed:



Database



SQL Configuration

Type the IP address of the server where you want to store the usage statistics (195.154.172.237 if you want to use SDS Dashboard), the username and password, and the database associated:

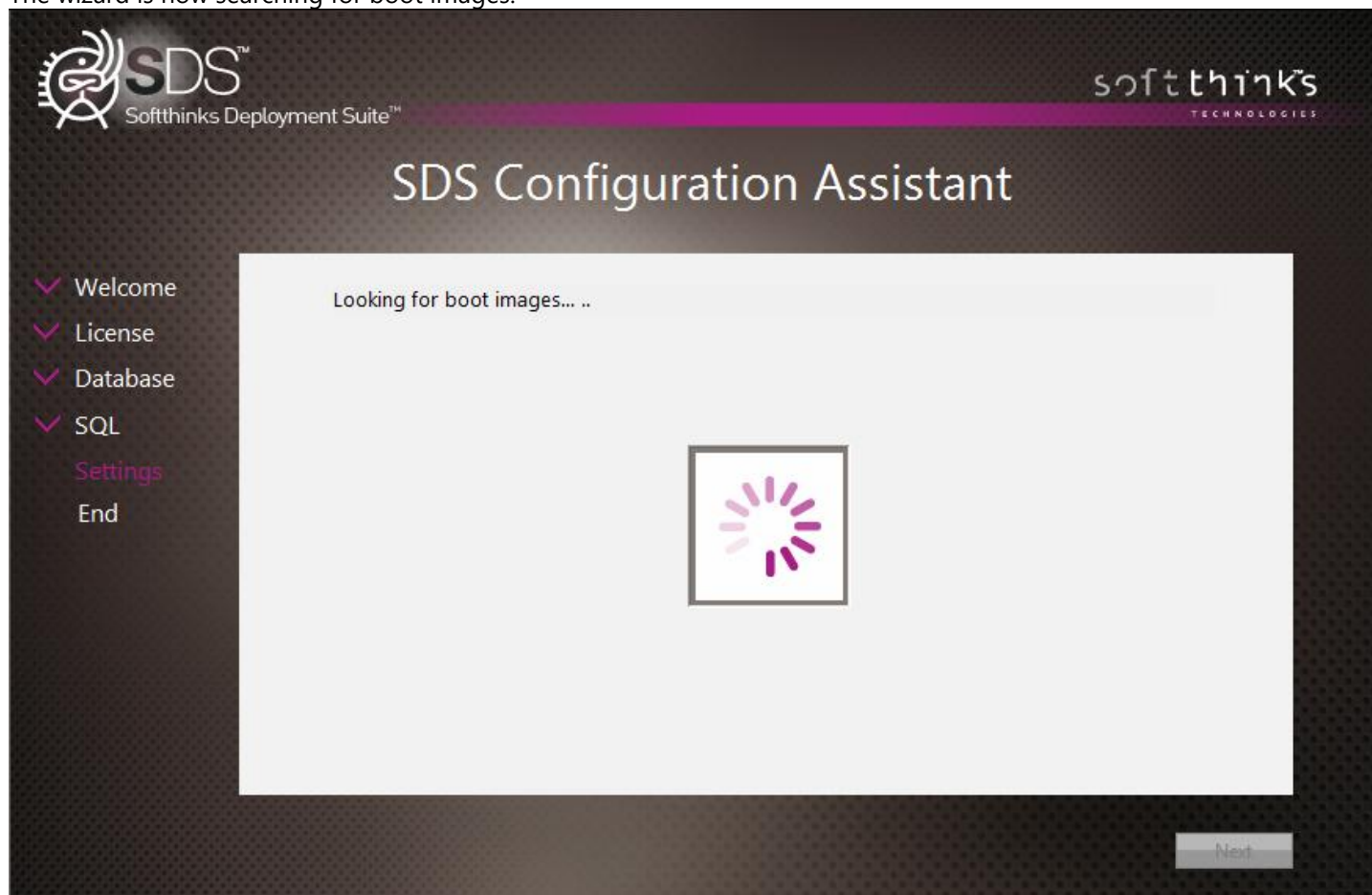
The screenshot shows the 'SDS Configuration Assistant' window. On the left is a sidebar with a list of steps: Welcome, License, Database, SQL (highlighted in red), Settings, and End. The main area is titled 'SQL Settings' and contains the following fields and options:

- SQL Settings**
To save in SQL database, hardware and deployment information.
- Name or IP address of SQL Server**: A text input field containing 'x.x.x.x'.
- Username**: A text input field.
- Password**: A text input field.
- Database Name**: A text input field.
- Enable report**: A dropdown menu with three options: 'Never' (selected and highlighted in blue), 'Only after a successful job', and 'Always'.
- Buttons**: 'Skip' and 'Apply' buttons are located at the bottom right of the form area. Below the form area, there are two 'Next' buttons.

You can generate reports systematically, only in case of successful process or never. To learn more about all report types you can build, please see the dedicated chapter [Reporting](#).

Parameters

The wizard is now searching for boot images:



Enter the server credentials, verify the network path to your SDKDB folder, and chose your language:

SDS Configuration Assistant

Looking for boot images... .. Done.

Username

Password

Network Path \\WIN-FI2QG4LON7V\\REMINST\\SDKDB

Domain deploy.com

Language

Apply

Next

Click on "Apply" to configure the boot images and then click on "Next".

If we detect that the SDS component (DeployLauncher.exe) in the boot image(s) is older than the version distributed with the installer, we offer you to update it in order to ensure synchronization between boot image(s) and SDS structure:

SDSFirstLaunch

DeployLauncher.exe version in the boot image
'c:\\remoteinstall\\boot\\x86\\Images\\deploy.mynomad.wim' is older (v 1.0.1.0) than the
one distributed with the installer (v 1.0.3.3). Do you want to update it?

☐ Apply this choice for all boot images

YES NO

After the installation is completed, the SDKDB Folder will be present in the D:\RemoteInstall Folder. The folders inside the SDKDB Folder and their purpose are listed below:

General presentation of the folders composing the folder SDKDB

The SDKDB folder is present in the folder specified during installation of the server version of SDS, the folders that compose it are the ones below :

ADF: Automatic Deploy File

APPS: Folder containing the applications and informations about the software, in this folder, the folders APP00 *** are present (containing applications) and the DTA folder (file identification softwares).

Bios: Folder containing the Bios.

Bootdisk: Folder that allows the implementation of a recovery partition.

Deploy / Deploy64: Folder containing the files that will be used to deploy the images on the client. It contains the necessary files for the operation of SDS tools. There is a folder for 32-bit versions and one for 64bit.

DIFF: Folder containing the smartimages.

DRV: Folder containing the drivers. Subfolders in it are sorted by categories (USB, video, network, etc. ..).

Env_files: Specific folder for the OS.

Hotline: Folder containing the hotline tools.

Presets: Folder containing the deployment profiles (Hardware recognition).

Profiles: Folder containing the profiles.

Report: Folder containing the report files on the client machine. (a report can be generated at the end of an operation performed by the server SDS).

RIS: Folder containing the images in various formats:

- Casper : SoftThinks™ method to capture file by file.
- VD : Sectorial method capture.
- Wim : Microsoft® method to capture file by file.

Selector: Folder containing the license management.


Temp: Folder containing the log files.


Update: Folder containing the executable "asexec" (the software which will launch the setup at the boot).

You will find on your desktop a shortcut to the SDS administration console named « SDS Console »:



The SDS Console can also be installed on another PC through its standalone installer.

You will also notice a new icon  in the systray area of the server taskbar which allow you to interact with a service called "Selector" ("SelectorSRV" or "SelectorSRV_X64" in the services list) which manages the license and the SDS SQL Database. Please see the dedicated chapter [Interacting with Selector service on SDS Server](#) to get more details.

Before processing any device, please ensure that SDS can join the SDS SQL DB. If it's not the case, you will see a warning overly on the systray icon:  **When you see this overlay icon, DO NOT restart/shutdown the server, or stop the service.** We put in place a buffer in memory to manage short disconnections that we flush as soon as the connection is restored but if you restart/shutdown the server, all the operations made while the connection to the SQL Database was broken will be lost.

The SDS server is now ready to have any device booted to it.

Booting a device into SDS environment

Windows / Linux Devices

The first step in the process for using SoftThinks Deployment Suite will be to PXE boot a unit (Laptop, Desktop or Server) to the SoftThinks Server. In order to do this, you will have to go to the unit's BIOS or Startup Menu and set or select Network Interface or NIC as the boot option.

You can also use a bootable USB stick as an alternative to PXE booting (See [How to boot from Bootable USB Flash Drive with USB Ethernet adapter](#)).

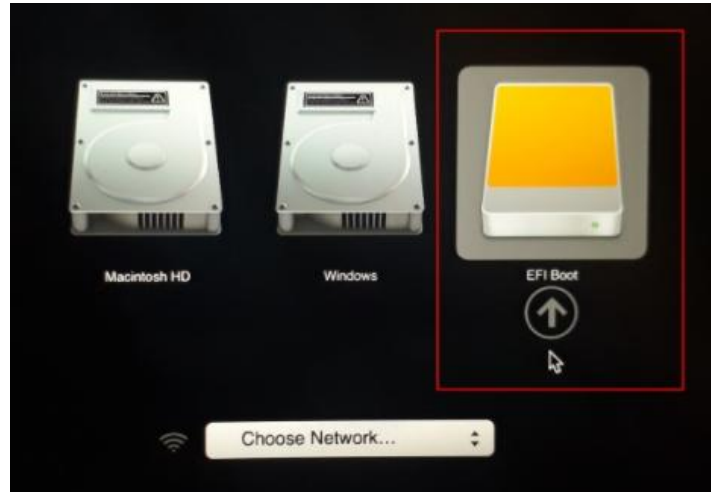
macOS Devices

macOS devices can be booted only through a UEFI SDS USB Boot Stick.

macOS devices without T2 chipset or with T2 disabled

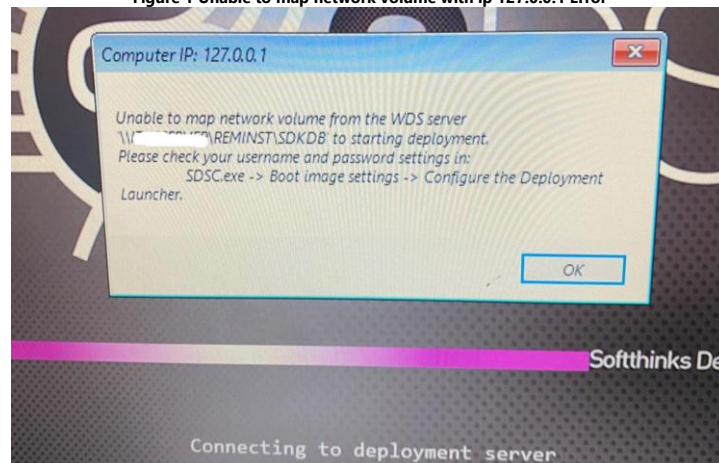
This will require a PC based USB Ethernet adapter (Not Apple) and an PXE_SDS USB Drive. **Please ensure that your USB Ethernet adapter is compatible with Apple devices (with REALTEK chipset for example).**

1. When powering on the Apple without T2 or T2 disabled, press and hold the Command + R and the Apple boot menu will show:



2. Select EFI and it should load to the SDS Menu. If you are using an inexpensive USB ethernet adapter, sometimes these don't have native driver support in WinPE and will not work. You may get an error like the one below if the adapter doesn't have driver support for WinPE.

Figure 1 Unable to map network volume with ip 127.0.0.1 Error



macOS devices with T2 chipset only (for imaging purpose please see [macOS Image Preparation](#))

On macOS devices with T2 chipset, you could not boot from USB by default or boot from a windows device. For this you will need to use MAC Recovery and change boot options. To achieve this, you will need the administrator account from the OS version installed. Without it, user configuration is impossible to change those settings.

1. You have to boot in MAC Recovery with the appropriate macOS recovery:

- **MacOS Recovery**

Turn on your Mac and immediately press and hold these two keys: Command-R

- **MacOS Recovery over Internet**

Turn on your Mac and immediately press and hold one of the combinations

- Option-Command-R
- Shift-Option-Command-R

2. Once in recovery open a terminal:



3. Insert EUFI version of the SDS USB Boot Stick (PXE_SDSC) plugged in the USB port that also has the folder and files from the MACOS SUPPORT\T2 folder on your server.

4. Get the first internal disk with EFI partition with DISKUTIL LIST command:

```
DISKUTIL LIST
/dev/disk0 (disk image):
#:                TYPE NAME                SIZE                IDENTIFIER
0:      GUID_partition_scheme              +2.1 GB             disk0
1:                Apple_HFS macOS Base System 2.0 GB             disk0s1

/dev/disk1 (internal, physical):
#:                TYPE NAME                SIZE                IDENTIFIER
0:      GUID_partition_scheme              *500.3 GB           disk1
1:                EFI EFI                  314.6 MB            disk1s1
2:                Apple_APFS Container disk 2 500.0 GB            disk1s2

/dev/disk2 (synthesized):
#:                TYPE NAME                SIZE                IDENTIFIER
0:      APFS_partition_scheme -              +500.0 GB           disk2
                                Physical Store disk1s2
1:      APFS_Volume Macintosh HD - Data      3.6 GB             disk2s1
2:      APFS_Volume Macintosh HD - Data      737.3 KB            disk2s2
3:      APFS_Volume Preboot                  79.4 MB             disk2s3
4:      APFS_Volume Recovery                  528.9 MB            disk2s4
5:      APFS_Volume VM                        1.1 GB              disk2s5
6:      APFS_Volume Macintosh HD              11.1 GB             disk2s6
```

5. Move to the USB drive with the following command:

```
CD /Volumes/PXE_SDSC
```

6. Run the following command and substitute the “Disk0” with the disk you identified in step 2 above:

```
./SDST2 -W1 -I disk0 -E
-- macOS SDS tool 1.2n SoftThinks 2022 --
-- Setup SoftThinks SDS Boot --
Install external boot
SDS Disk signature: d1187547
Install boot files
SoftThinks PXE device associated to this computer reboot and choose proper
device.
Install done
```

7. Then remove USB device and reboot. The unit will start automatically to SDS. Now you can run all functions of SDS except image capture. If you need to capture an image from a MAC, please refer to [macOS Image Preparation](#).

Chromebooks Devices




Chromebooks are using a dedicated process which includes wipe and deployment, and automatic CPU, RAM and battery hardware diagnostics.

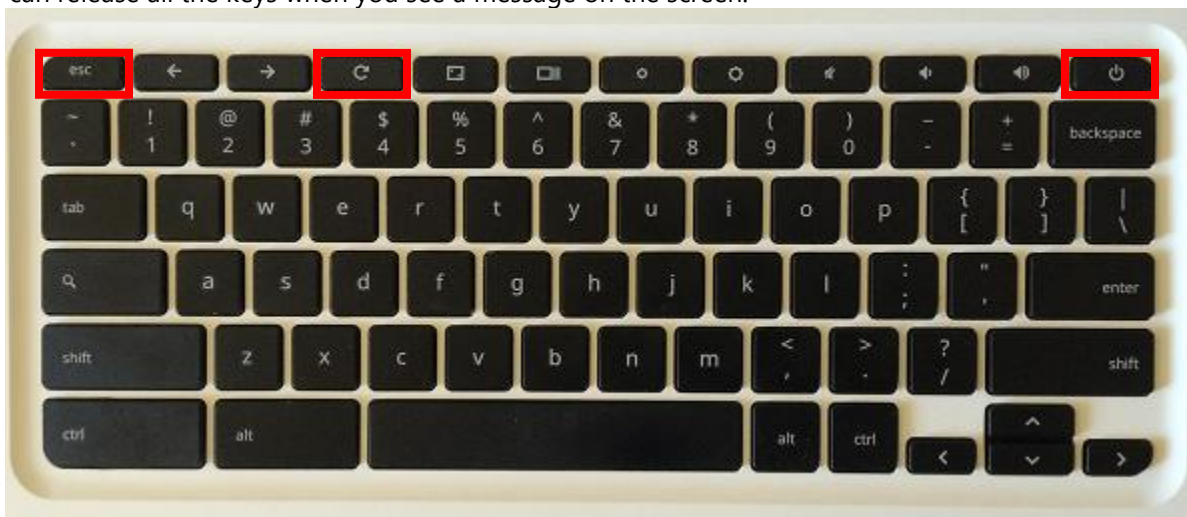
By default, the service requires to have the ports 8000 and 8001 open on the firewall (those ports can be customized in SDSChromebookProcessing.exe.config). In this chapter, we will use 192.168.200.1 as the IP address of the unit the service is running on.

It may be necessary to ensure the Chromebooks have the latest firmware if any errors happen in this process. Chromebook MFG update firmware often via Chrome OS to resolve issues with these units.

Please note that this process will reset the device with Powerwash.

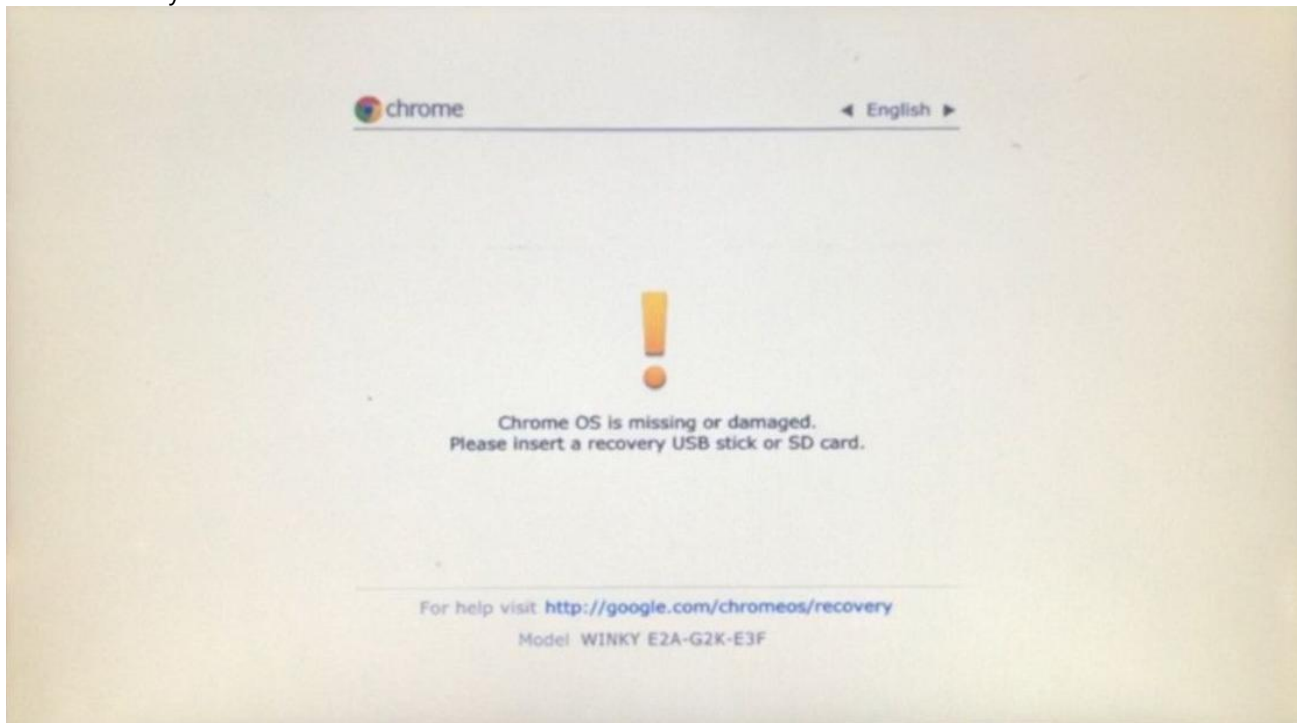
Our process will start once the Chromebook will enter in Developer mode.

1. Connect the Chromebook to the SDS server network and plug it to AC power
2. Press and hold down  and  keys on the keyboard, then press (but do not hold) the Power button . You can release all the keys when you see a message on the screen.

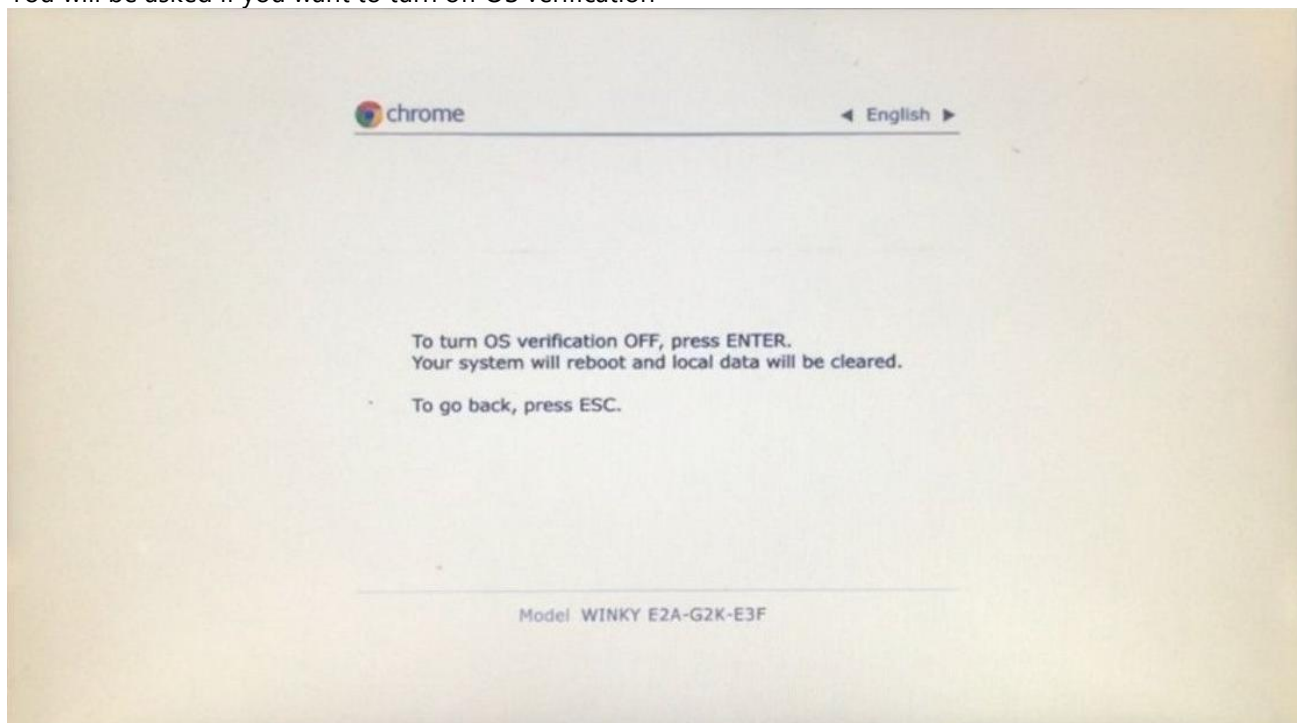


NOTE: Some Chromebooks have the power button near the keyboard, but on other models like the ASUS Chromebook Flip, it's on the side of the laptop. On some models you'll need to hold down Esc + Maximize instead (the Maximize button looks like 4 right-angle brackets arranged into a square shape). If neither key combination works, try shutting your Chromebook down first

- The system will boot to the Recovery Mode screen saying that "Chrome OS is missing or damaged." or just asking to insert recovery media:



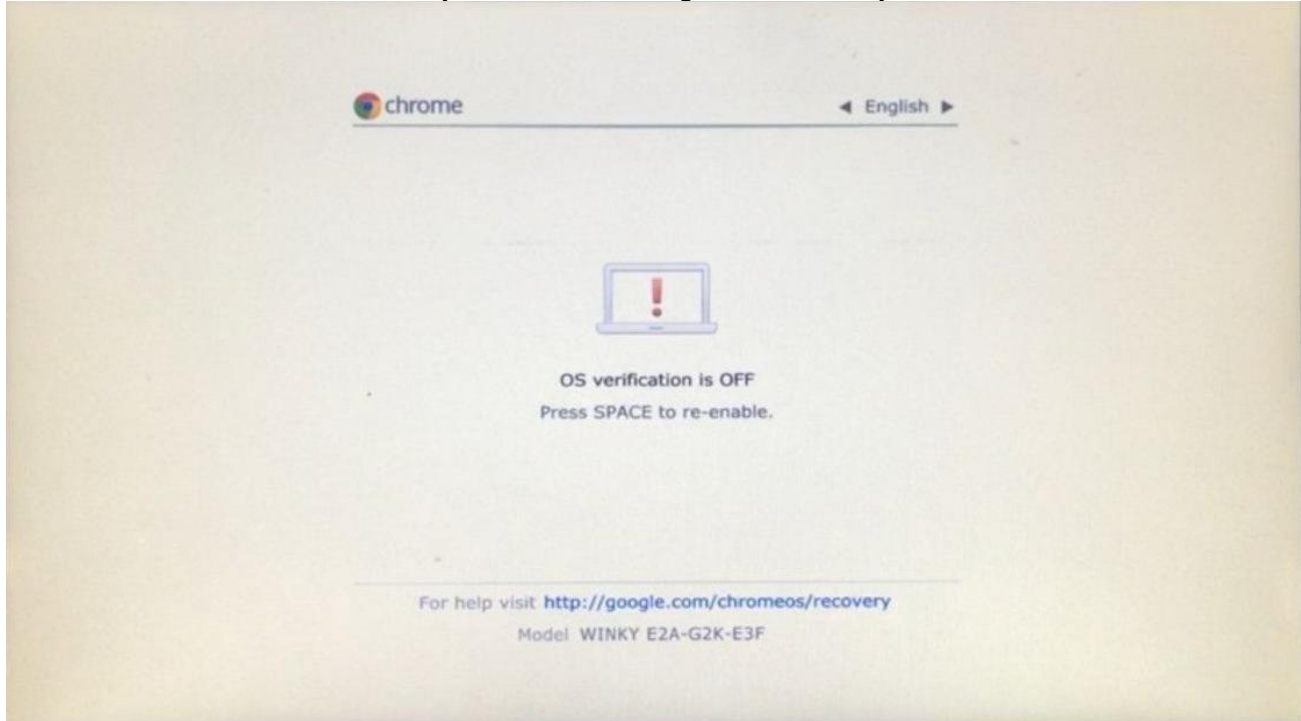
- Press **CTRL** + **D**
- You will be asked if you want to turn off OS verification



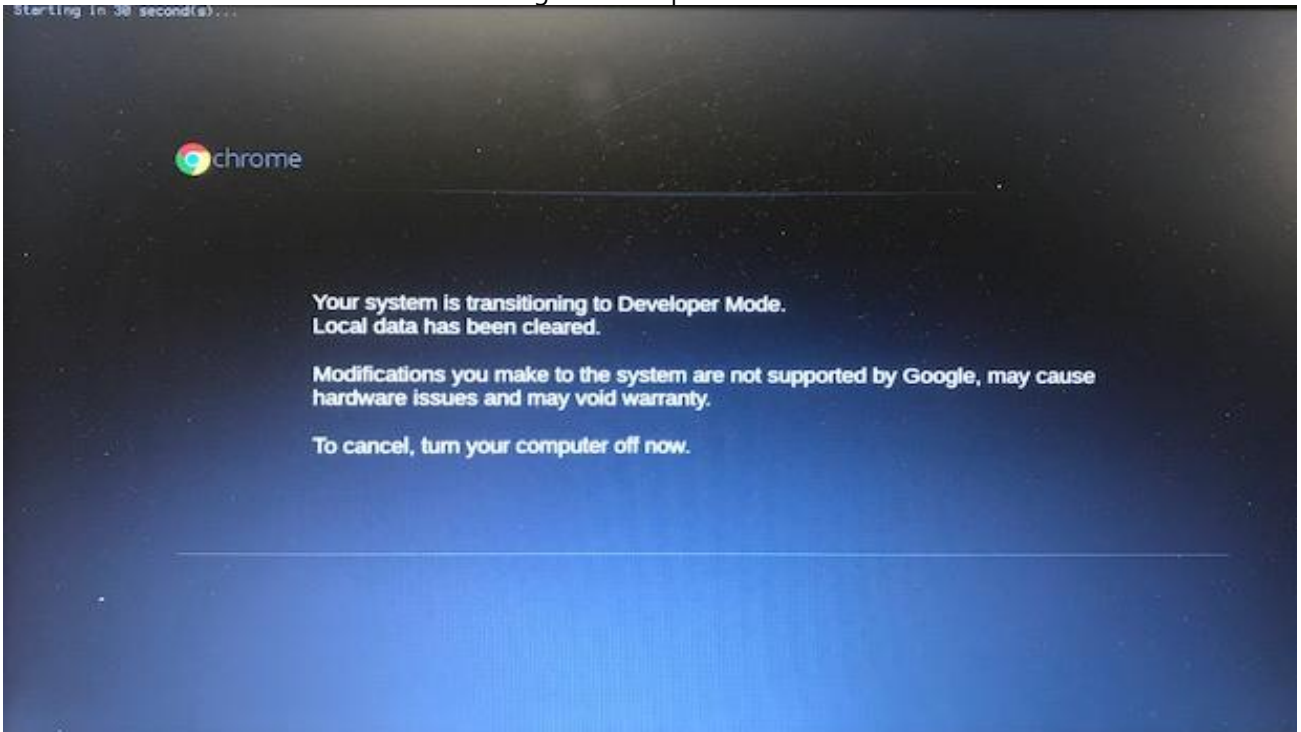
Note: If you don't see this screen after having pressed CTRL+D, power off the device and then power on and you should reach the next screen

- Press **ENTER** key

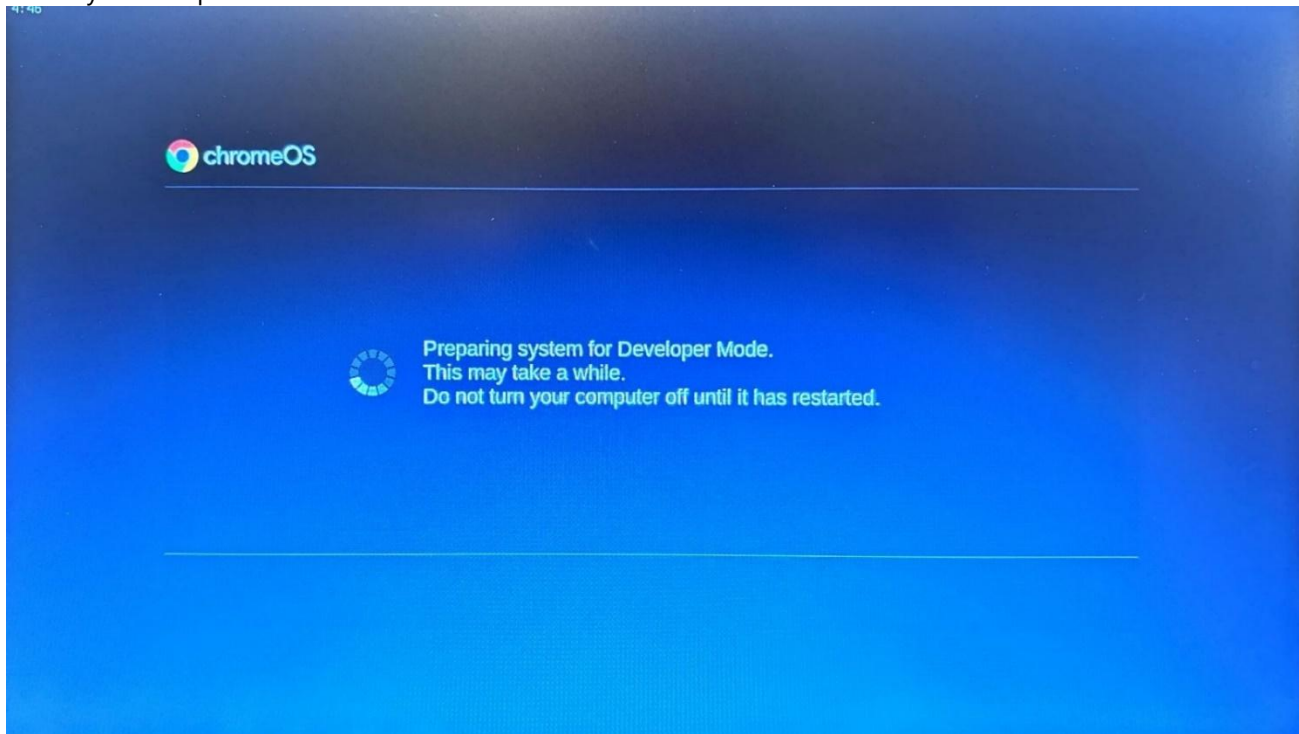
7. The Chromebook should reboot and you will see a message that confirms you have disabled OS verification:



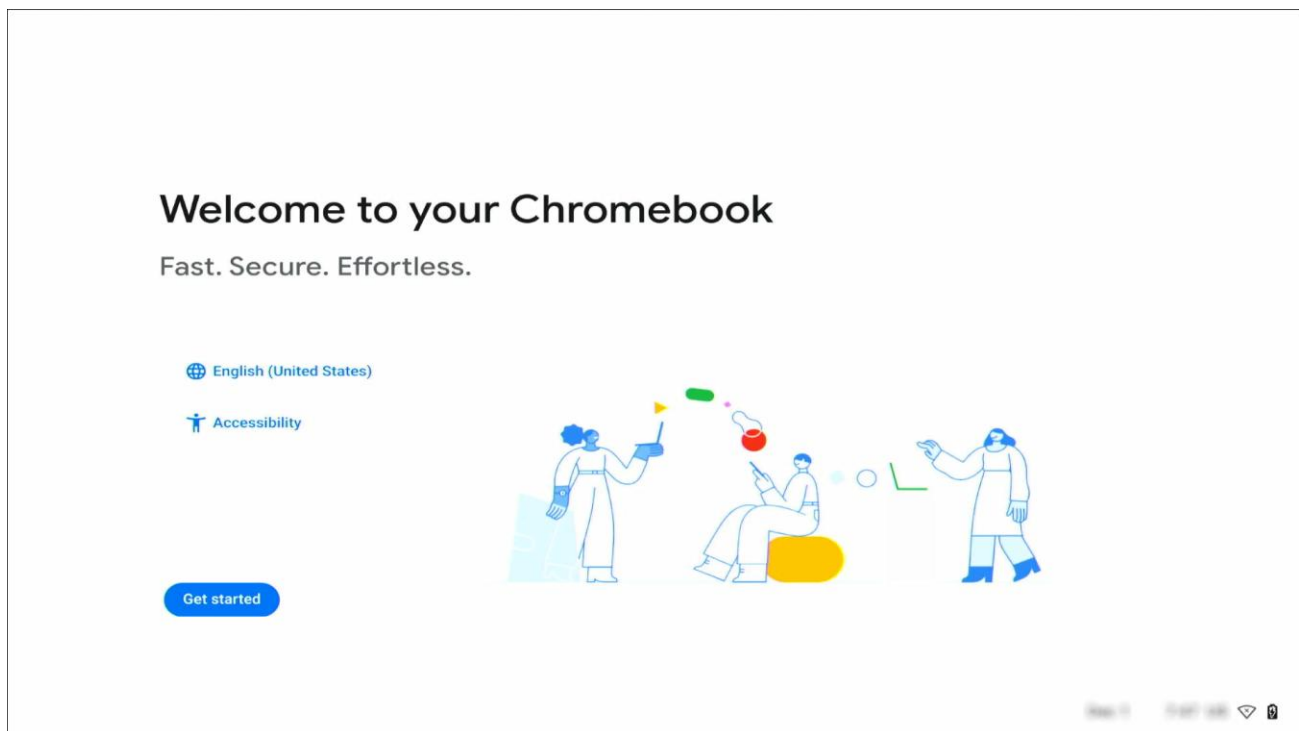
8. Press **CTRL** + **D** again
9. The Chromebook will reboot and transitioning to Developer Mode after a time out of 30s:



10. The Chromebook will be locked for about 5 minutes while it will be wiped and Developer Mode enabled. This is a security feature present in Chromebooks



11. Finally, when the process is complete, the Chromebook will reboot again.
12. Press **CTRL** + **D** again to proceed and set up your device again.



13. Press **CTRL** + **ALT** + **→** to open the developer console



NOTE: Some units may need a reboot before the keyboard shortcuts will work

14. The developer console appears:

Developer Console

To return the browser, press:

[Ctrl] and [Alt] and [<-] (F1)

To use this console, developer mode must be enabled.
Doing so will destroy any saved data on the system.

In developer mode, it is possible to

- login and sudo as user 'chronos'
- require a password for sudo and login(*)
- disable power management behavior (screen dimming):
 sudo initctl stop powerd
- install your own operating system image!

* To set a password for 'chronos', run the following as root:

```
chromeos-setdevpasswd
```

If you are having trouble booting a self-signed kernel, you may need to
enable USB booting. To do so, run the following as root:

```
enable_dev_usb_boot
```

Have fun and send patches!

```
localhost login: █
```

15. Enter "root" as the login and press enter

```
localhost login: root█
```

16. Next enter this command "curl http://192.168.200.1:8000 > /tmp/run.sh"

```
localhost ~ # curl http://192.168.200.1:8000 > /tmp/run.sh█
```

17. Next enter this command "bash /tmp/run.sh"

```
localhost ~ # curl http://192.168.200.1:8000 > /tmp/run.sh
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           % Dload  % Upload   Total   Spent    Left     Speed
100 18158    0 18158    0     0   1108k      0  --:--:--  --:--:--  --:--:-- 1182k
localhost ~ # bash /tmp/run.sh
```

18. At this point you will be prompted to enter some data (customizable) and the automatic hardware tests you specified (CPU, RAM, Battery capacity, Battery Discharge) will be run. To continue with manual hardware tests, you will have to open a web browser to the URL specified:

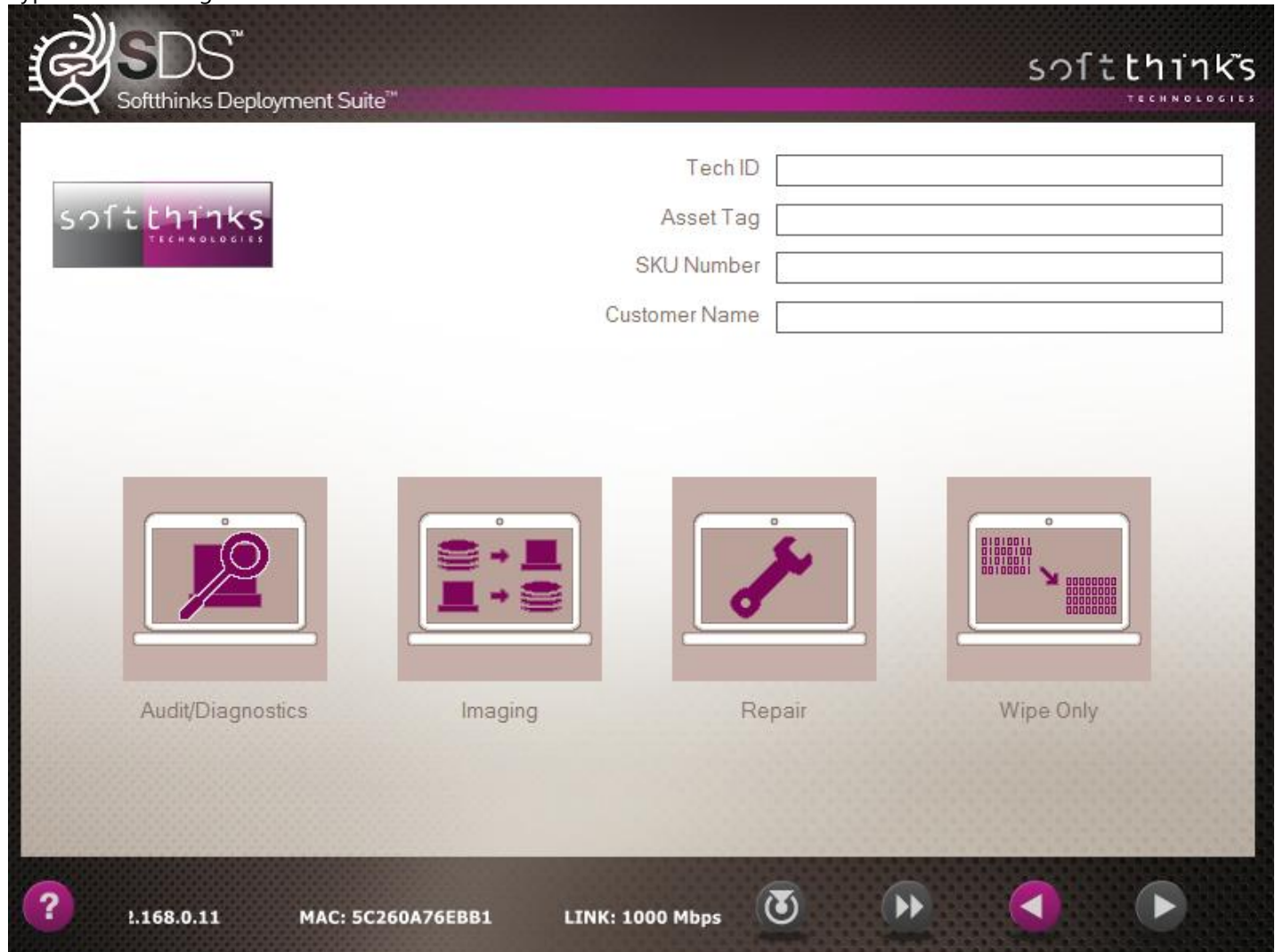
```
#####  ##          ###  ##          ##          ##          ##
##      #####      ##  ##          ##          ##          ##
#        ##        ##  ##          ##          ##          ##
#        ##        ##  ##          ##          ##          ##
##       ##        ##  ##          ##          ##          ##
##       ##        ##  ##          ##          ##          ##
##       #####      #####      #####      #####      ##  #####
##       ##        ##  ##          ##          ##          ##
##       ##        ##  ##          ##          ##          ##
##       ##        ##  ##          ##          ##          ##
##       ##        ##  ##          ##          ##          ##
#####  ##        ##  ##          ##          ##          ##
##  #####      #####      #####      ##          ##          ##
##  #####      #####      #####      ##          ##          ##

Enter User ID: xxxxxx
Enter Asset Number: xxx
Enter Grade Letter: X
Device successfully connected to Softthinks SDS Server 24.0.1 at 192.168.200.1:8000.
The process will be fully automated based on the current SDS configuration
Performing CPU test for 20s, please wait... done.
Performing battery capacity test... done.
Performing battery discharge test for 10 s. please wait...
  Please disconnect the battery charger. Press any key if the test does not start automatically.
  Battery starting level is 100%. Discharging the battery...
  Battery level is 100%. Elapsed time 10s.
Done.
The files successfully sent to Softthinks SDS Server
localhost ~ #
```

SDS Welcome Screen

Once the unit has booted you will see the SDS Welcome screen. This screen can be fully customized (See [How to customize welcome menu](#)).

Typical refurbishing Welcome Screen:



Note: This is just one of an almost unlimited number of configurations that are possible with the software. The Welcome Page can be modified to fit your specifications exactly to make it as easy as possible for your technicians.

From this Welcome Screen you can choose from: Audit/Diagnostics, Imaging, Repair, and Wipe Only

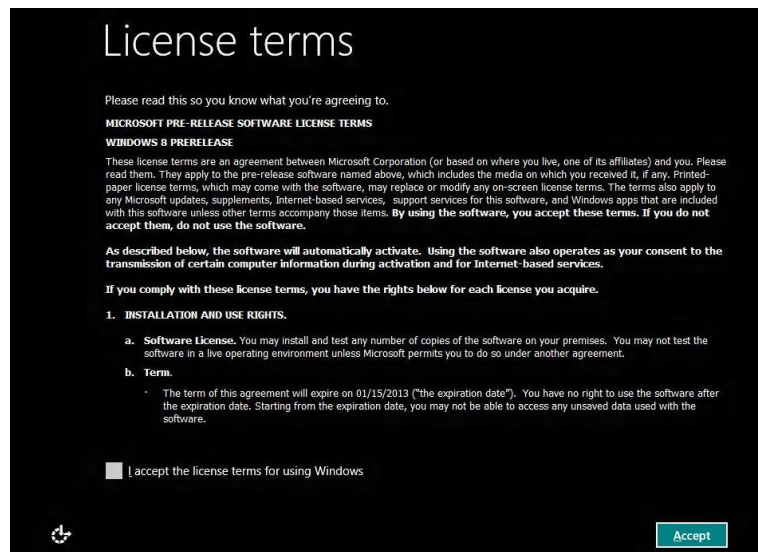
- **Audit/Diagnostics:**
This selection brings you to a menu where you can select from: Audit Only, Audit with Diagnostics, and Audit with Diagnostics W/O HDD.
- **Imaging:**
This selection brings you to a menu where you can select from: Create, Deploy/Wipe/Diagnostics, and Deploy Only

- **Create:**
This will take you Image Capture page and allow you to capture either a Windows Generic or a model specific Static Image for Windows or MAC.
- **Deploy/Wipe/Diagnostics:**
This selection will take you through a series of screens to make your choices for deploying an image to a computer and do the diagnostics and hard drive wiping along with it.
- **Deploy Only:**
This selection will take you through a series of screens to make your choices for deploying an image only.
- **Repair:**
This selection brings you to a menu where you can select from: Auto-Repair, Smart Repair, Hardware Check and OS Tools.
 - **Auto-Repair:**
Will attempt to fix boot issues of a computer, if that fails it will prompt you to back up the user's data, reimage the computer, and then restore the user's data.
 - **Smart Repair:**
Will attempt to fix the boot issues of a computer.
 - **Hardware Check:**
Gives you the options to check various systems of the computer.
 - **OS Tools:**
This selection brings you to a menu where you can select from: Un-delete, Create Migration and data backup, and Apply Migration and data backup.
 - **Undelete:**
Allows you to restore a previously deleted file or folder.
 - **Create Migration and data backup:**
Will allow you to create a backup of a user's files and settings
 - **Apply Migration and data backup:**
Will restore a previously created backup to a user's computer.
- **Wipe Only:**
This selection brings you to a menu where you can select from: Wipe – 1 Pass, Wipe – 1 Pass with Diagnostics, Wipe – 3 Pass, Wipe 3 – Pass with Diagnostics.
 - **Wipe – 1 Pass:**
Allows you perform SoftThinks Adisa Certified Basic 0 Wipe on any hard drive found in a computer, server, or wipe-array.
 - **Wipe – 1 Pass with Diagnostics:**
Allows you perform SoftThinks Adisa Certified Basic 0 Wipe on any hard drive found in a computer, server, or wipe-array, and do the diagnostics of the hard drive(s) and the hardware of the computer that it is in.
 - **Wipe – 3 Pass:**
Allows you to perform the U.S. Standard, DoD 5220.22-M 3-Pass Wipe on any hard drive found in a computer, server, or wipe-array.
 - **Wipe – 3 Pass with Diagnostics:**
Allows you to perform the U.S. Standard, DoD 5220.22-M 3-Pass Wipe on any hard drive found in a computer, server, or wipe-array, do the diagnostics of the hard drive(s) and the hardware of the computer that it is in.

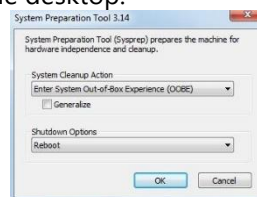
Preparing an image

Static Windows Image preparation (Factory Image)

1. Reload a known good system completely via factory recovery discs, recovery partition, or new in the box – power on/reboot and let the unpacking process proceed to Windows welcome / license screen (might defer depending on Windows version):

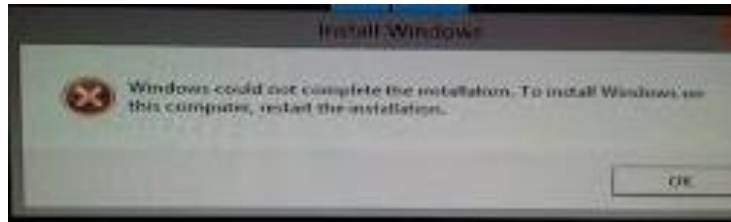


2. While in this screen, press simultaneously SHFT+F10 and a command prompt will appear. Go to the C:\Windows\Panther directory and check to see if there is a unattend.xml or an unattend folder. If there is rename them to unattend_bak.xml and unattend_bak respectively. Exit the command prompt after checking the panther folder. At this point, simultaneously press SHFT+CTRL+F3 (You may need to press the Fn key as well for the Function Keys depending on the system). The system will proceed to reboot into MS Windows Audit Mode and System Preparation Tool (« Sysprep ») will appear on the desktop:

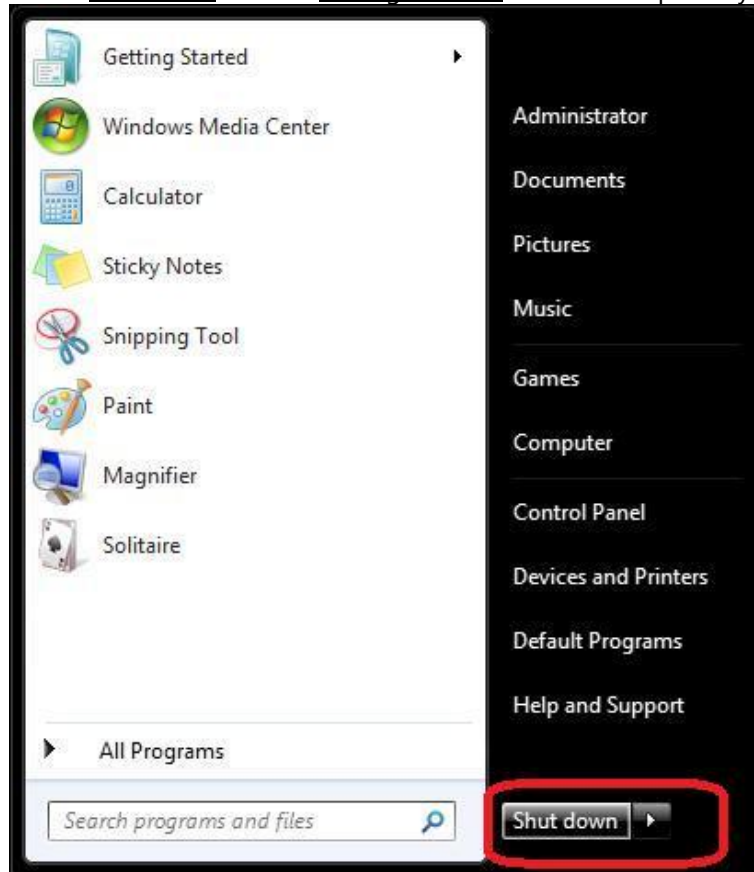


If you receive an error message (below) when attempting to go to Audit mode, you will need to follow these steps :

- a. Press the keys SHIFT+F10 to open a command prompt.
- b. Change the directory to C:\Windows\System32\Sysprep and run the sysprep.exe.
- c. Choose the option for Enter System Out-of-box Experience (OOBE).
- d. Leave the generalize box empty and select OK. The system will reboot to the OOBE screen. You will need to complete OOBE at this point.
- e. Once you are in user mode, to the C:\Windows\System32\Sysprep directory again and run Sysprep.exe.
- f. Select "System Enter Audit Mode" and again leave the generalize box empty.
- g. Select OK and it should reboot into Audit mode at this point.
- h. Open Control Panel, User Accounts and delete the user you created during OOBE process. Make sure to delete the user data as well.
- i. Now the system should stay in OOBE mode.



3. Close the sysprep Windows by using the "X" in the corner. Open a command prompt and run the command "slmgr /upk". The command will clear the current product key from the registry and inactivate Windows. Shutdown system from the start menu or from Settings/Power. This will keep the system in Audit Mode.

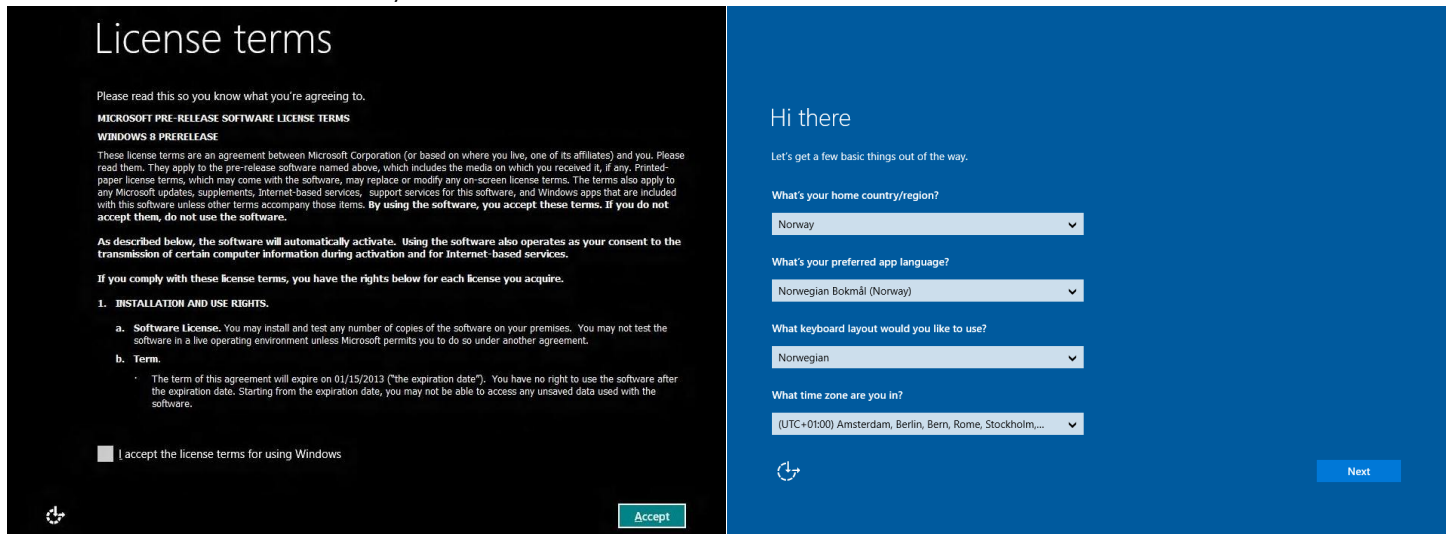


Note: Do not use the SYSPREP tool.

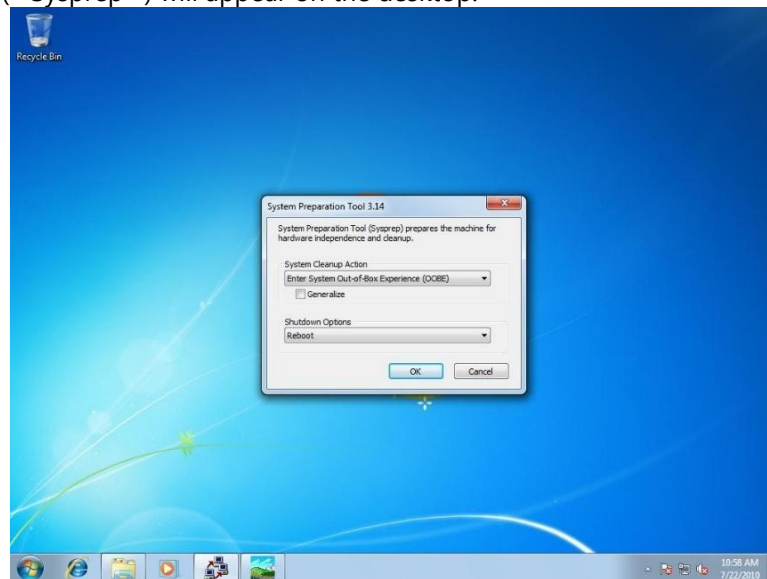
4. The image is ready to be captured. Please follow the steps in the *Image Capture Section*.

Generic Windows Image preparation

1. Reload a known good system completely via Windows install media. After installation is complete, it should be at the Windows License screen / OOBE welcome screen:



2. Enter in Audit mode by simultaneously pressing CTRL+SHIFT+F3 (you may need to press the Fn key as well for the Function Keys depending on the system). The system will proceed to reboot into MS Windows Audit Mode and the System Preparation Tool (« Sysprep ») will appear on the desktop:

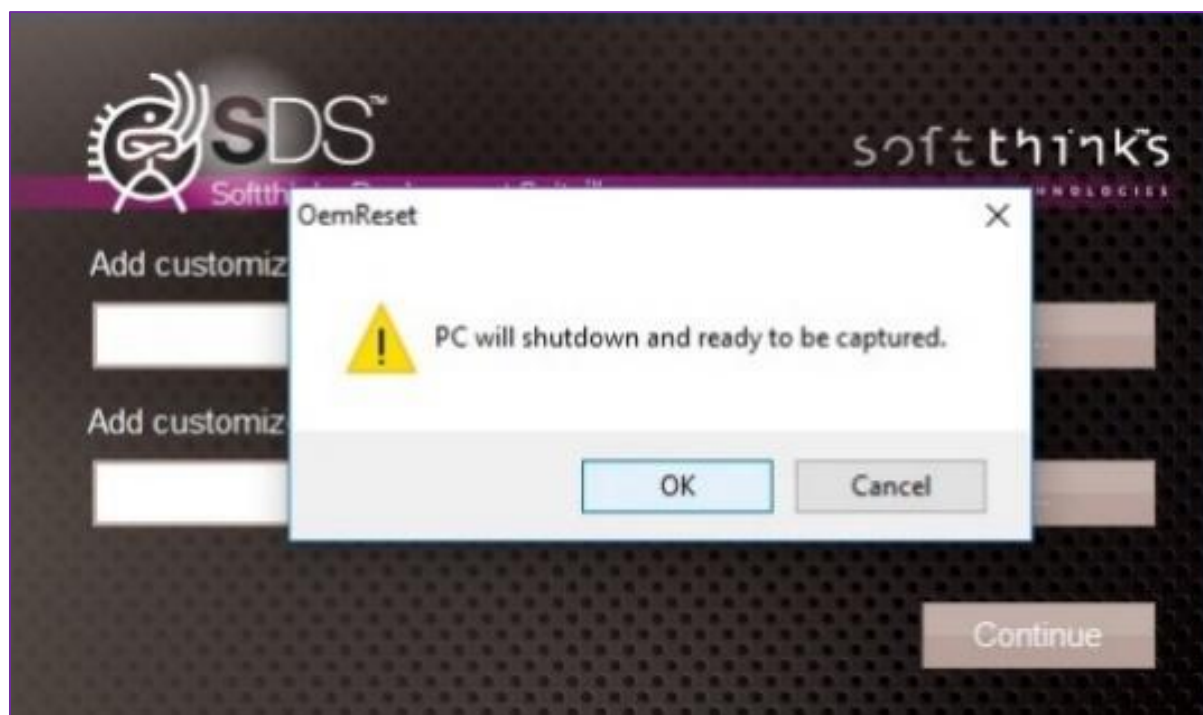
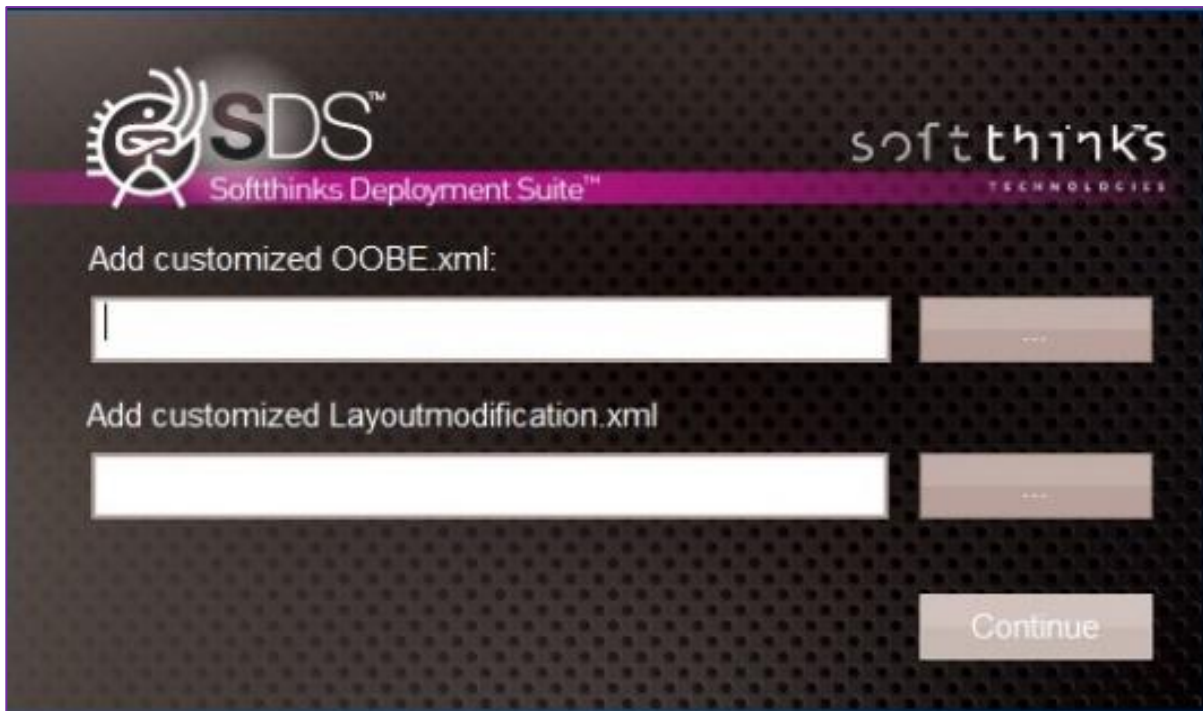


3. At this point, you can install Windows Updates or any other applications you want added to the image. For Windows 7, you can use Windows updates to update the operating system. For Windows 8 and 10, you would have to use PowerShell to update the operating system.

Note: Only install applications that should be a part of the base image, and so pushed to every device deployed with this image (ex: Microsoft Office, Anti-virus programs, etc...). Applications that would need to be installed as part of a special order can be deployed during the deployment process.

4. Since the OS has been updated and the necessary applications are installed, the system is ready to have Master Hard Disk Creator (SoftThinks provided software for Generic Image preparation) installed. Follow the prompts to install and run it to begin the process. At the end, the system will be shut down:





Note: You have to provide your own unattend.xml to fully configure your image (by default, all localization parameters are set to EN-US).

5. The image is now ready to be captured, please follow the steps in the image capture section.

Static Windows Image built from a Generic preparation

1. Deploy the required Windows Image to a known good system. During the deployment process, install **SoftThinks Backup and Recovery** (SoftThinks provided Recovery Solution software) if needed. The Image should be configured exactly how you would want it deployed for the final version.
2. Once the image has been deployed to the system, verify that everything is installed as requested and that drivers have been installed. Also verify that the recovery is working as expected.
3. Once everything has been verified, shut down the system using normal Windows functions. **Do not use the OEMReset that is showing in the right corner of the screen.**
4. The image is ready to be captured, please follow the steps in the image capture section.

macOS Image Preparation

Setup Recovery over Internet

[Preliminary steps for macOS devices with T2 chipset only](#)

You need to boot in recovery mode to install the EFI PXE SDS device to your disk without changing disk topology. This will instruct the mac to support booting from the specific USB Drive used in the steps below as a supported external boot device. Once installed you use only this device, it will be dedicated to the macOS device where you install it. A USB device could be associated to several Apple computer.

8. Insert EFI version of the SDS USB Boot Stick (PXE_SDSC) plugged in the USB port that also has the folder and files from the MACOS SUPPORT\T2 folder on your server.
9. Run **DISKUTIL** list to determine the first internal, physical disk with EFI partition. The example below would be disk1

```
Terminal  Shell  Edit  View  Window  Help

-bash-3.2# diskutil list
/dev/disk0 (disk image):
#  TYPE NAME              SIZE      IDENTIFIER
0:  GUID_partition_scheme  +2.1 GB   disk0
1:  Apple_HFS macOS Base System  2.0 GB   disk0s1

/dev/disk1 (internal, physical):
#  TYPE NAME              SIZE      IDENTIFIER
0:  GUID_partition_scheme  *500.3 GB  disk1
1:  EFI EFI                 314.6 MB  disk1s1
2:  Apple_APFS Container disk2  500.0 GB  disk1s2

/dev/disk2 (synthesized):
#  TYPE NAME              SIZE      IDENTIFIER
0:  APFS Container Scheme -  +500.0 GB  disk2
   Physical Store disk1s2
1:  APFS Volume Macintosh HD - Data  3.6 GB   disk2s1
2:  APFS Volume Macintosh HD - Data  737.3 KB  disk2s2
3:  APFS Volume Preboot             79.4 MB  disk2s3
4:  APFS Volume Recovery            528.9 MB  disk2s4
5:  APFS Volume VM                  1.1 GB   disk2s5
6:  APFS Volume Macintosh HD        11.1 GB  disk2s6

/dev/disk3 (disk image):
#  TYPE NAME              SIZE      IDENTIFIER
0:  untitled                +10.5 MB  disk3
```

10. Move to the USB drive with the following command:

```
cd /Volumes/PXE_SDSC
```

11. Run the following command and substitute the “Disk0” with the disk you identified in step 2 above:

```
./SDST2 -w1 -I disk0 -E
```

This will install our solution into EFI boot partition from disk0 and use External method.

```
/dev/disk20 (disk image):
#:                                TYPE NAME                                SIZE                                IDENTIFIER
0:                                untitled                                +6.3 MB                                disk20

/dev/disk21 (disk image):
#:                                TYPE NAME                                SIZE                                IDENTIFIER
0:                                untitled                                +524.3 KB                                disk21

/dev/disk22 (disk image):
#:                                TYPE NAME                                SIZE                                IDENTIFIER
0:                                untitled                                +2.1 MB                                disk22

/dev/disk23 (disk image):
#:                                TYPE NAME                                SIZE                                IDENTIFIER
0:                                untitled                                +10.5 MB                                disk23

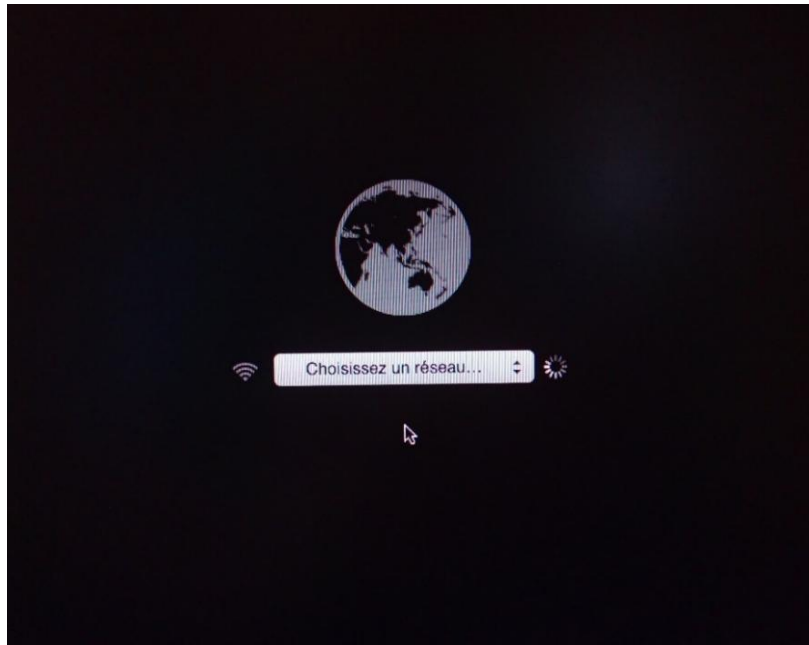
/dev/disk24 (disk image):
#:                                TYPE NAME                                SIZE                                IDENTIFIER
0:                                untitled                                +2.1 GB                                disk24

-bash-3.2# ./SDST2 -w1 -I disk0 -E
-- MacOS SDS tool 1.2, SoftThinks 2020 --
-- Setup SoftThinks SDS Boot --
Install external boot
SDS disk signature: d1187547
Install boot files
SoftThink PXE device associated to this computer, reboot and choose proper device.
Install done
-bash-3.2#
```

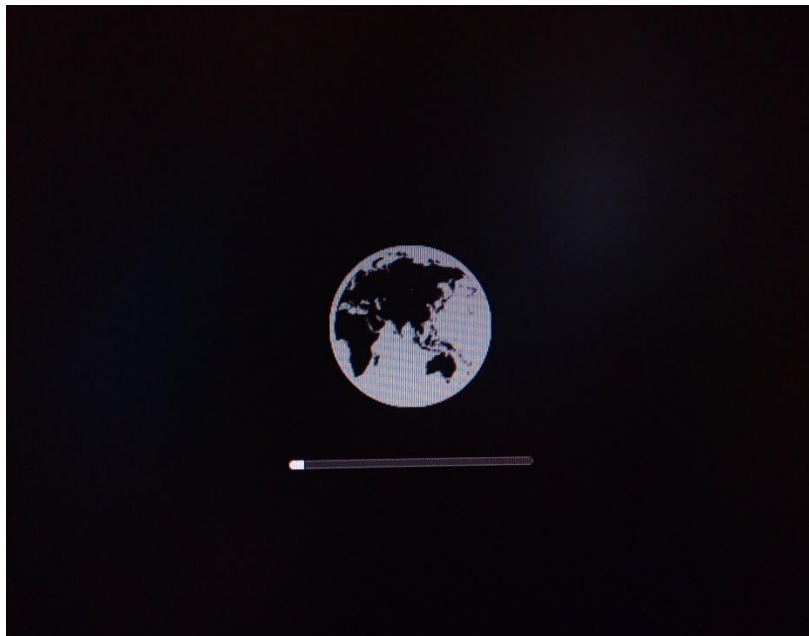
12. Once installed, reboot the computer, leaving the USB disk device connected.
13. When you hear the startup chime, follow the steps common to all x86 devices below

Steps common to all x86 macOS devices (with or without T2 chipset)

1. Boot the Mac in recovery mode: Press Option-Command-R or Shift-Option-Command-R, or press the option to display boot menu. Sometimes the internet recovery is displayed natively, depending on the BIOS.
2. Choose a Wi-Fi hotspot or plug in a network cable to initiate the recovery:



3. It will immediately start to download the recovery program:

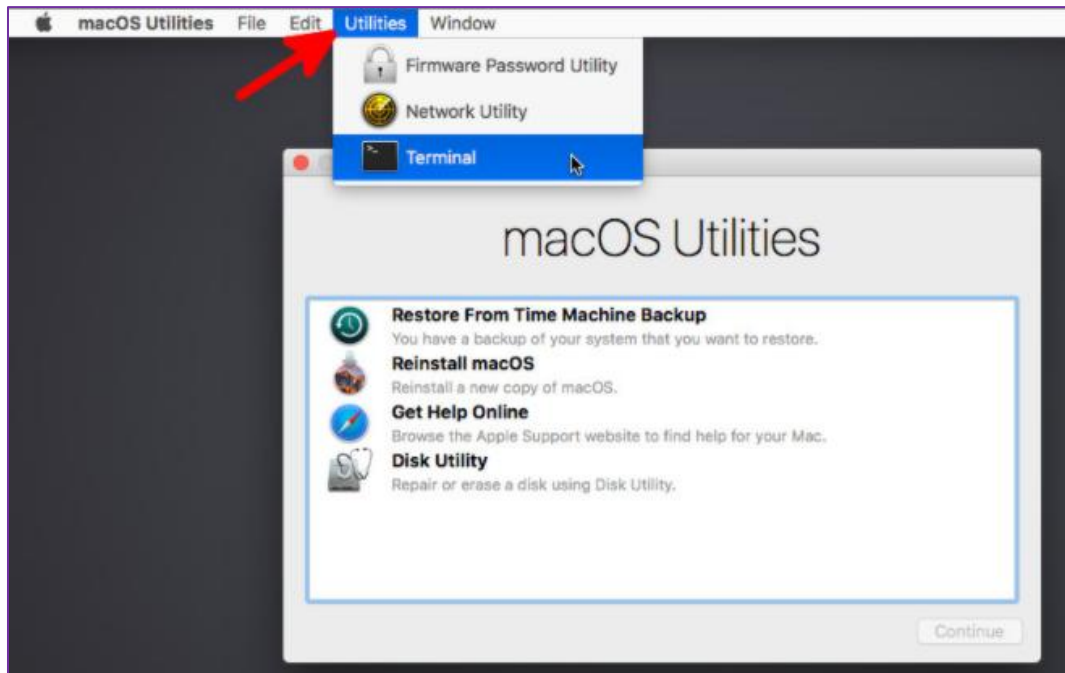


4. Let the recovery process finalize. You should get this screen:



Partition the macOS system disk

5. Launch the Terminal from the "Utilities" menu:



6. Plug a SDS PXE USB boot drive with EFI support made from the SDS console, with a copy of the partitionDisk.sh script and the resize script & app copied directly to the drive main directory. partitionDisk.sh is the script file you will use to format the drive to prepare for image capture. The resize script and app will later be installed to expand the partition(s) for after deployment.



partitionDisk.sh

7. Navigate to the SDS PXE boot drive plugged (PCE_SDSC USB DRIVE):

```
cd /Volumes/PXE_SDSC/
```

8. Execute the partitioning script to setup the system disk size (we recommend setting the size to 32GB for the sole purpose of using the minimum size needed to load MacOS and in turn reduce the time it takes to deploy the image), depending on the drive type:

- For a [APFS] single disk

```
./partitionDisk.sh -single[apfs] 32 "Mac OS X" 1
```

- For a [APFS] Fusion drive (each disk will be setup with 32GB, so the logical container will be 64GB, but it does not matter since the 2 disks will be captured)

```
./partitionDisk.sh -fusion[apfs] 32 "Mac OS X" 2
```

Note: You can create two images on a Mac with Fusion Drive:

1. One with the fusion drive (2 disks) to deploy on Macs with Fusion Drive
2. One with only the first disk (SSD) to deploy on Macs without Fusion Drive

9. The partitionDisk.sh script will create the volume for you:

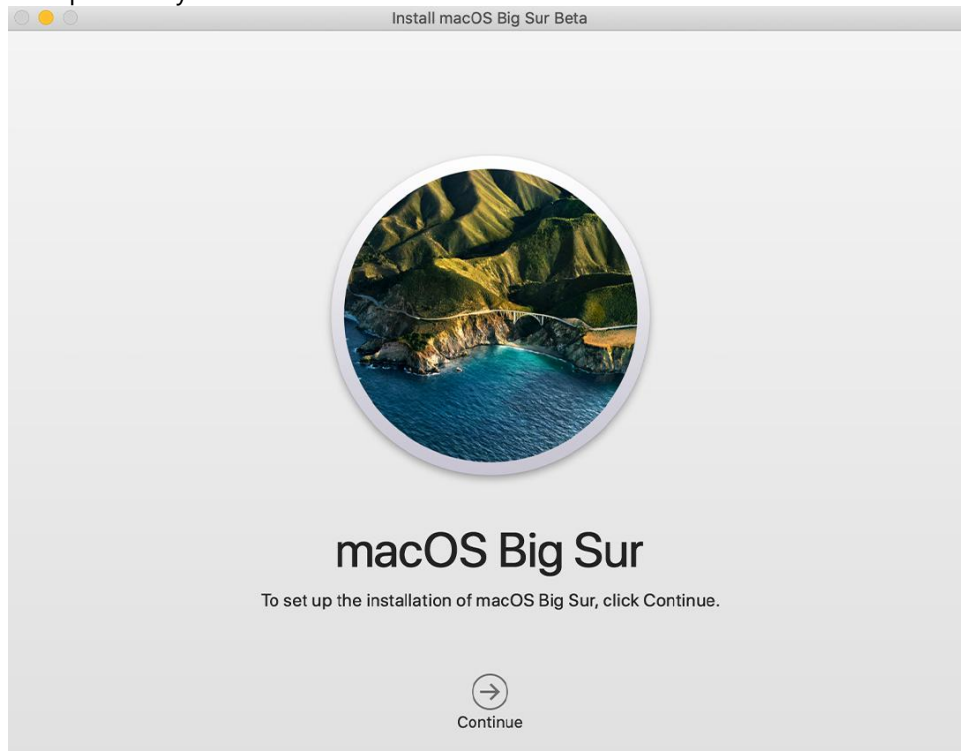
```
Terminal — -bash — 97x42
[~bash-3.2# cd /Volumes/
[~bash-3.2# ls
OS X Base System      PXE_SDSC
[~bash-3.2# cd PXE_SDSC/
[~bash-3.2# ./partitionDisk.sh -single 32 "MacOS_X" 1
Creates a single partition jhfs+ with name MacOS_X on disk /dev/disk0
Started erase on disk0
Unmounting disk
Creating the partition map
Waiting for partitions to activate
Formatting disk0s2 as Mac OS Extended (Journaled) with name MacOS_X
Initialized /dev/rdisk0s2 as a 113 GB case-insensitive HFS Plus volume with a 16384k journal
Mounting disk
Finished erase on disk0
Resize Physical Volume MacOS_X to 32g
Resizing to 32000000000 bytes
Started partitioning on disk0s2 MacOS_X
Verifying the disk
Verifying file system
Checking Journaled HFS Plus volume
Checking extents overflow file
Checking catalog file
Checking multi-linked files
Checking catalog hierarchy
Checking extended attributes file
Checking volume bitmap
Checking volume information
The volume MacOS_X appears to be OK
File system check exit code is 0
Resizing
Shrinking file system
Modifying partition map
Finished partitioning on disk0s2 MacOS_X
/dev/disk0 (internal, physical):
#:          TYPE NAME          SIZE      IDENTIFIER
0:          GUID_partition_scheme  *121.3 GB  disk0
1:                  EFI EFI      209.7 MB  disk0s1
2:          Apple_HFS MacOS_X    32.0 GB   disk0s2
End of process - 0
[~bash-3.2# █
```

Install macOS

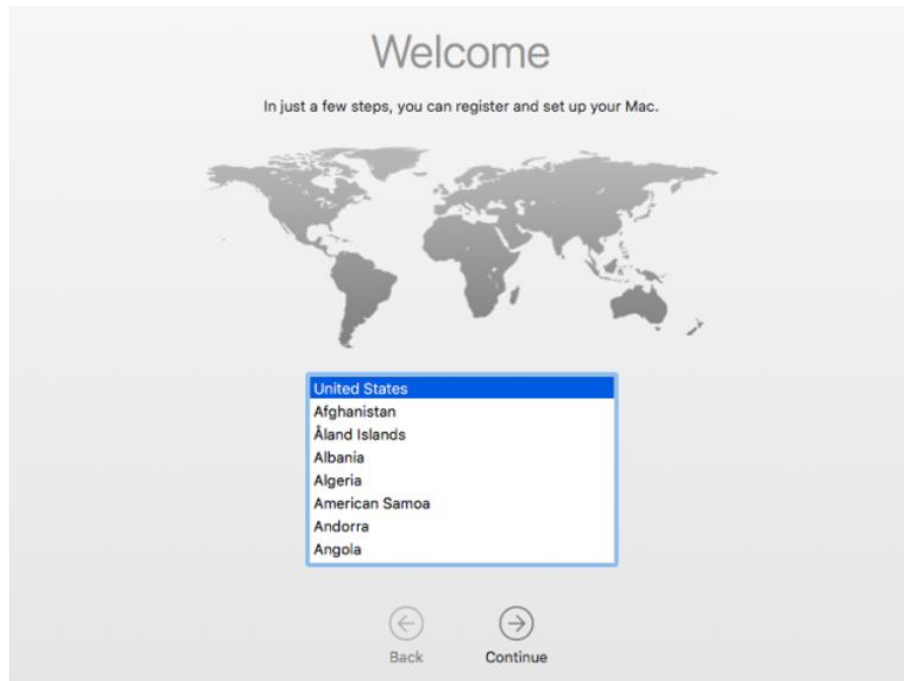
10. Select the option to reinstall:



11. Select the volume previously created:

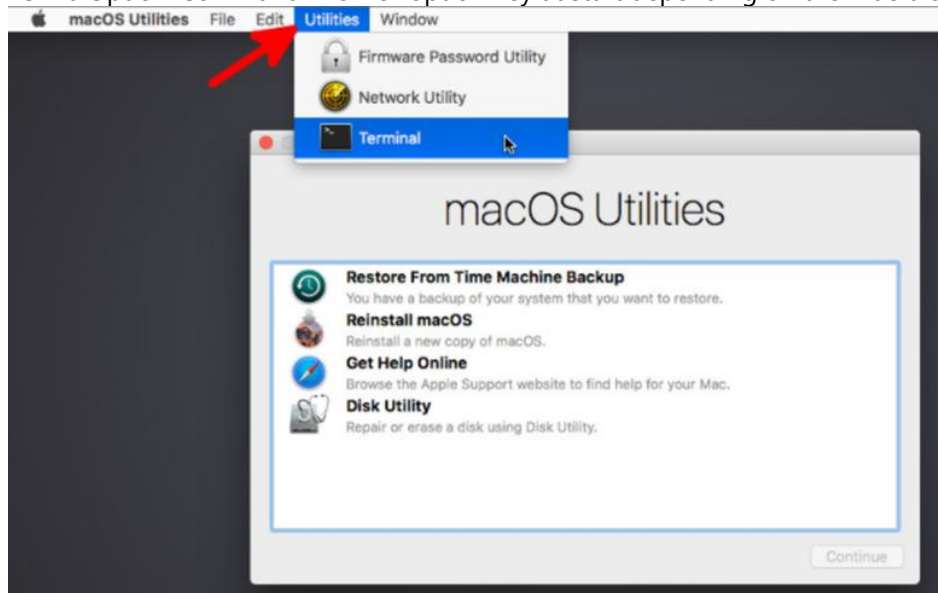


12. After several minutes or hours, depending on your connection speed (about 5GB to download), the computer will stop at the screen below. This is the setup assistant. DO NOT CONTINUE this assistant at this point but rather shut down the MAC or you will need to redo this process in its entirety from beginning.



Resize macOS partition

13. To complete the master creation, we need to install the resizing app & script. So, reboot to recovery (Option-Command-R or Shift-Option-Command-R or for option key at start depending on the Mac bios) and open a Terminal:



14. Execute the install.sh script from the "Resize" folder you had previously extracted from the archive below to your SDS PXE boot key:



Resize.zip

```
cd /Volumes/PXE_SDSC/RESIZE/  
./Install.sh
```

15. The script will copy the Automator com.softthinks.resize.app onto the Mac OS System Volume and install the service com.softthinks.resize.plist, which will be started automatically after the first setup assistant to resize the drive, when the image is first booted.
16. Now switch off the Mac, the image preparation is done.

Linux Image Preparation

We recommend you to wipe completely your disk before installing Linux.

SDS 18.0 has been validated with the following Linux distributions (default disk layout and filesystem):

- Ubuntu 16.04.4 LTS (x64)
- Mint 18.2 Sonya (x64)

Capturing an image

Windows Image

1. PXE boot the computer to the SDS server (If needed, enable BIOS network boot option) or use bootable USB Flash drive with USB Ethernet adapter (See [How to boot from Bootable USB Flash Drive with USB Ethernet adapter](#)).
2. From the Welcome screen, select "Imaging" then on the next page select "Create Image".
3. In the menu screen,
 - a. Select the "Create new deployment image" option **a** (the radio button will turn from grey to white)
 - b. Enter a description for the image **b** (there is no naming convention required).
 - c. Check the option "Capture all kinds of volumes even if it is a Softthinks Recovery Partition" **c** to create a **Static Image** or uncheck it for a **Generic Image**
 - d. Select your compression format **d** (WIM is the default format, and the only one possible for **Generic Image**)
 - e. Set the split size **e** to "No split" (except if you want to put the image on optical media)
 - f. Click on the Next button **f**

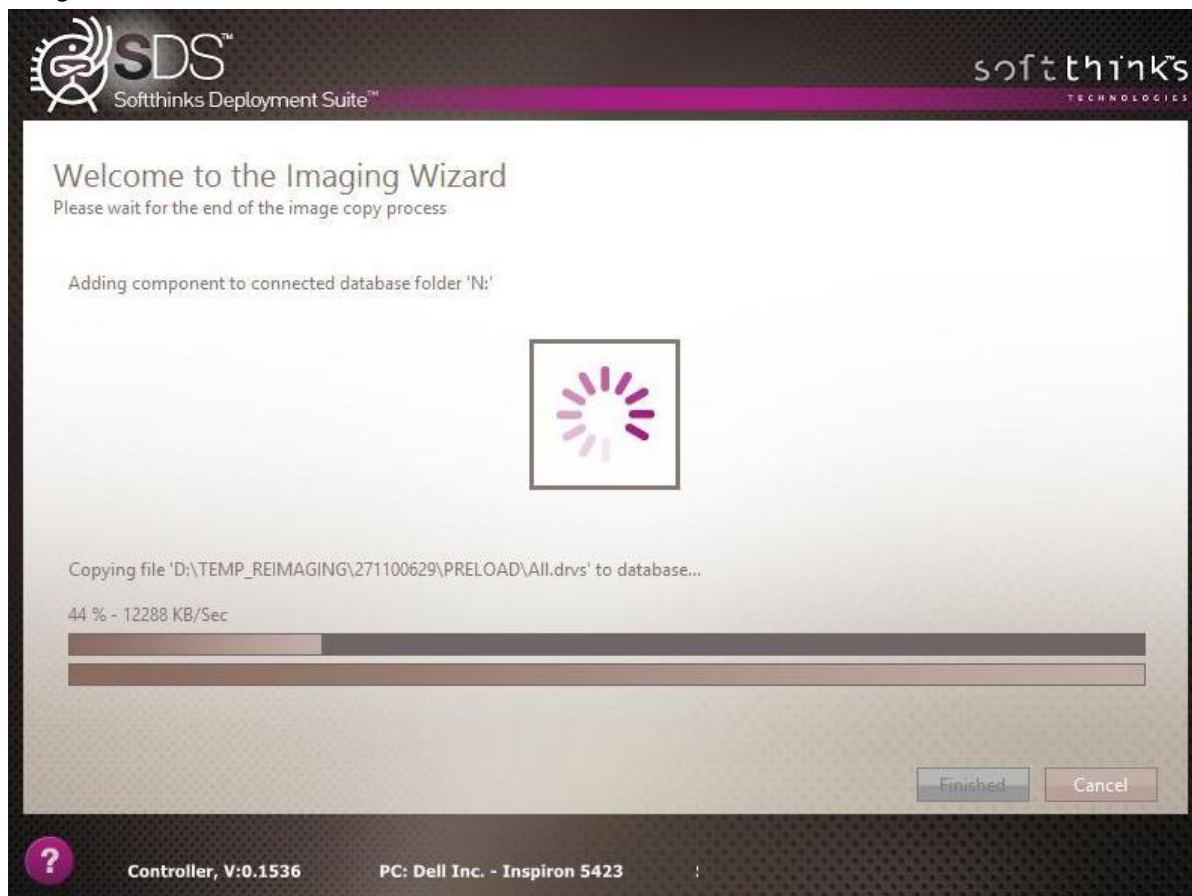
The screenshot shows the 'Menu' screen of the SDS Softthinks Deployment Suite. The interface has a dark header with the SDS logo and 'Softthinks Deployment Suite™' on the left, and 'softthinks TECHNOLOGIES' on the right. The main content area is titled 'Menu' and says 'Please select an option to continue.' There are three radio button options: 'Wipe hard disk and deploy', 'Create a SmartImage', and 'Create new deployment image'. The third option is selected and highlighted with a red box and label 'a'. Below this, there is a text field 'Enter the image name:' with the value 'LENOVO - 20270' and label 'b'. There are two checkboxes: 'Capture all kind of volumes even if it is a SoftThinks Recovery Partition' (checked) with label 'c', and 'Capture all disks' (unchecked). Below these are two dropdown menus: 'Compression format' set to 'CASPER' with label 'd', and 'Split size' set to 'No split' with label 'e'. A 'Show disk topology' button is below the dropdowns. At the bottom, there is a status bar with a question mark icon, the text ': Alienware - Alienware X51', 'Serial: 9N7WMW1', 'Serv', and a set of navigation icons. The 'Next' button (a right-pointing arrow) is highlighted with a red box and label 'f'.

4. The image capture will proceed automatically (screens may differ):



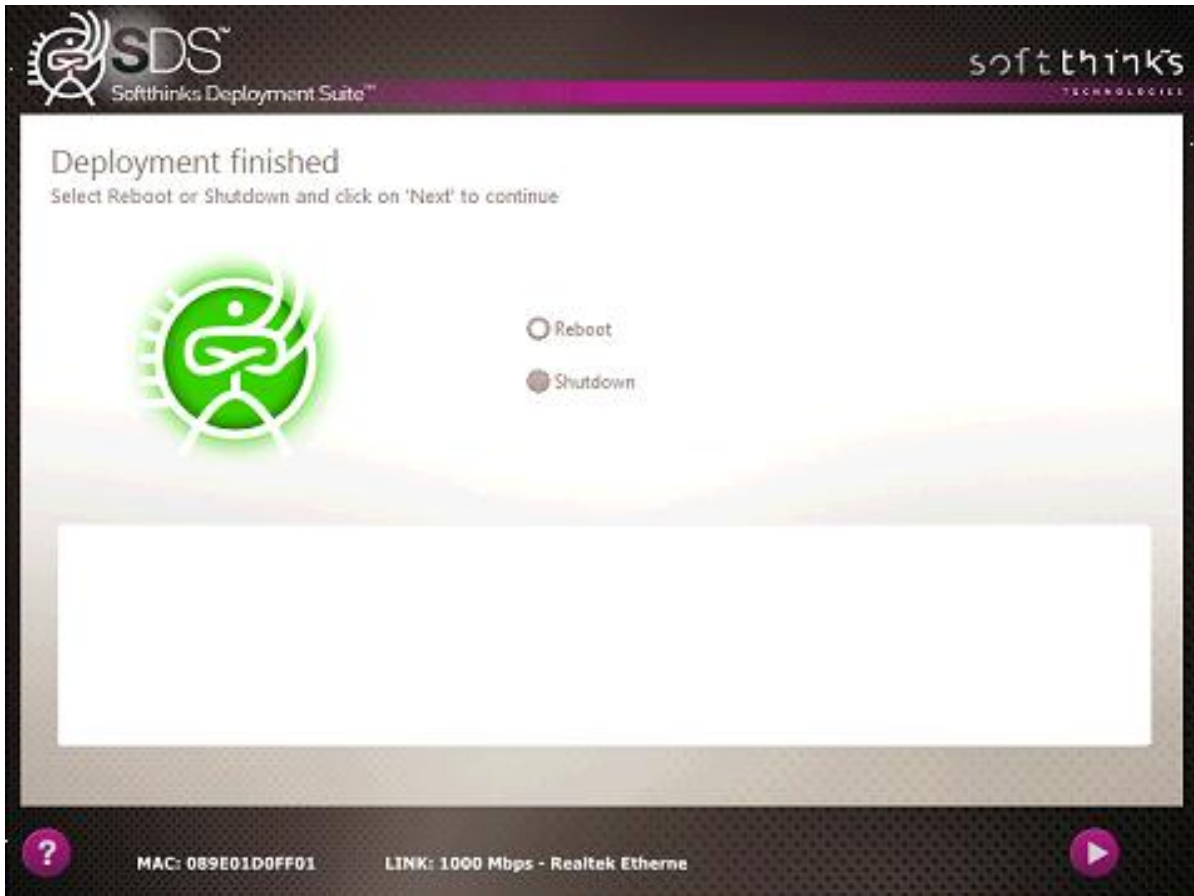
Note: If there is any failure, the process will stop. If the system was not a brand new one, and you were not able to restore it through Windows install media or manufacturer recovery media / partition, we suggest you to run CHKDSK /F command line and retry the capture process.

5. The image created will be transferred to the server:



Note: If there is any failure, the process will stop.

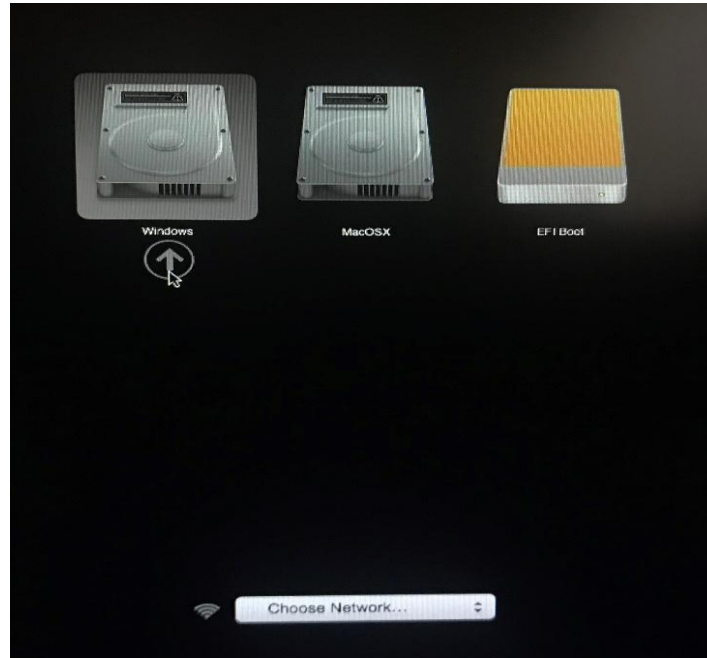
6. You will be notified that the process finished with no issues, and you can choose to reboot or shutdown, or manually power down the device:



7. After the Image Capture is completed, it will be added automatically to the SDS Database and will be available to be deployed (See [Adding images](#)).

macOS Image

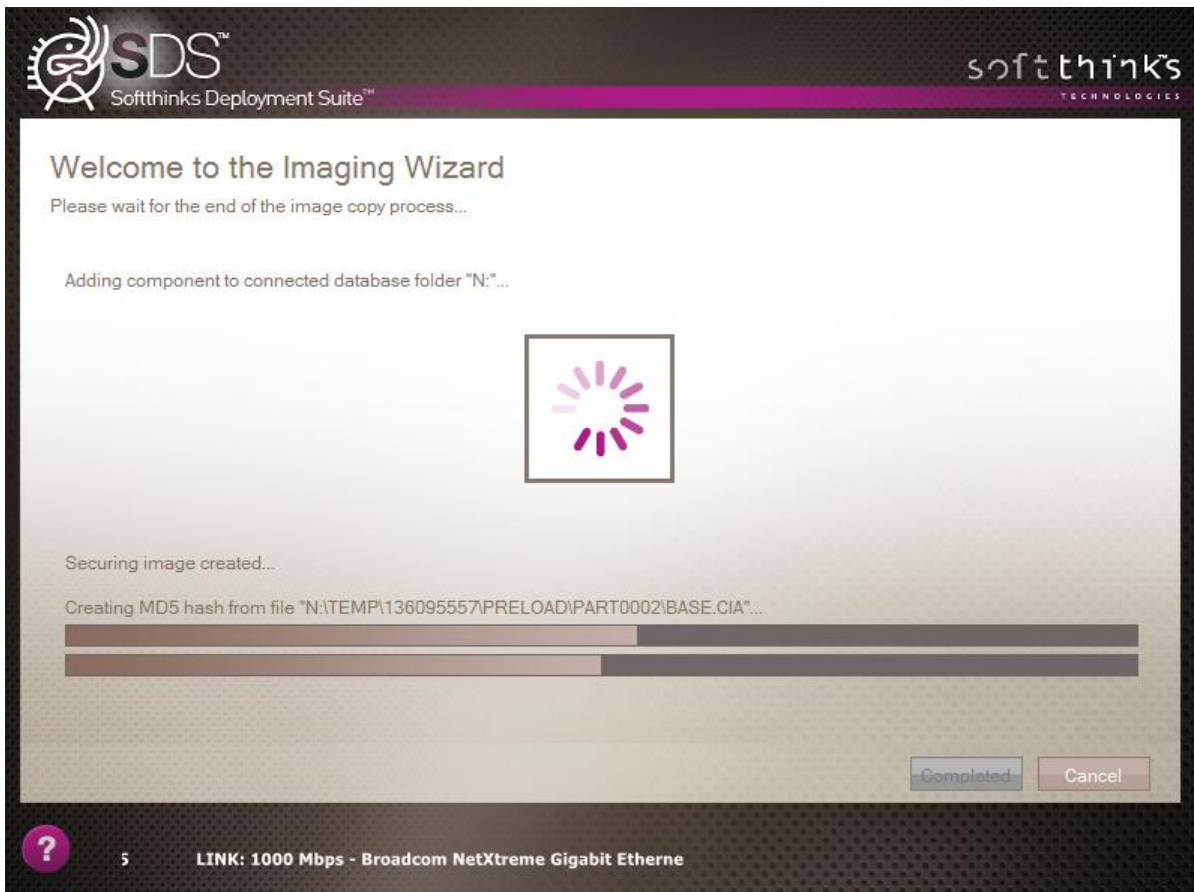
1. You will first need to restart into SDS environment.
 - a. Plug the UEFI SDS PXE boot key
 - b. When you hear the startup chime, press and hold the Option key to access to OS X's Startup Manager
 - c. Select your Windows PXE boot key.
 - i. On macOS device with T2 chipset enabled, select Windows device since MAC T2 will block booting from the EFI devices



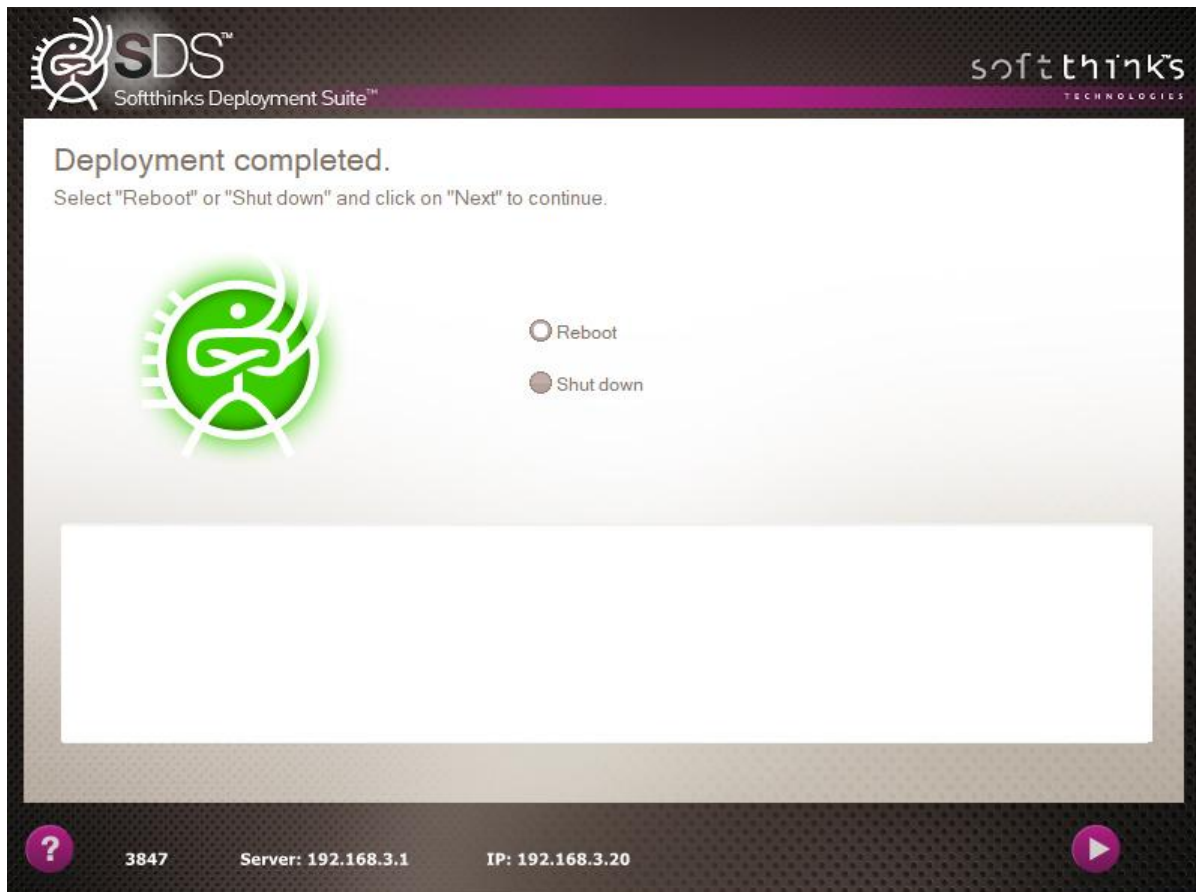
- ii. On macOS device without T2 chipset, or T2 disabled, select your Windows PXE boot key



2. From the Welcome screen, select "Imaging" then on the next page select "Create Image".
3. The image is now being copied:



4. The image will be automatically added to the database, and you will get next screen:



In manual mode (when SDSImaging module is set to work manually), you will get the additional screen below between steps 2 and 3. On a Fusion Drive configuration, select both disks, if not select only the system disk as below:

Welcome to the Imaging Wizard

Select disk:

Disk
<input checked="" type="checkbox"/> Disk ID: 0 - Model: APPLE SSD AM0128F - Size: 113.990 GB
<input checked="" type="checkbox"/> Disk ID: 1 - Model: APPLE HDD ST1000LM024 - Size: 931.513GB

Select volumes:

Letter	Volume Name	Size (MB)
<input type="checkbox"/> D	EFI	200.00
<input type="checkbox"/> E		30517.58
<input type="checkbox"/> F	Boot OS X	128.00
<input type="checkbox"/> G	EFI	200.00
<input type="checkbox"/> H		30025.69
<input type="checkbox"/> C	Recovery HD	610.00

☐ Split image in MB chunks Compression type:

☒ Include all volumes from disk (except recovery partition)

☒ Include SoftThinks Recovery

☐ Create image of the user partition based on the Recovery

? ID: 5547 Serial: 9JM3SZ1 Server: SRV_JAUNE

And, still in manual mode, this one between step 3 and 4, once the copy is finished, where we suggest you to indicate the macOS version in the image description and to adjust other properties and information before clicking on the Next button:

SDS™
Softthinks Deployment Suite™

softthinks
TECHNOLOGIES

Welcome to the Imaging Wizard

Please enter all necessary information for the image.

IMAGE PROPERTIES	
Description	Apple Inc. - Macmini7,1 (Mac-35C5E8120C7EEAF) - Ver:10.12.4
Article code	
Language	English

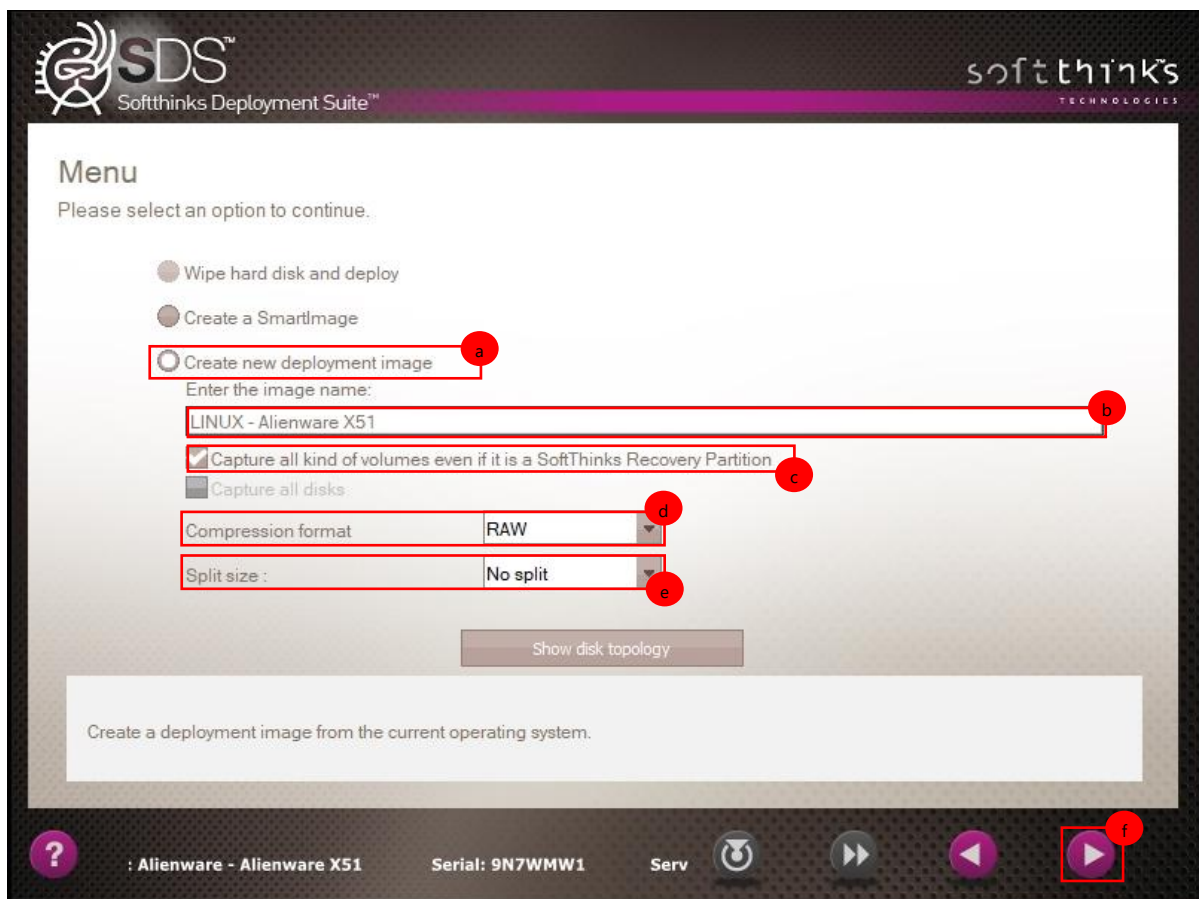
ADVANCED INFORMATION	
Size (MB)	17573.14
Compression	Raw
Version	<input type="checkbox"/> Windows 7 <input type="checkbox"/> Windows 7 64 <input type="checkbox"/> Linux <input type="checkbox"/> Windows 2000 <input type="checkbox"/> Windows XP <input type="checkbox"/> Windows XP Pro <input type="checkbox"/> Windows MCE <input type="checkbox"/> Windows 2003 <input type="checkbox"/> Windows 2003 64 <input type="checkbox"/> Windows Vista

Back Next Cancel

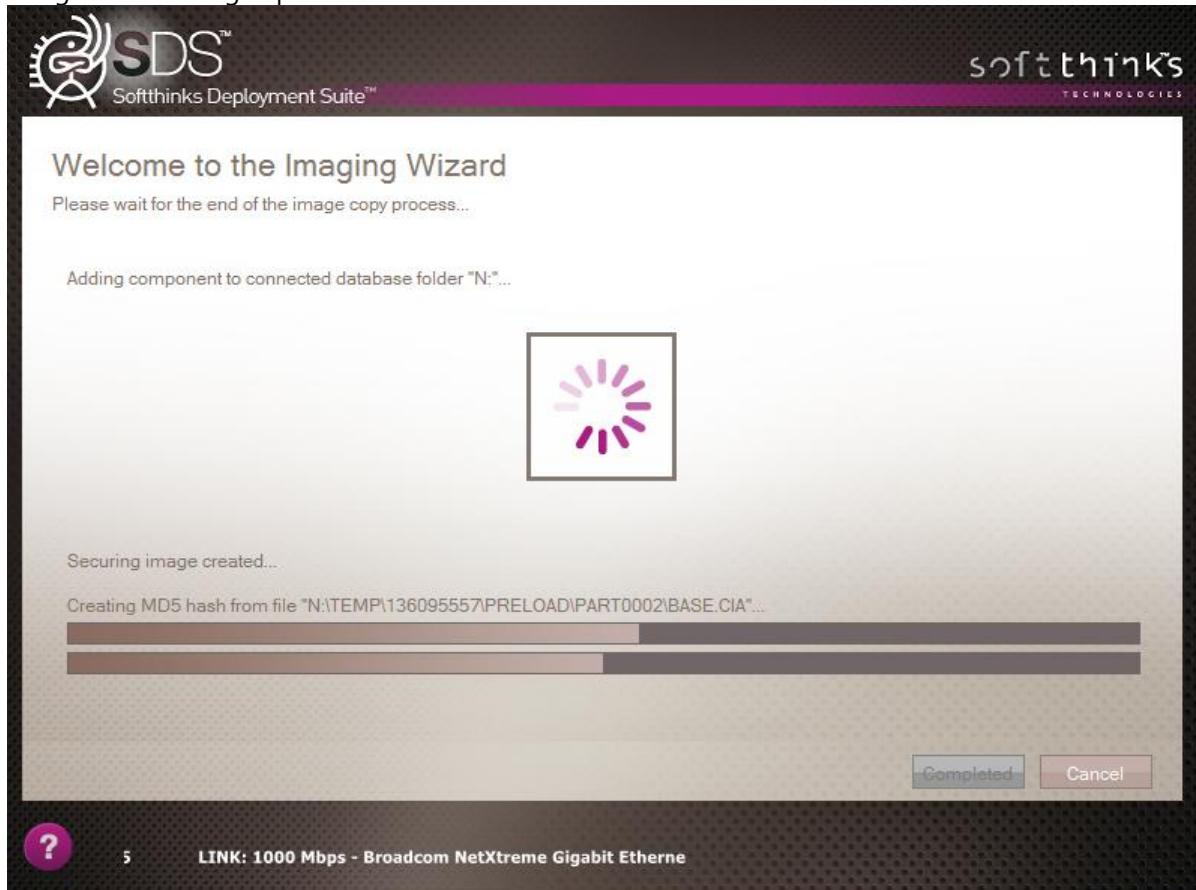
? 5547 Serial: 9JM3SZ1 Server: SRV_JAUNE

Linux Image

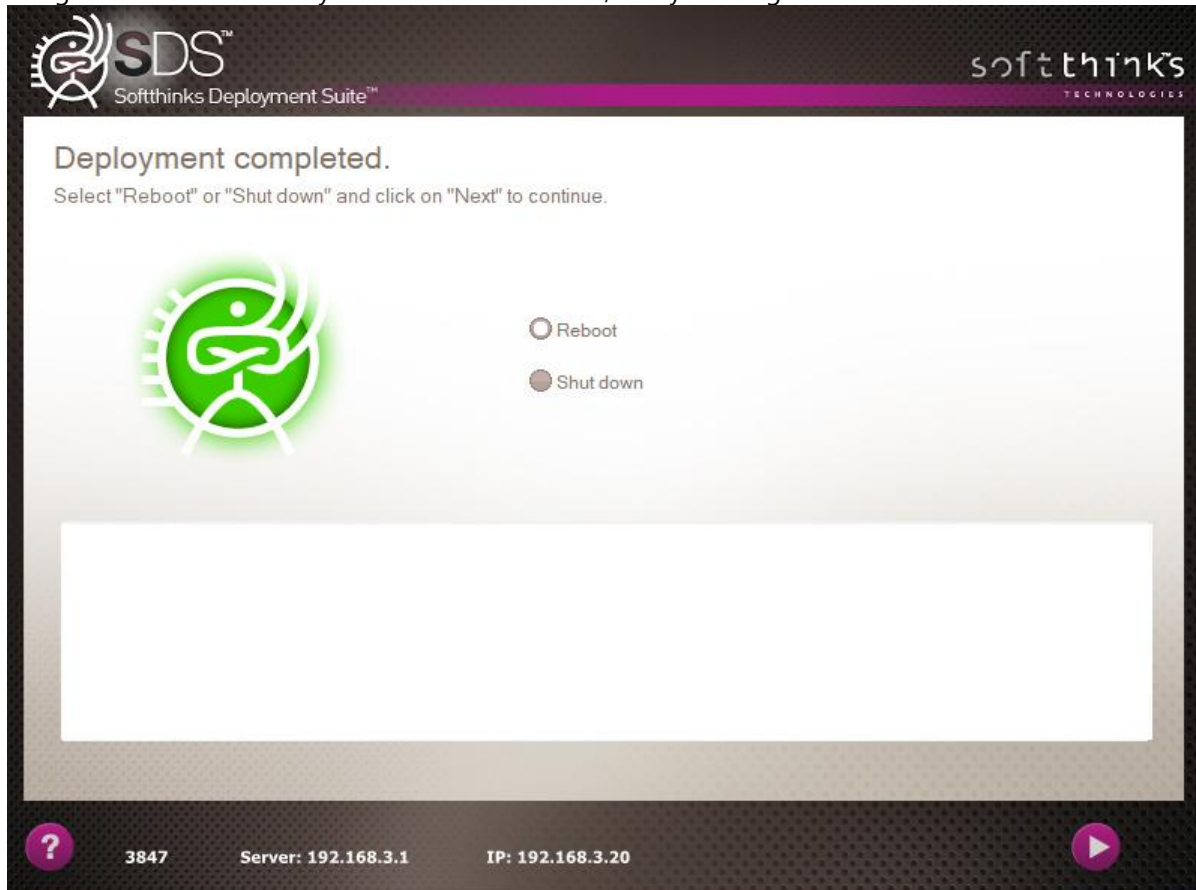
1. PXE boot the computer to the SDS server (If needed, enable BIOS network boot option) or use bootable USB Flash drive with USB Ethernet adapter (See [How to boot from Bootable USB Flash Drive with USB Ethernet adapter](#)).
2. From the Welcome screen, select "Imaging" then on the next page select "Create Image".
3. In the Menu screen,
 - a. Select the "Create new deployment image" option (the radio button will turn from grey to white)
 - b. Enter the name of the image (there is no naming convention required)
 - c. Ensure that the option "Capture all kind of volumes even if it is a Softthinks Recovery Partition" is checked
 - d. Select "RAW" compression format (other formats are not compatible with Linux images)
 - e. Set the Split size to "No Split"
 - f. Click on the next button



4. The image is now being copied:



5. The image will be automatically added to the database, and you will get next screen:



Deploying an image


Windows Image

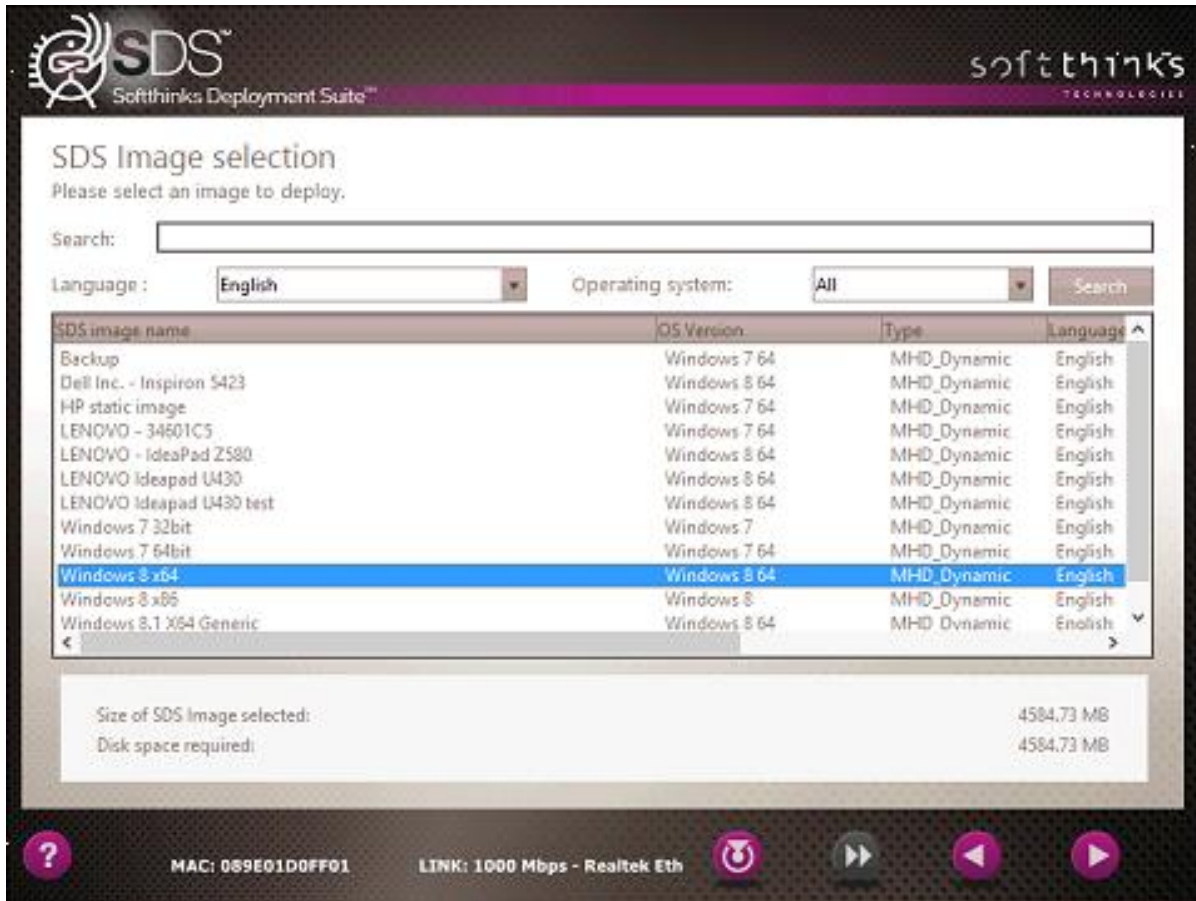
SDS solution give you the ability to deploy the images you created either manually or automatically. This chapter will first describe you the manual process, but you can go directly to [Automatic deployment](#) if you want more details on how to automate this process.

1. Boot your Windows device to the server and select the Imaging option from the Welcome Page.
2. If no ADF file is found you will proceed to the Profile, Preset screen:



Manual Deployment

3. If you want to deploy an image manually (or have not yet setup a Profile, Preset, or ADF file), click on the Skip button  in the "Profile, Preset" screen.
4. You will be taken to the SDS Image Selection Page and there you will select the image to be applied to the hardware that is connected. You can select the image you want from the full list (filtered by Language and/or Operating System) or search by name:



5. If you have created a Smart Image for the computer model you are deploying then you can select it at this screen, or else click on Skip button:

SmartImage selection
Choose a SmartImage.

Search: ☒ Compatible

Name	Create from	Signature	PnP compatibil...	Language	Size	Rar
------	-------------	-----------	-------------------	----------	------	-----

Size of SmartImage selected: 0.00 MB
Disk space required: 3120.99 MB

IP: 172.16.0.10 MAC: D4BED966540B LINK: 100

6. Select the applications to be installed during the deployment (choose them in the left list and click on '>' button to add them to the right list), or else click on Skip button:



7. Choose the recovery solution option:



Note: For a Windows 10 image, there is no “Recovery Solution on additional partition (dedicated recovery partition)” option. Select “No recovery solution” (restore user partition only)” for a Generic Image. You can install the SoftThinks Backup and Recovery (SBAR) solution as an application (please contact your commercial contact). For a Static image select “Keep original disk topology”.

8. Configure the disk topology (the default disk layout can be changed if required, otherwise nothing needs to be selected):



Note: Additional User Partitions can be created by changing the Size (%) of UP1 to a smaller amount and then clicking the green « + » symbol on the right side of the Boot Disk line. The new partition will be created with the space that was made available.

9. Review the options that were selected for the deployment. After the countdown (15 seconds) or when you click on next button the deployment process will begin:



If anything is incorrect you can hover over the Left Purple Arrow and thumbnails of all the screens will show up. You can go back as far as you need to, but hurry as you only have 15 seconds to make your choice or it will advance to the next screen.

If you wish to create a new preset with the choices you made, click the "Create a Preset" button highlighted below. Please keep in mind the delay is only 15 seconds before the deployment starts automatically in order to click this button.

10. Once the countdown is finished, the process will begin based on your script and the choice you made from the Welcome Page.

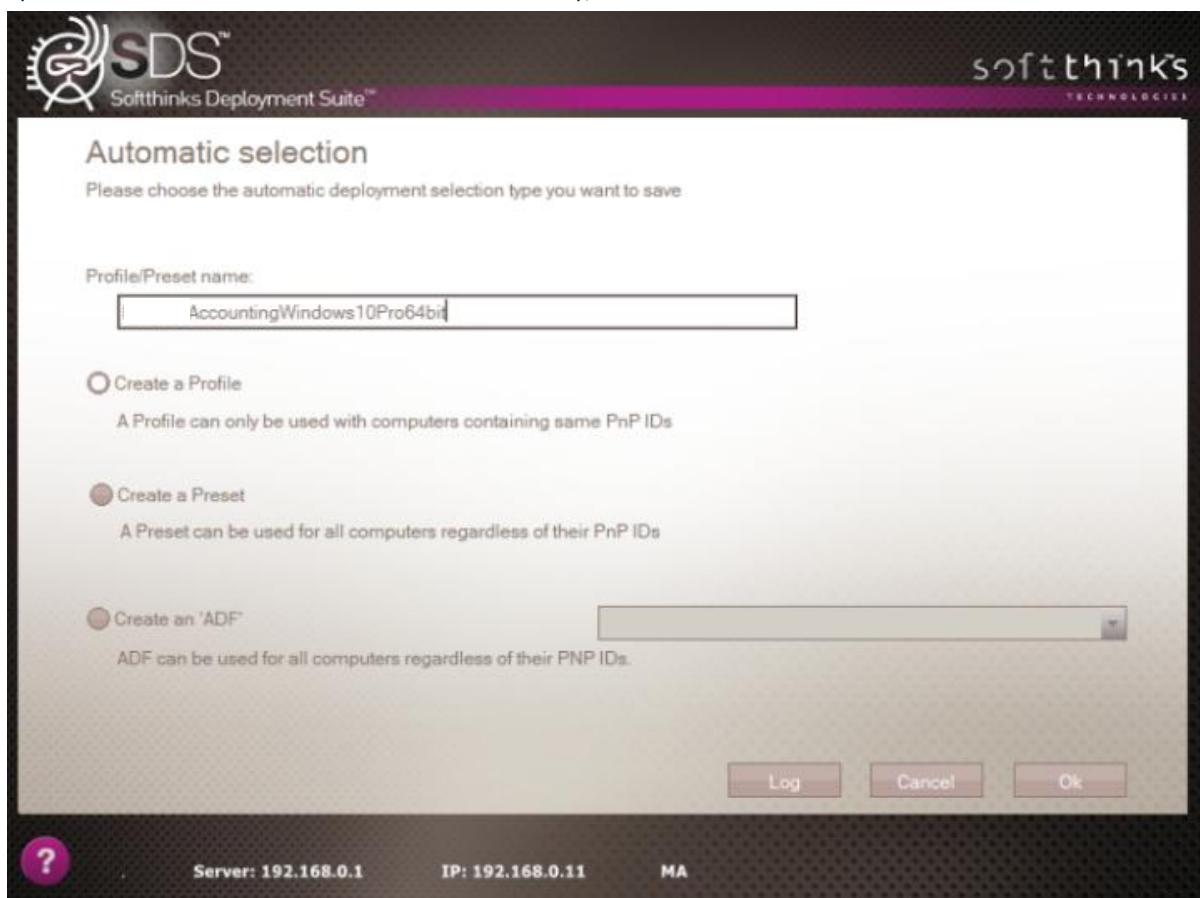
Automatic Deployment

Automatic image deployments are what set SDS apart from other methods on the market. Three types of the Automatic Deployments (Preset, Profile, and ADF) are available to be created depending on what is being deployed. Once an Automated File is selected, all of the choices that were made will be set for the computer and the screens will blink all the way through to the Summary page.

Profile

A Profile is linked to the hardware of a model of computer, but does not have a unique identifier in the name. Profiles are useful when you have multiple images of the same OS for the same model of computer (i.e. computers for schools or other organizations that have different images for different departments). A profile needs to be selected from the Profile/Preset Page in order to run.

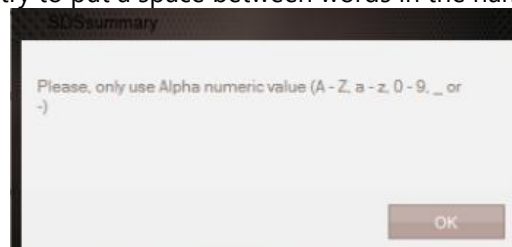
To create a Profile, click on the "Create a Profile" button and give it a name without spaces or symbols related to the image (note: the button is selected when it turns white), and click on "OK" button to continue:



The screenshot shows the 'Automatic selection' dialog box in the SDS (Softthinks Deployment Suite) application. The dialog has a title bar with the SDS logo and 'Softthinks Deployment Suite™' on the left, and the 'softthinks TECHNOLOGIES' logo on the right. The main content area is titled 'Automatic selection' and contains the instruction 'Please choose the automatic deployment selection type you want to save'. Below this is a text field labeled 'Profile/Preset name:' containing the text 'AccountingWindows10Pro64bit'. There are three radio button options: 'Create a Profile' (unselected), 'Create a Preset' (selected), and 'Create an 'ADF'' (unselected). Below each option is a brief description: 'A Profile can only be used with computers containing same PnP IDs', 'A Preset can be used for all computers regardless of their PnP IDs', and 'ADF can be used for all computers regardless of their PNP IDs'. At the bottom right are three buttons: 'Log', 'Cancel', and 'Ok'. The bottom status bar shows a question mark icon, 'Server: 192.168.0.1', 'IP: 192.168.0.11', and 'MA'.

Your profile has now been created and will be available to use on future deployments.

Note: You will get this error if you try to put a space between words in the name:

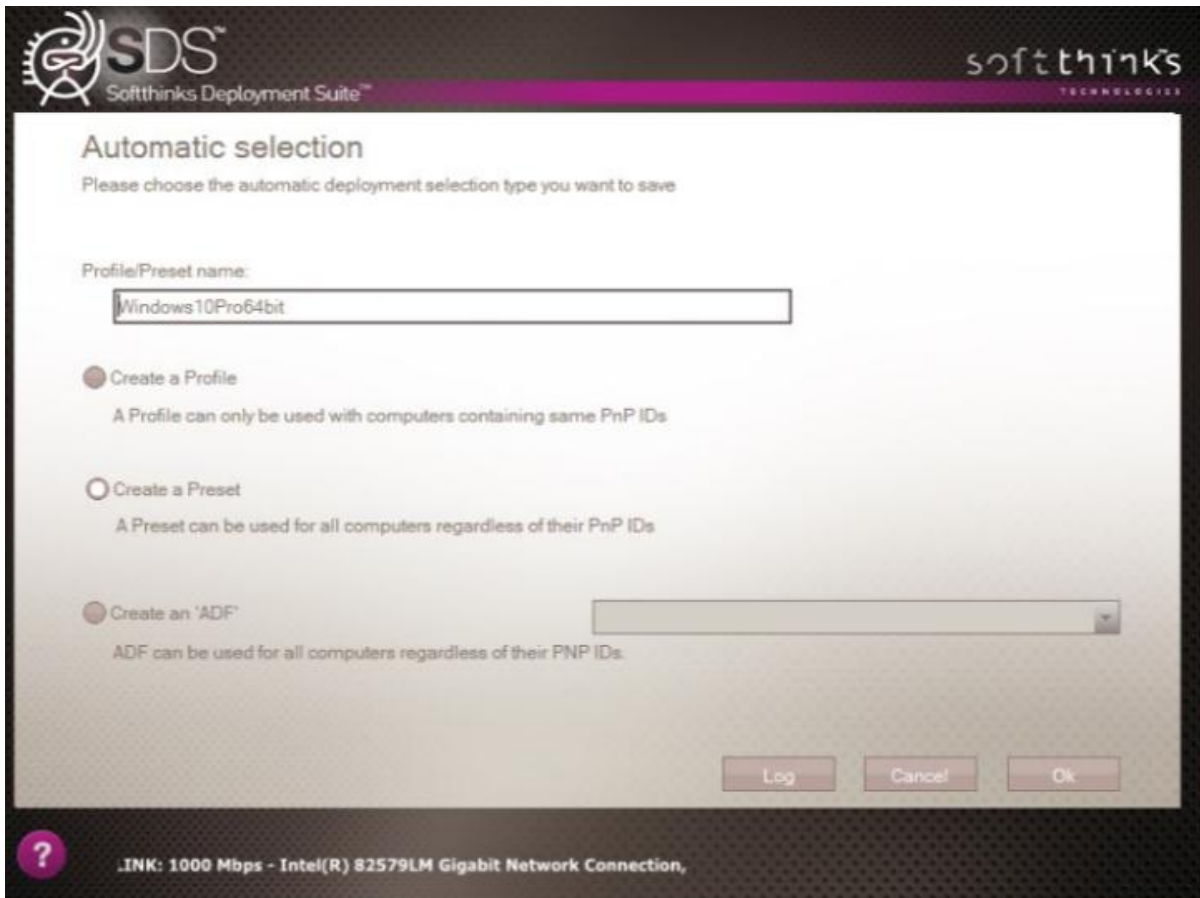


The screenshot shows an error message dialog box titled 'SDS summary'. The message text reads: 'Please, only use Alpha numeric value (A - Z, a - z, 0 - 9, _ or -)'. There is an 'OK' button at the bottom right.

Preset

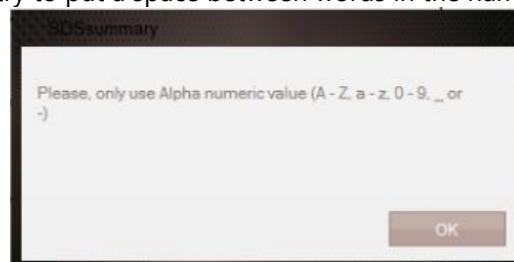
A Preset is not linked to any hardware and does not have a Unique Identifier in the name. It is used to deploy Generic Images to any model of computer with the same choices. A preset needs to be selected from the Profile/Preset Page in order to run.

To create a Preset, click on the "Create a Preset" button and give it a name without spaces or symbols related to the image (note: the button is selected when it turns white), and click on "OK" button to continue:



Your profile has now been created and will be available to use on future deployments.

Note: You will get this error if you try to put a space between words in the name

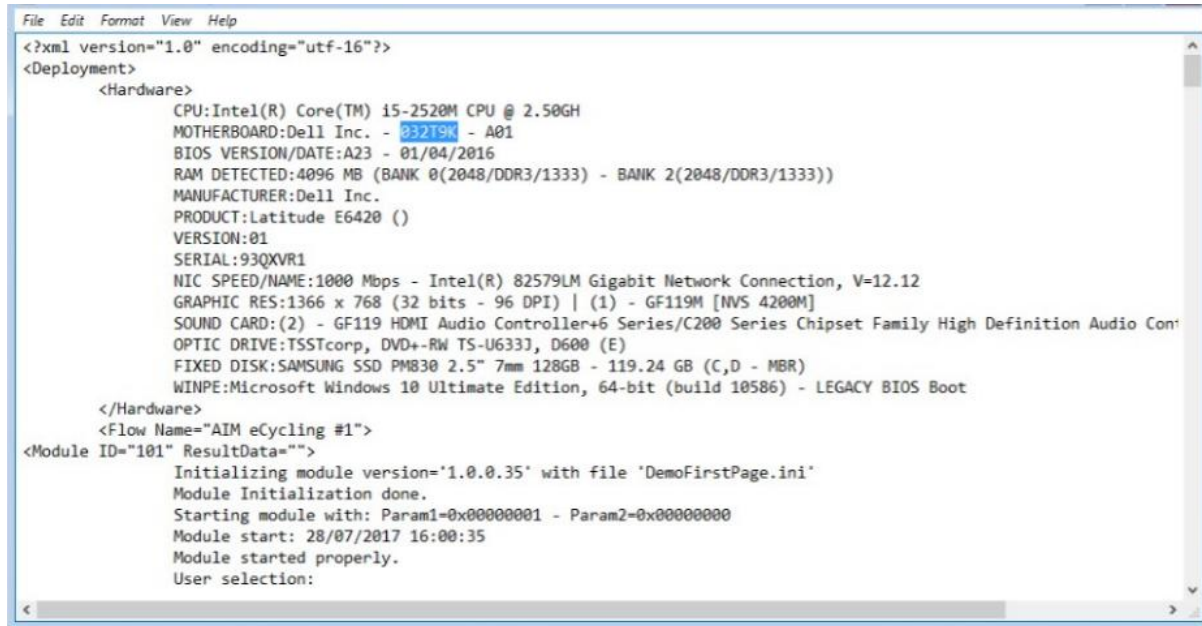


ADF (Automated Deployment File)

An ADF is linked to the hardware of a model of computer, and uses a unique identifier in the name. An ADF does not need to be selected to run. If the hardware of a computer matches the hardware of the ADF and the Unique Identifier also matches, then the system will automatically run the ADF as soon as Deploy or any variation of Deploy is selected. ADF are useful if you only have one image for an Operating System for a specific model of computer.

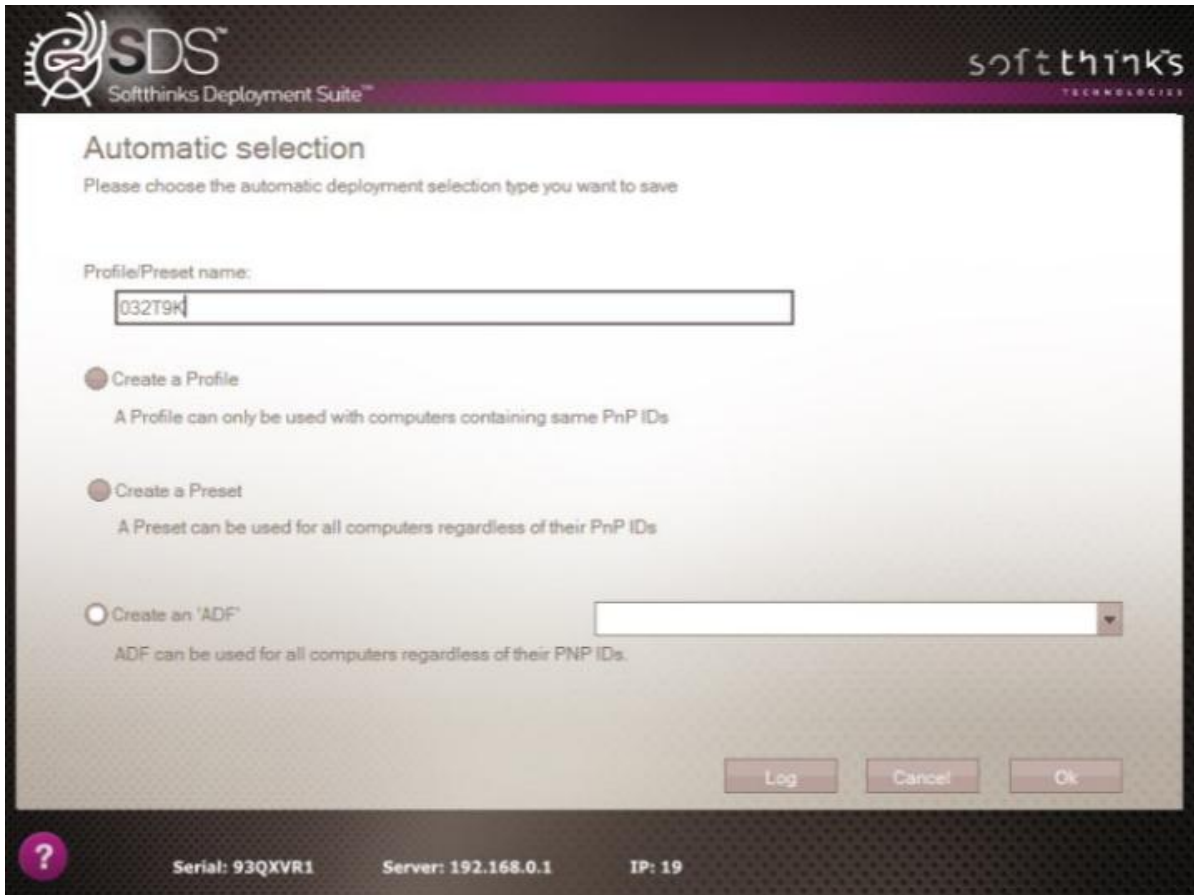
To create an ADF, click on the Create an ADF button. In most cases the name for the ADF will be the Motherboard Part Number (sometimes the computer model number will have to be used.)

To get the Motherboard Part Number, click the Log button near the bottom of the screen and the Log file for the deployment of that computer will open up from the RAM of the computer:



```
File Edit Format View Help
<?xml version="1.0" encoding="utf-16"?>
<Deployment>
  <Hardware>
    CPU: Intel(R) Core(TM) i5-2520M CPU @ 2.50GH
    MOTHERBOARD: Dell Inc. - 93219K - A01
    BIOS VERSION/DATE: A23 - 01/04/2016
    RAM DETECTED: 4096 MB (BANK 0(2048/DDR3/1333) - BANK 2(2048/DDR3/1333))
    MANUFACTURER: Dell Inc.
    PRODUCT: Latitude E6420 ()
    VERSION: 01
    SERIAL: 93QXVR1
    NIC SPEED/NAME: 1000 Mbps - Intel(R) 82579LM Gigabit Network Connection, V=12.12
    GRAPHIC RES: 1366 x 768 (32 bits - 96 DPI) | (1) - GF119M [NVS 4200M]
    SOUND CARD: (2) - GF119 HDMI Audio Controller+6 Series/C200 Series Chipset Family High Definition Audio Con
    OPTIC DRIVE: TSSTcorp, DVD+-RW TS-U6333, D600 (E)
    FIXED DISK: SAMSUNG SSD PM830 2.5" 7mm 128GB - 119.24 GB (C,D - MBR)
    WINPE: Microsoft Windows 10 Ultimate Edition, 64-bit (build 10586) - LEGACY BIOS Boot
  </Hardware>
  <Flow Name="AIM eCycling #1">
    <Module ID="101" ResultData="">
      Initializing module version='1.0.0.35' with file 'DemoFirstPage.ini'
      Module Initialization done.
      Starting module with: Param1=0x00000001 - Param2=0x00000000
      Module start: 28/07/2017 16:00:35
      Module started properly.
      User selection:
```

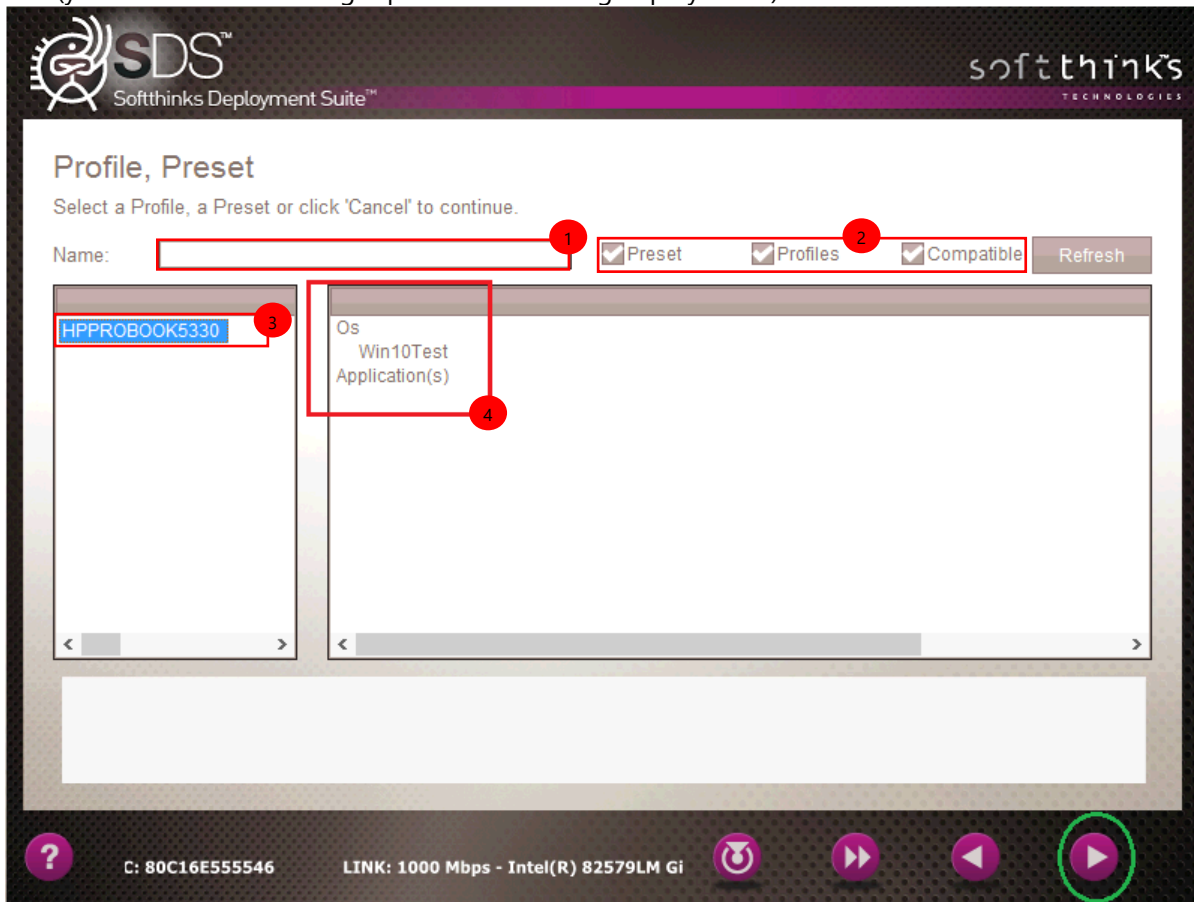

The Motherboard Part number (if listed in the BIOS of the computer) will be in the hardware list of the computer in the top section of the log file. Highlight it and Copy the Name. Then close the log and paste the name into the Profile/Preset name box:



The screenshot shows the 'Automatic selection' dialog box in the SDS (Softthinks Deployment Suite) application. The dialog has a title bar with the SDS logo and 'Softthinks Deployment Suite™' on the left, and the 'softthinks TECHNOLOGIES' logo on the right. The main content area is titled 'Automatic selection' and contains the instruction 'Please choose the automatic deployment selection type you want to save'. Below this is a text field labeled 'Profile/Preset name:' containing the text '032T9K'. There are three radio button options: 'Create a Profile' (selected), 'Create a Preset', and 'Create an 'ADF''. Each option has a descriptive text below it: 'A Profile can only be used with computers containing same PnP IDs', 'A Preset can be used for all computers regardless of their PnP IDs', and 'ADF can be used for all computers regardless of their PNP IDs.' respectively. At the bottom right of the dialog are three buttons: 'Log', 'Cancel', and 'Ok'. A status bar at the very bottom of the window shows a question mark icon, 'Serial: 93QXVR1', 'Server: 192.168.0.1', and 'IP: 19'.

Your ADF has now been created and will be available to use on future deployments.

If the current device doesn't match an existing ADF file, select a Profile / Preset (See [Definitions, Acronyms and Abbreviations used in this user guide](#)) to deploy **automatically**. You can search for specific profile/preset/ADF name ¹ and filter them by type ², and if one is matching your need in the list ³ ("HPPROBOK5330" in our example), select it (you will notice on the right panel the OS being deployed ⁴) and click on Next button:



macOS Image

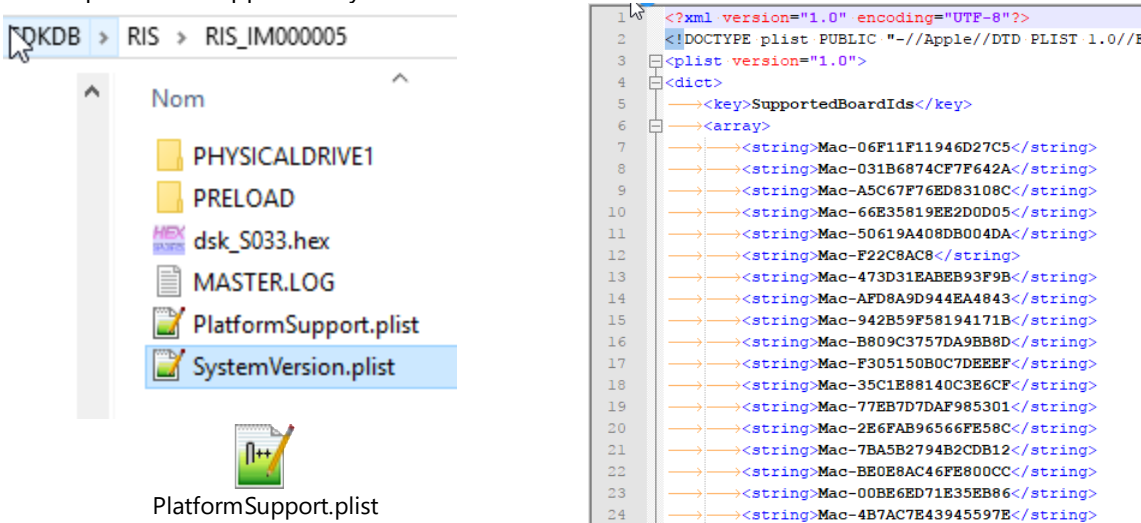
Once an image is added to the SDS database, it will be possible to apply it to any Mac, usually the same Model that you captured the image from. However, some other models could use the same image.

A Mac can be identified in BIOS with a hardware ID.

For example, in red.

CPU:Intel(R) Core(TM) i5-4308U CPU @ 2.80GHz
MOTHERBOARD:Apple Inc. - **Mac-35C5E08120C7EEAF - Macmini7,1**
BIOS VERSION/DATE:MM71.88Z.0220.B14.1702161608 - 02/16/2017
RAM DETECTED:8192 MB (BANK 0(0/DDR3/1600) - BANK 1(0/DDR3/1600))
MANUFACTURER:Apple Inc.
PRODUCT:Macmini7,1 (System SKU#)
VERSION:1.0
SERIAL:C0KT800UGF1T
NIC SPEED/NAME:100 Mbps - Broadcom NetXtreme Gigabit Ethernet Driver, V=17.2
GRAPHIC RES:1024 x 768 (32 bits - 96 DPI) | (1) - Haswell-ULT Integrated Graphics Controller
SOUND CARD:(2) - Haswell-ULT HD Audio Controller+8 Series HD Audio Controller
OPTIC DRIVE:
FIXED DISK:APPLE SSD SM0128F - 113.00 GB (- GPT)
APPLE HDD ST1000LM024 - 931.51 GB (- GPT)

If you look closer at the recovery in the RIS folder of the image you will find 2 *.plist files which identify the Mac OS version and the platforms supported by the OS version:



You can check this file to see what other Mac platforms can use this same image. Some Mac mini could have different hardware but this image could probably support other Mac. You have to check in those files.

If you have an old MacBook Pro 10.8.5 like this one: 'Apple Inc. – MacBook Pro 9.2 (Mac-6F01561E16C75D06)' you will notice that the image captured is supporting my MacBook Pro so you can download it directly without update through iTunes.

Since we are using a Bootcamp driver to mount HFS+ partition only reading is possible.

To download a Mac OS image in SDS you will need an adapted script. Since volumes are read-only no modules are able to add anything to the image deployed under WinPE environment.

Adapt your SDS script. It is identical for the capture, only the download was adjusted as follow:

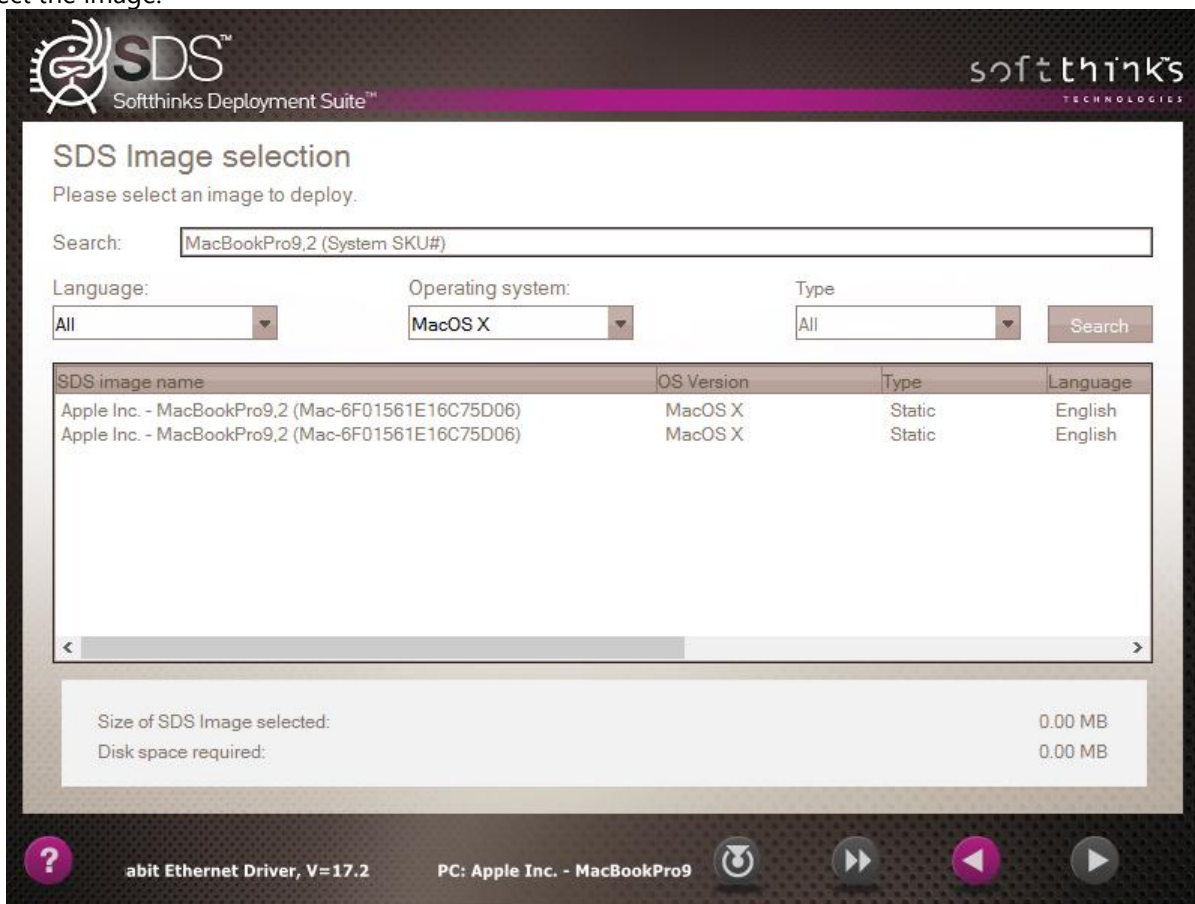
```
<!-- if mac, only restore ...-->
<SETVAR MACOS="%OS%"></SETVAR>    → DETECTING IF WE HAD SELECTED A MACOS IMAGE
<IF MACOS="20">
    <Module Id="115" ConfigFile="" Param1="1" Param2="6" FullScrn="0"></Module>
    <SEND_LOGS></SEND_LOGS>
    <SETVAR RESTORE="RESULT"></SETVAR>

    <IF CREATE="0" OP="&" RESTORE="1">
        <Module Id="119" ConfigFile="" Param1="0x1" Param2="0" FullScrn="0"></Module>
    </IF>
    <ELSE>
        <SEND_LOGS Source="X:\windows\system32\*.log" Destination="R:\ " ></SEND_LOGS>
        <Module Id="119" ConfigFile="" Param1="0x2" Param2="0" FullScrn="0"></Module>
    </ELSE>
</IF>
```

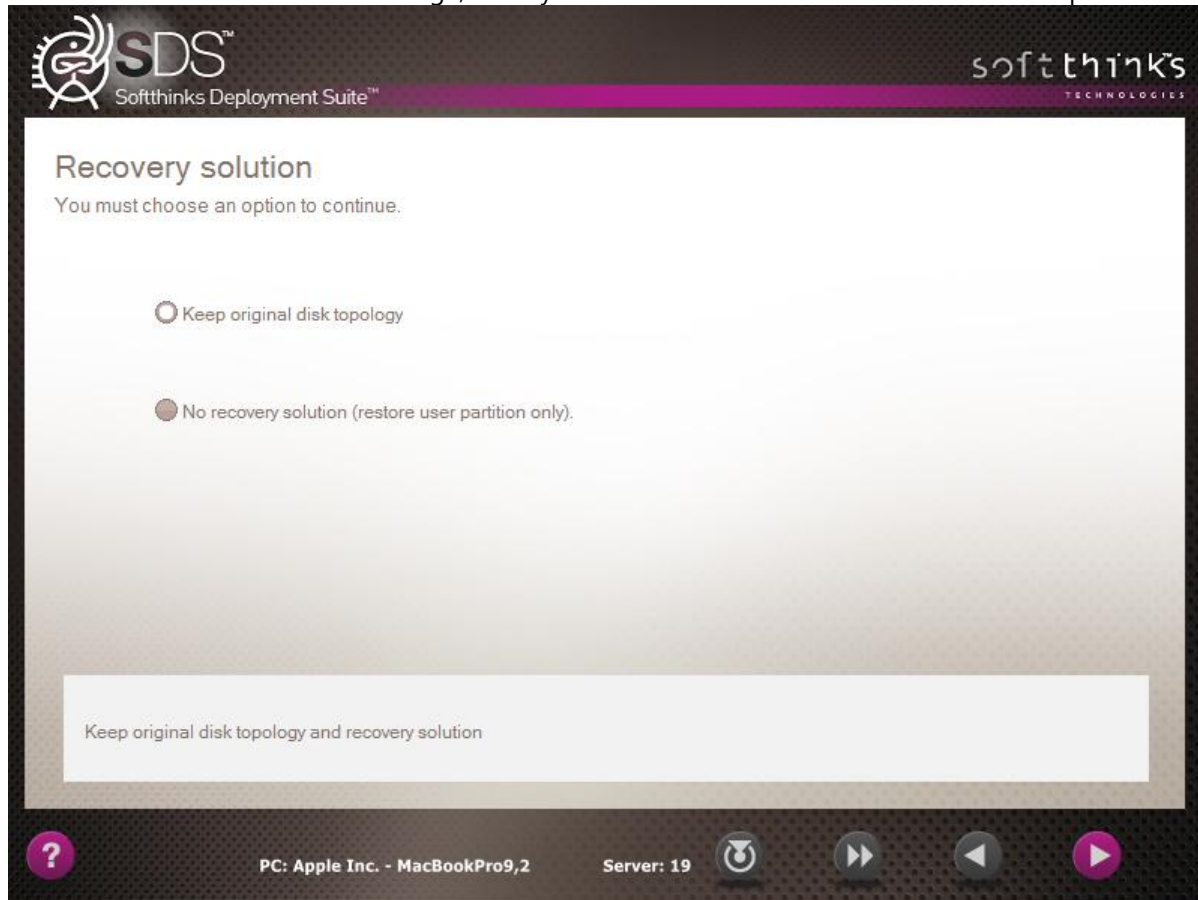


script.xml

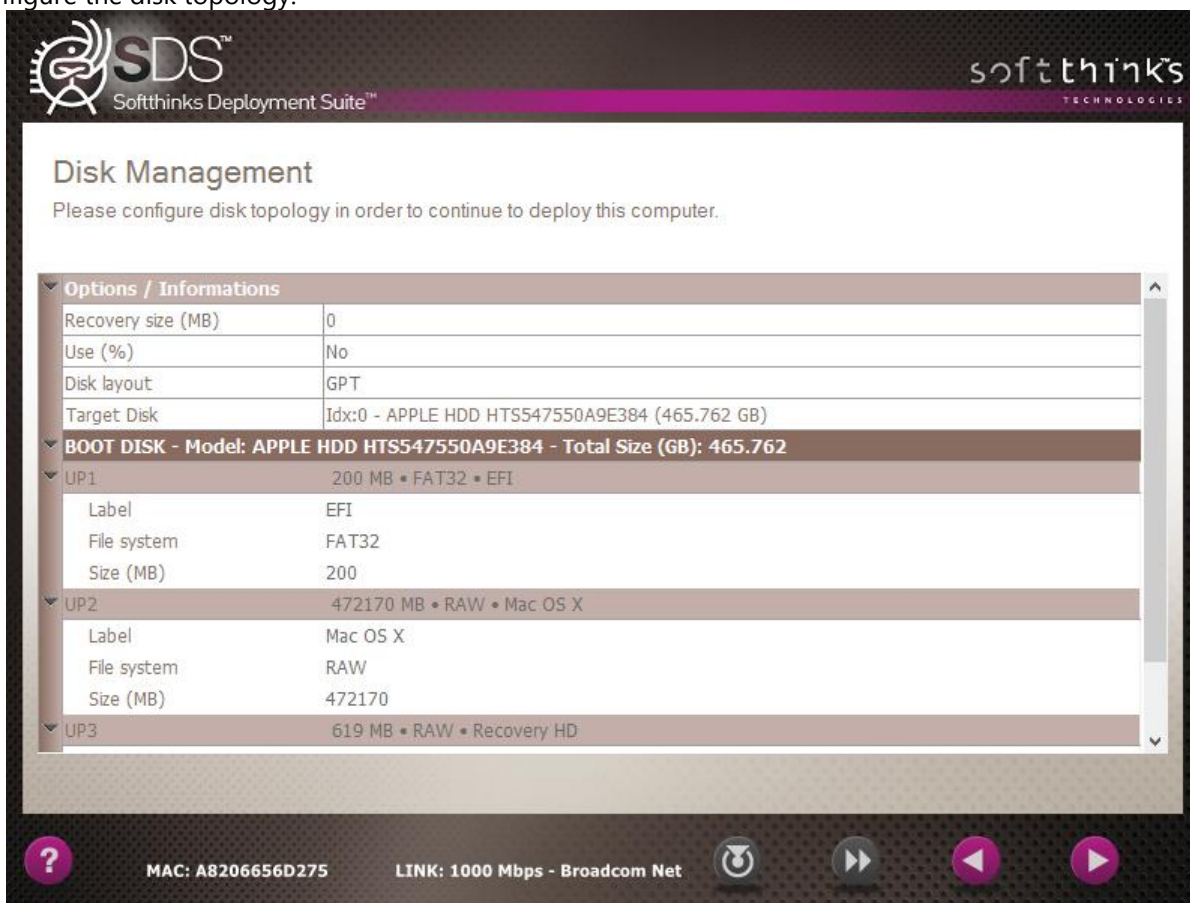
1. Boot your device to the SDS Server and select the image deployment option
2. Select the image:



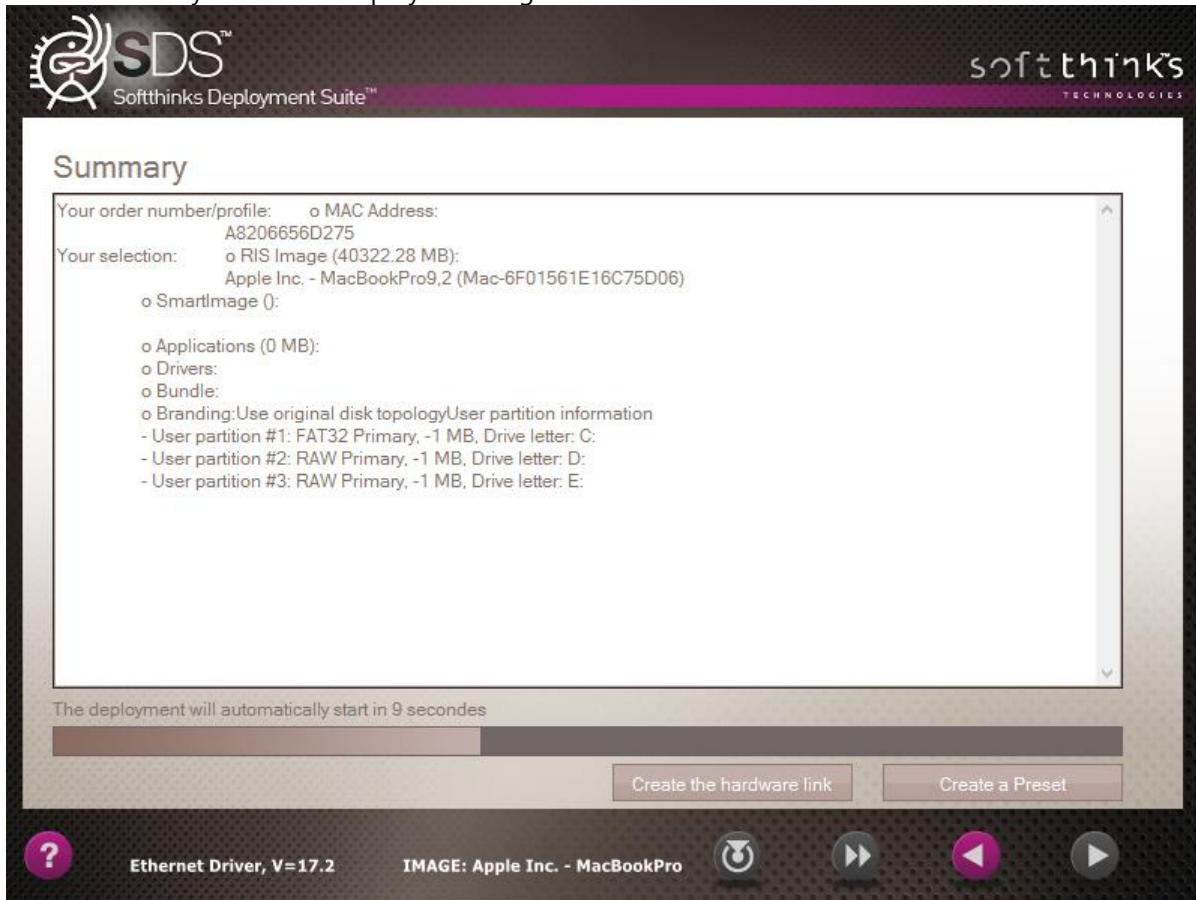
3. Select the method to download the image, usually it is automatic but here we are in a manual process:



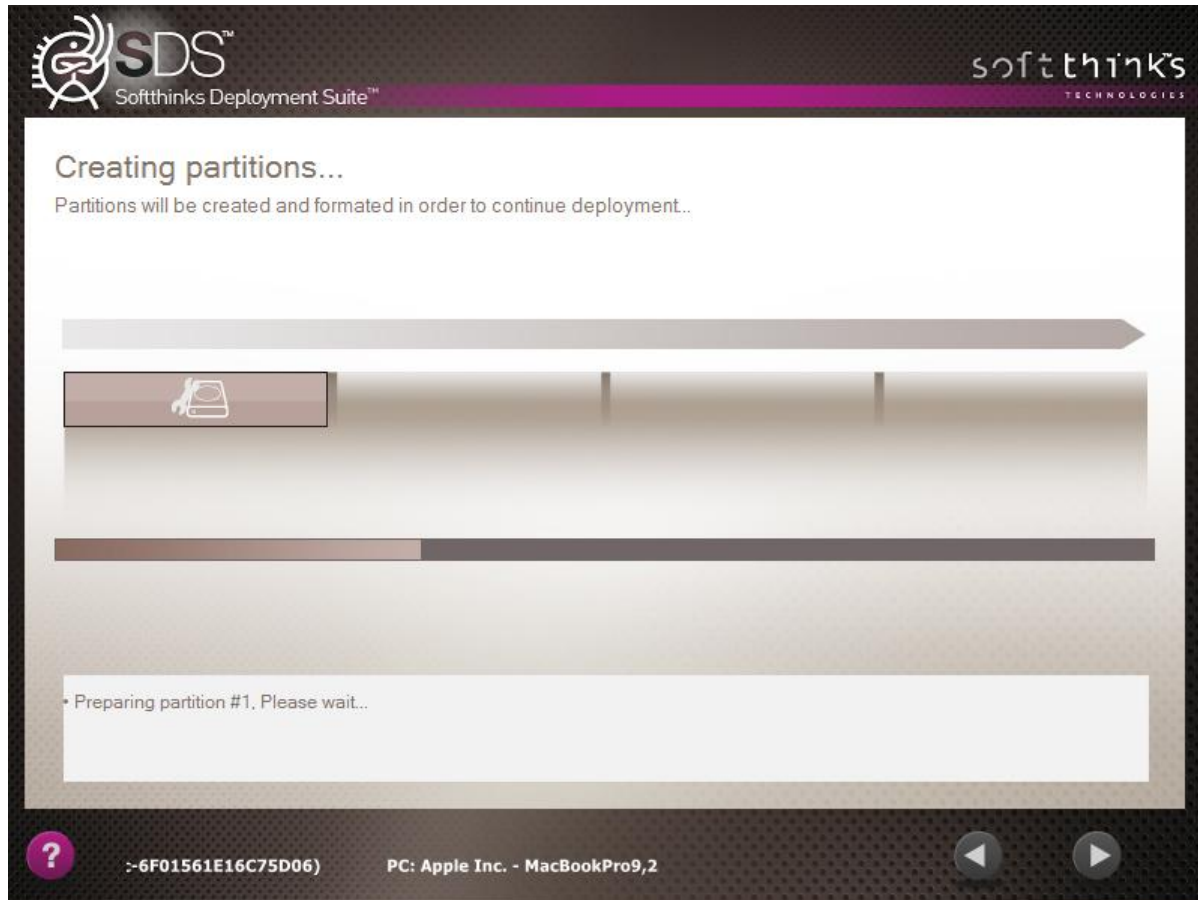
4. Configure the disk topology:



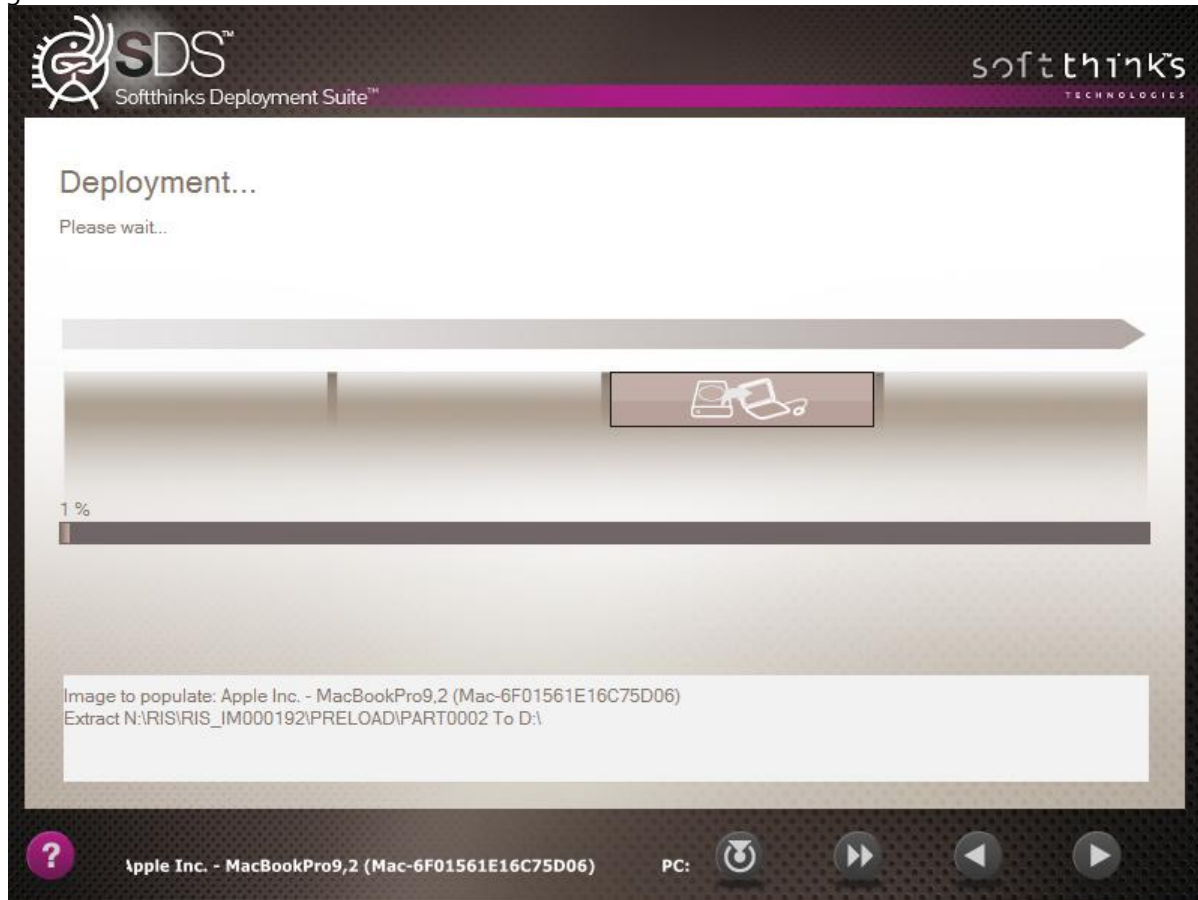
5. Review the summary before the deployment begins. You will have 15 seconds:



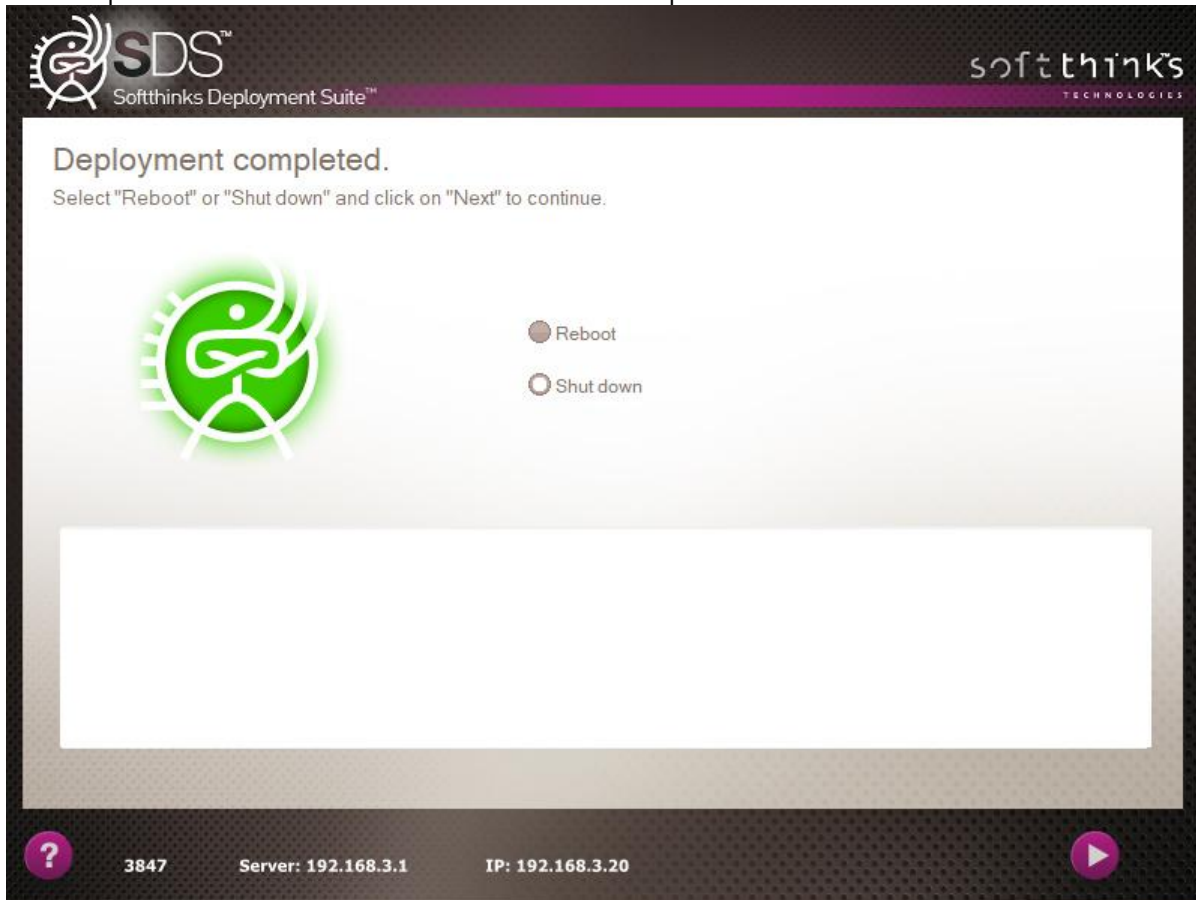
6. Partition creation:



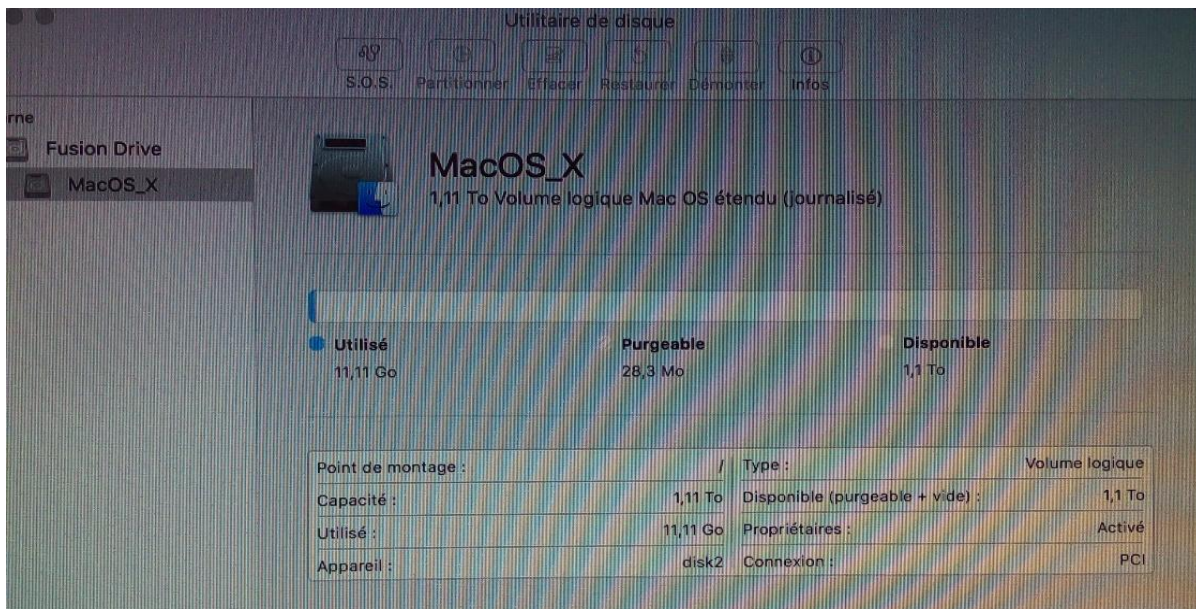
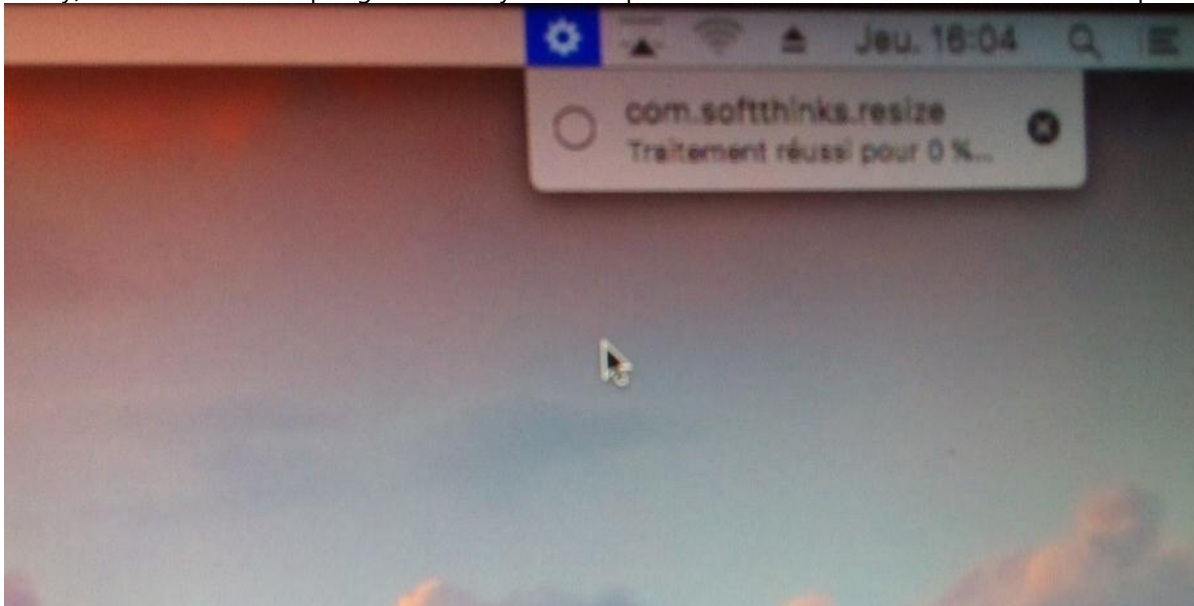
7. Image restoration:



8. Process completed. You can now reboot the Mac to the setup assistant:



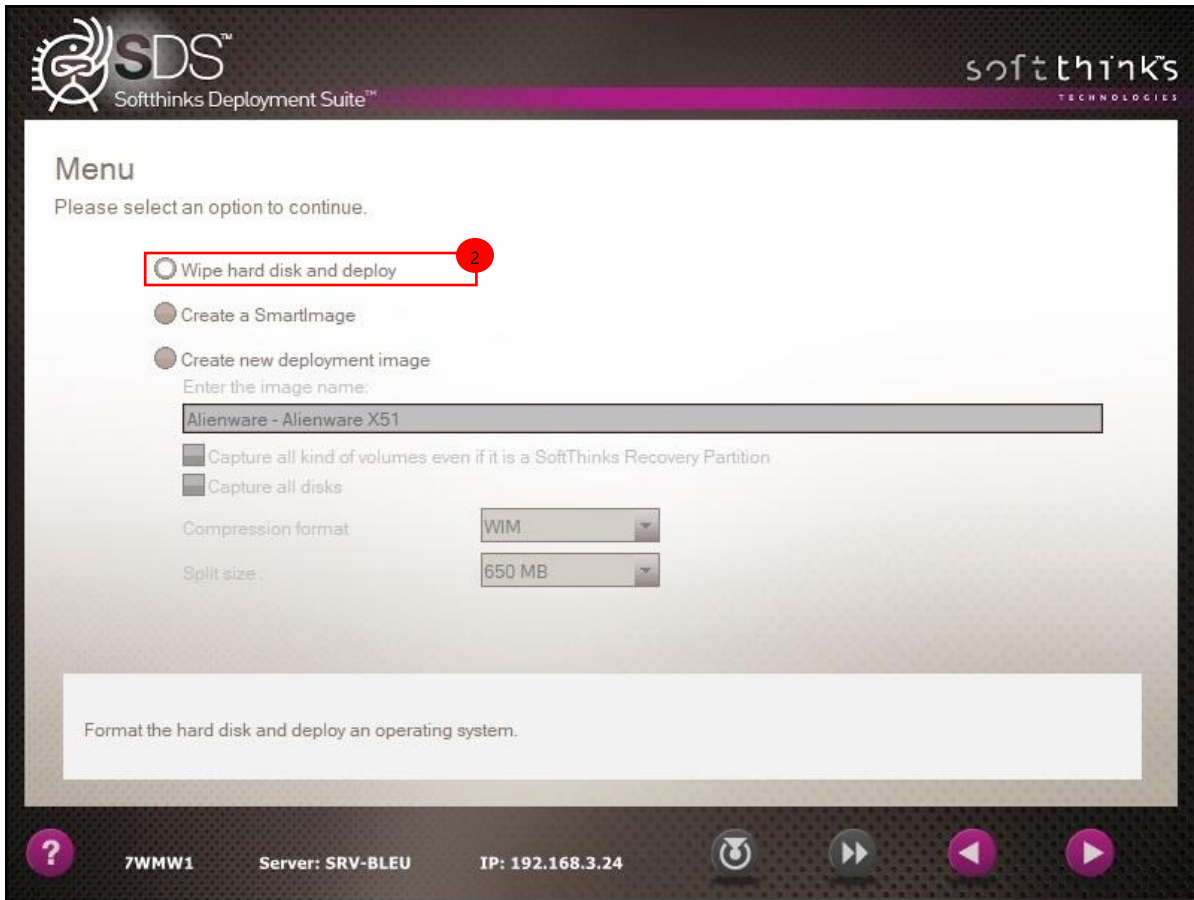
9. On first boot, once the user has setup his account, the setup assistant will be executed and the System Volume will be extended to its maximum size available. A file ResultResize.txt will be created in Library folder of the current user (~/.Library). It contains the output generated by Shell Script in the automator. It will look like those 2 pictures:



You can see that our image of 32GB by disk is expanded to the whole disk capacity of 1.1TB.

Linux image

1. Boot your device to the SDS Server
2. Select the image deployment option ² ("Wipe hard disk and deploy" in our example) and click Next:



3. Select the Linux image and click Next:

SDS Image selection
Please select an image to deploy.

Search:

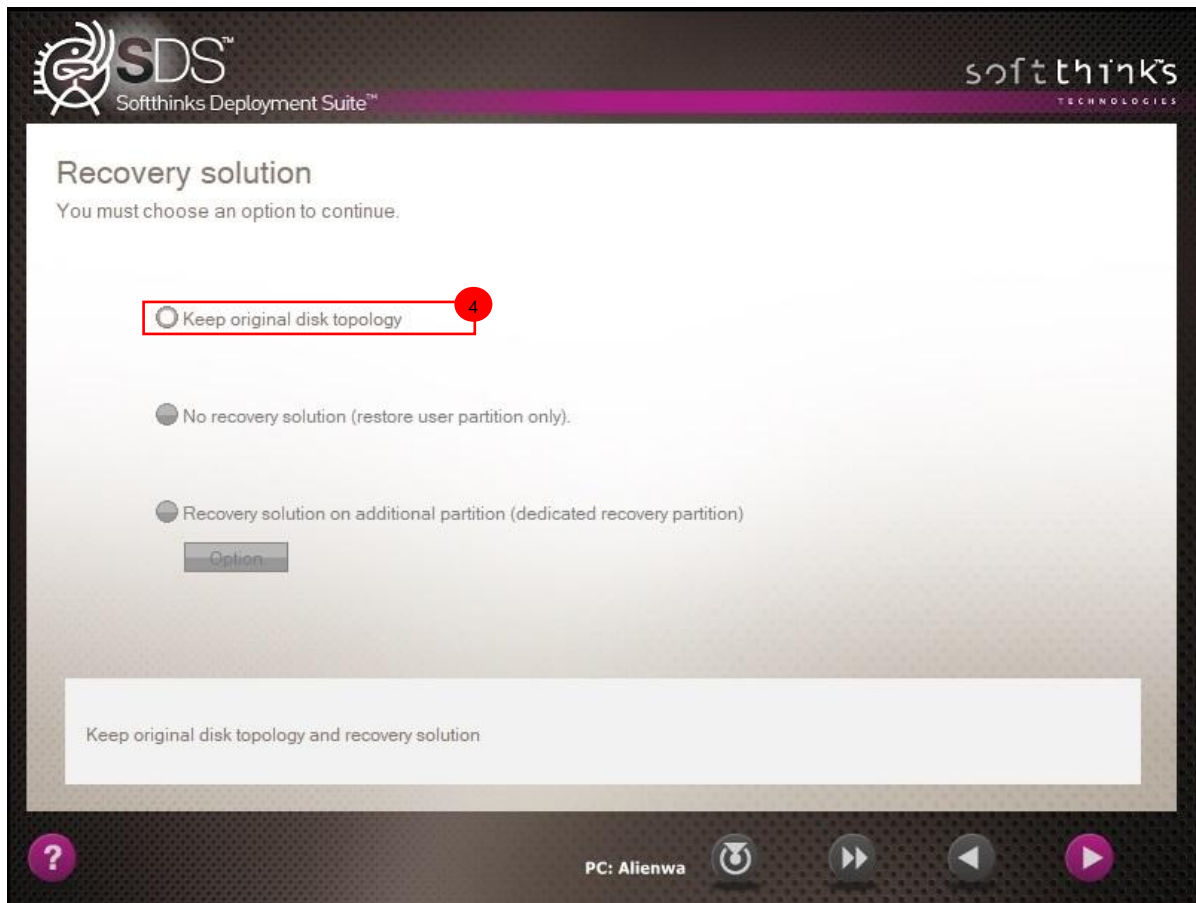
Language: Operating system: Type:

SDS image name	OS Version	Type	Language
LINUX - Alienware X51 - Ver.Linux Mint 18.2 Sonya	Linux	Static	English

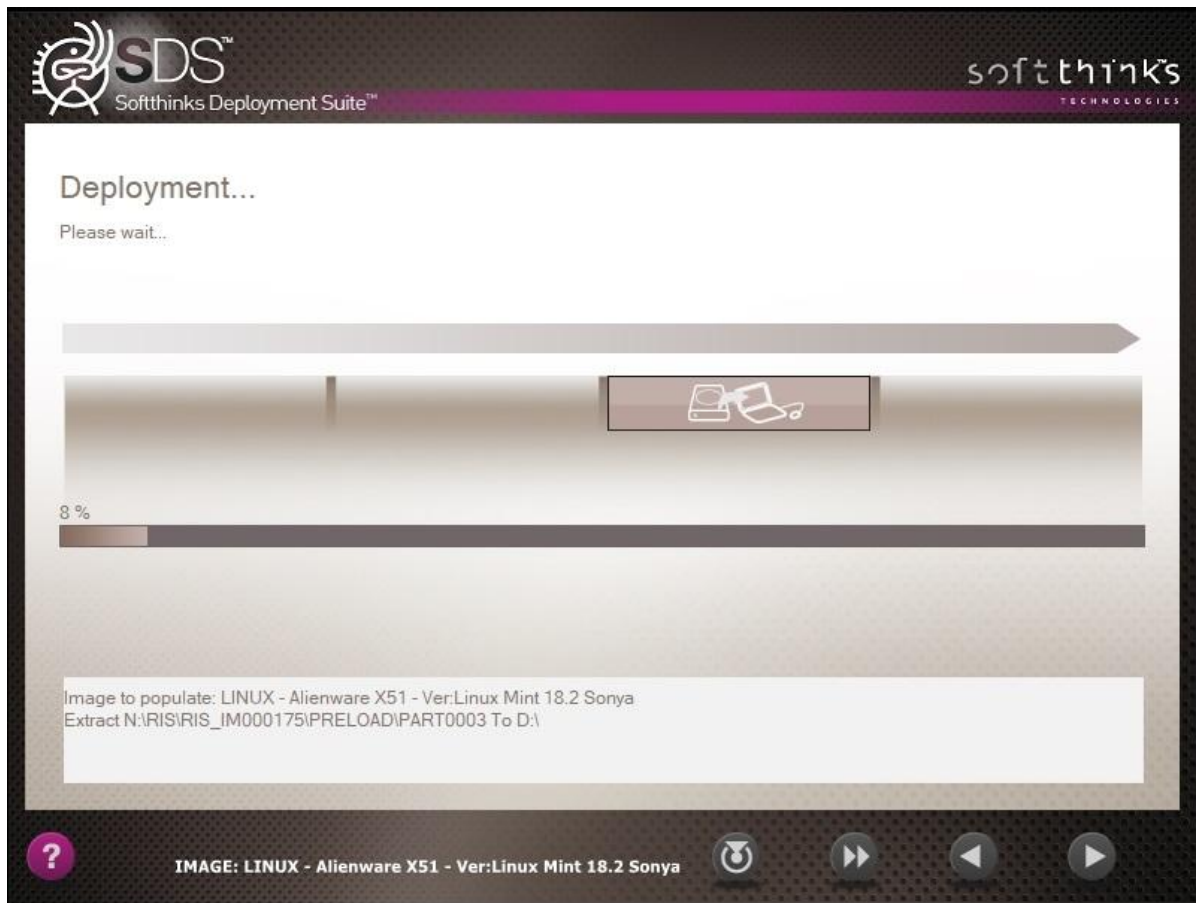
Size of SDS Image selected: 5588.02 MB
Disk space required: 5588.02 MB

? 18F69F55C5A LINK: 1000 Mbps - Realtek PCIe GBE Family

4. Choose "Keep original disk topology" option and click Next:

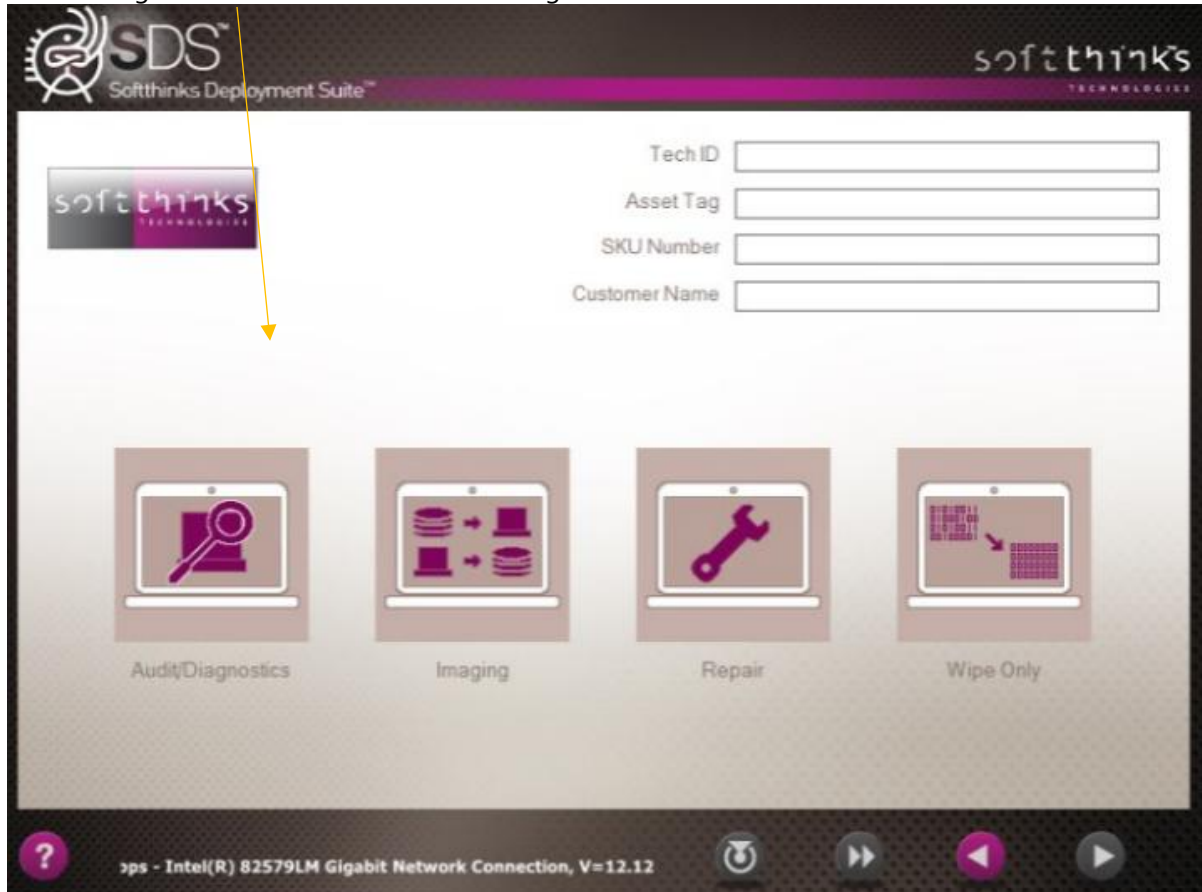


5. Your image is now being deployed:



Auditing and/or Diagnosing a Windows or macOS device

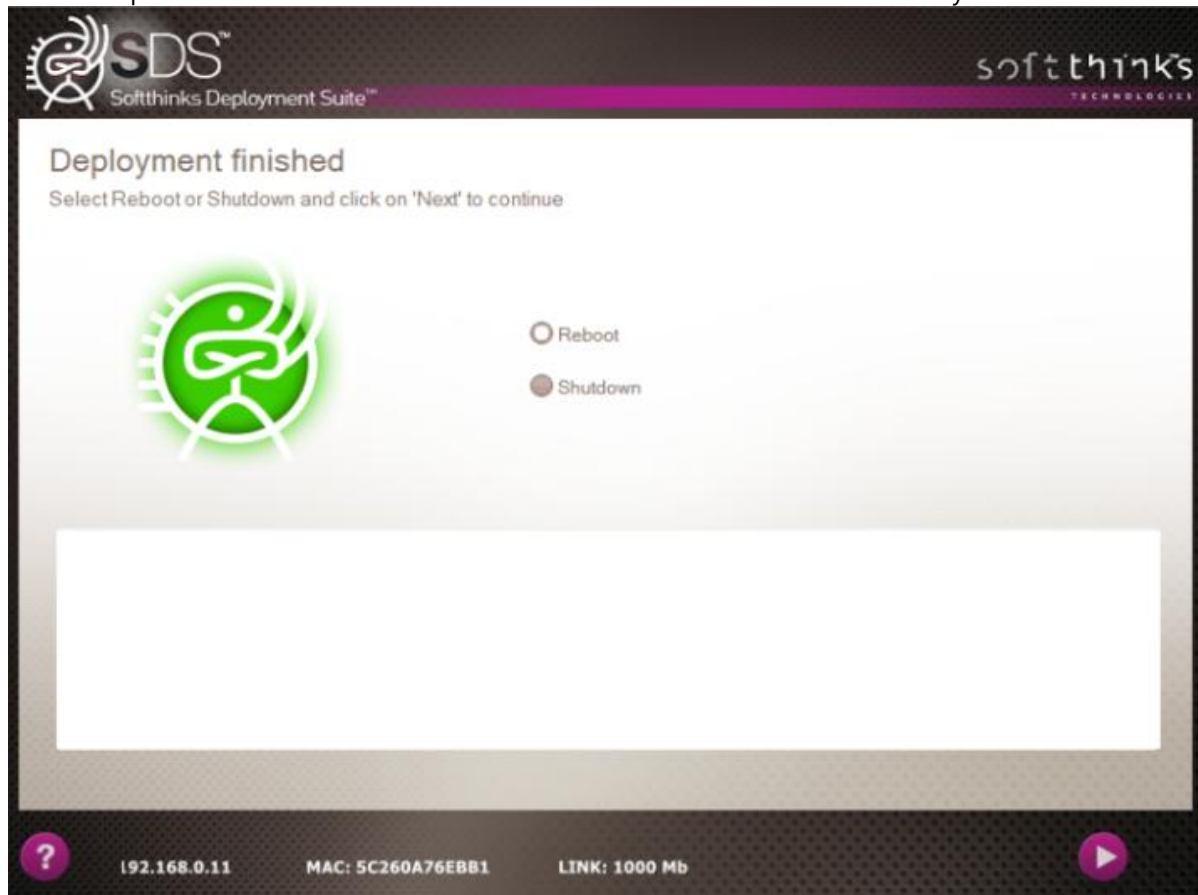
1. Click the Audit/Diagnostics button as seen on the image below:



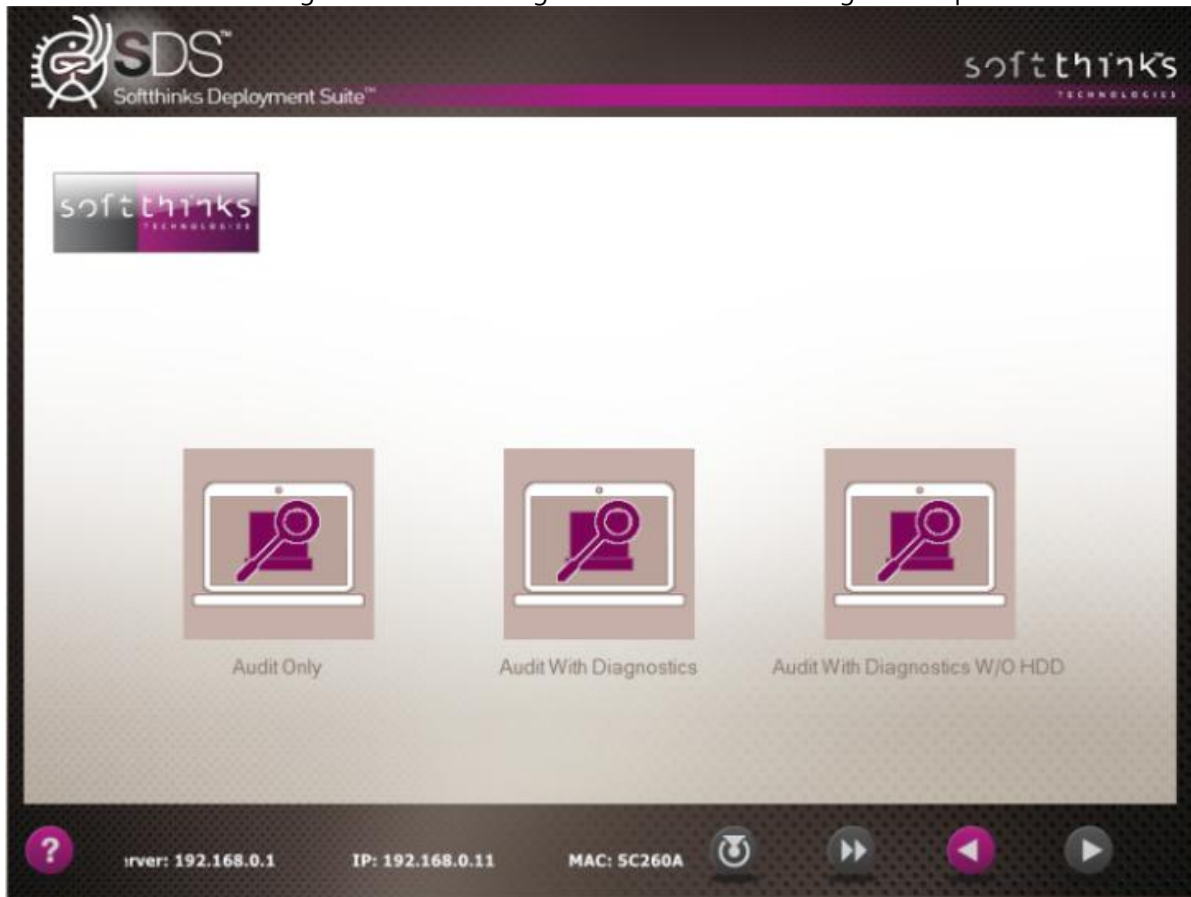
2. From there you will see the following menu:



3. Clicking on the Audit Only button will take you to the Deployment Finished screen as the Audit is actually completed when the computer PXE boots to the Server and the information is sent automatically to the database:



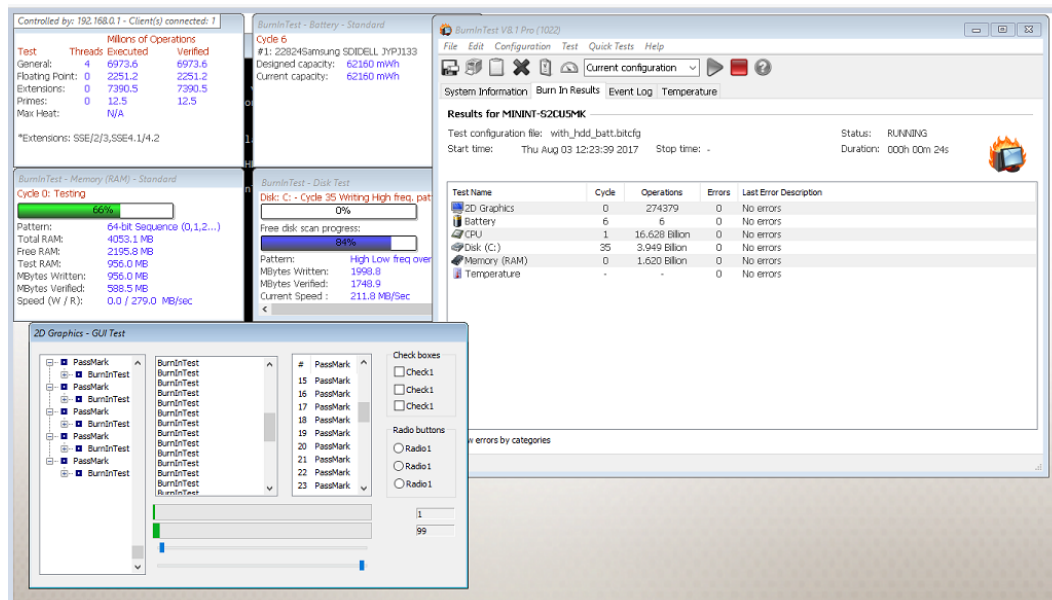
4. You do not need a Hard Drive in the computer to run the SDS software on it. You can diagnose a computer with or without a Hard Drive. Clicking on Audit With Diagnostics will run the testing for computers with a Hard Drive.



- The first test will be a SMART test for the Hard Drive if the SMART Technology is present in the Hard Drive. If SMART Technology is not available on the Hard Drive, it will perform a random 5% Read/Write sampling of the Drive.



- Once the SMART testing is completed, then the BurnInTest will start. These tests will run simultaneously and independently from the technician. This can be modified to test any component that is not driver related (CPU, RAM, Hard Drive, Battery, Temp, 2D Graphics, Keyboard, etc.), and will run for as long as you want with as much stress as you want to put on it.

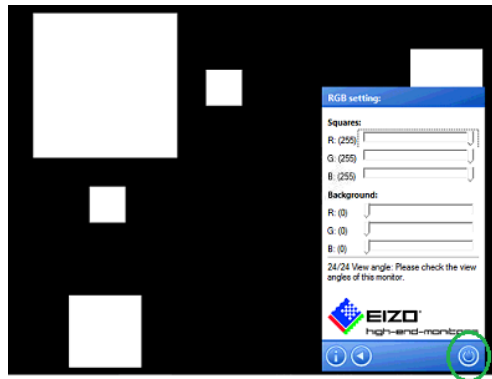


7. Tests not shown above that can be run before the simultaneous testing begins include the Eizo Monitor test:

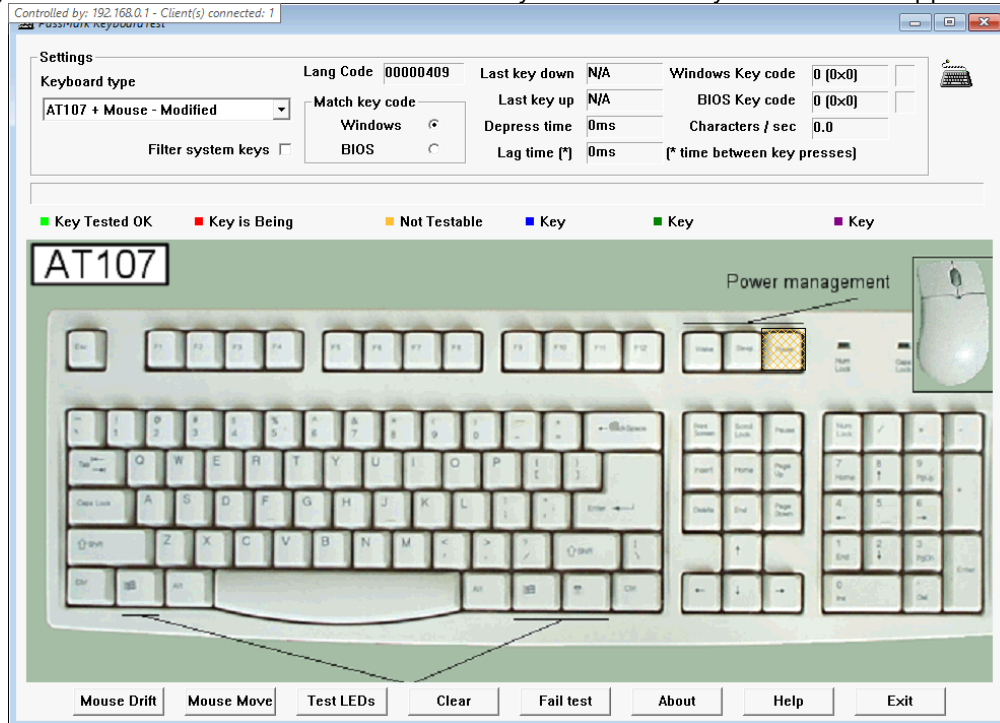


To perform this test, select the play arrow in the lower right corner. This will start a series of display tests such as color display and dead pixel identification, and etc.

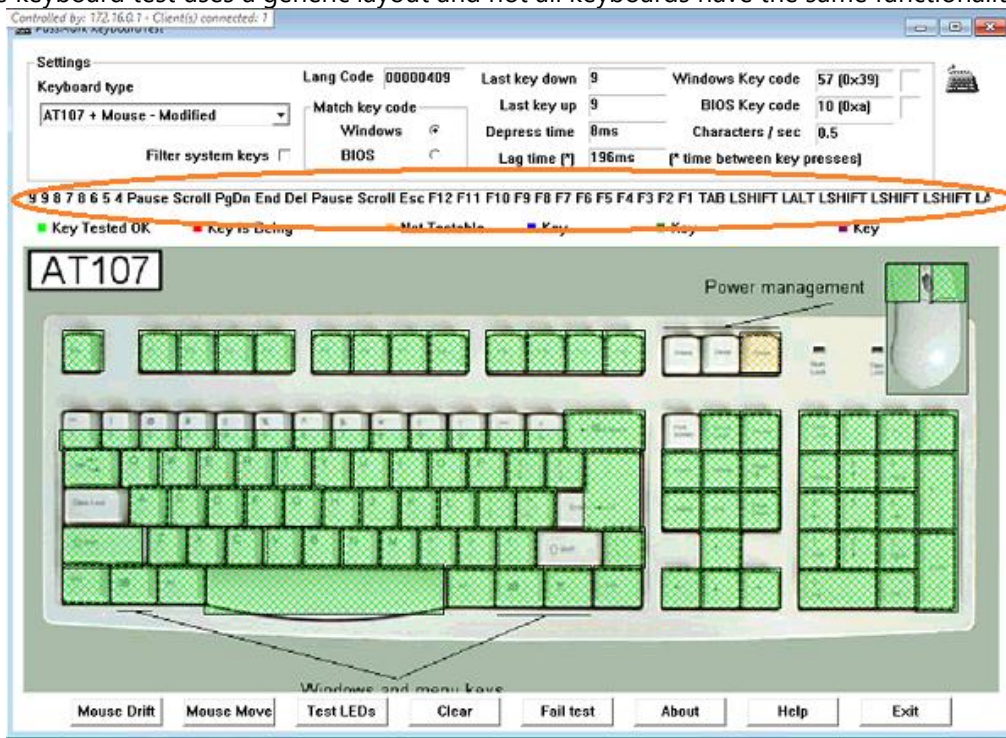
On the final screen below you will select the “close” button highlighted below to move to the next set of testing.



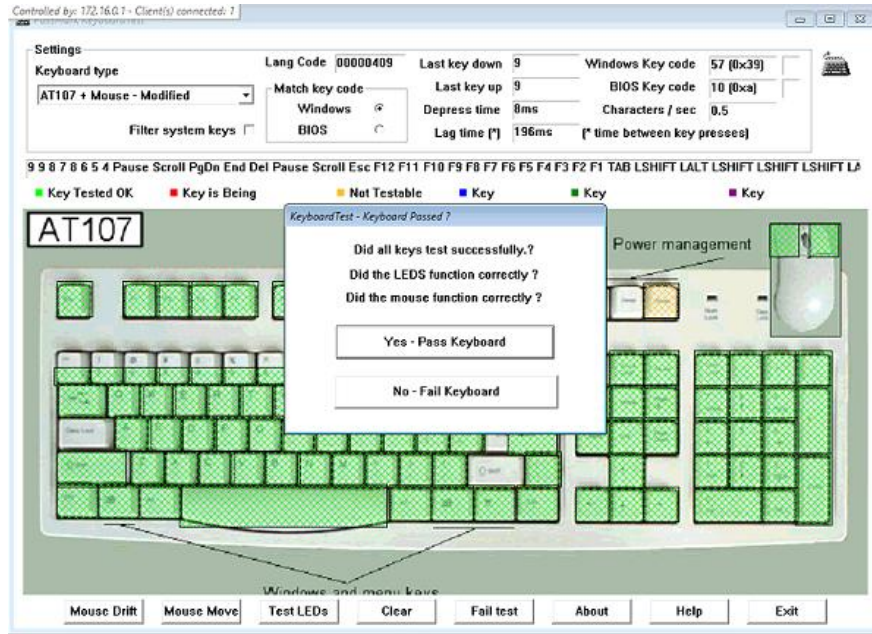
8. And the Keyboard Test. This test verifies the functionality of the unit's keyboard and will appear as the image below:



For this test you will click the touchpad buttons and press all keyboard keys and watch the screen for a response to the corresponding keystroke. You will also be able to see the keystroke in the area of the test circled in the next image. This image is an example of a passed keyboard. Notice that not all keys are highlighted in Green. This is because the keyboard test uses a generic layout and not all keyboards have the same functionality.



Once the Keyboard test has been completed select EXIT in the lower right corner on the screen. This will bring up the following: Select Yes-Pass Keyboard or No-Fail Keyboard to continue.



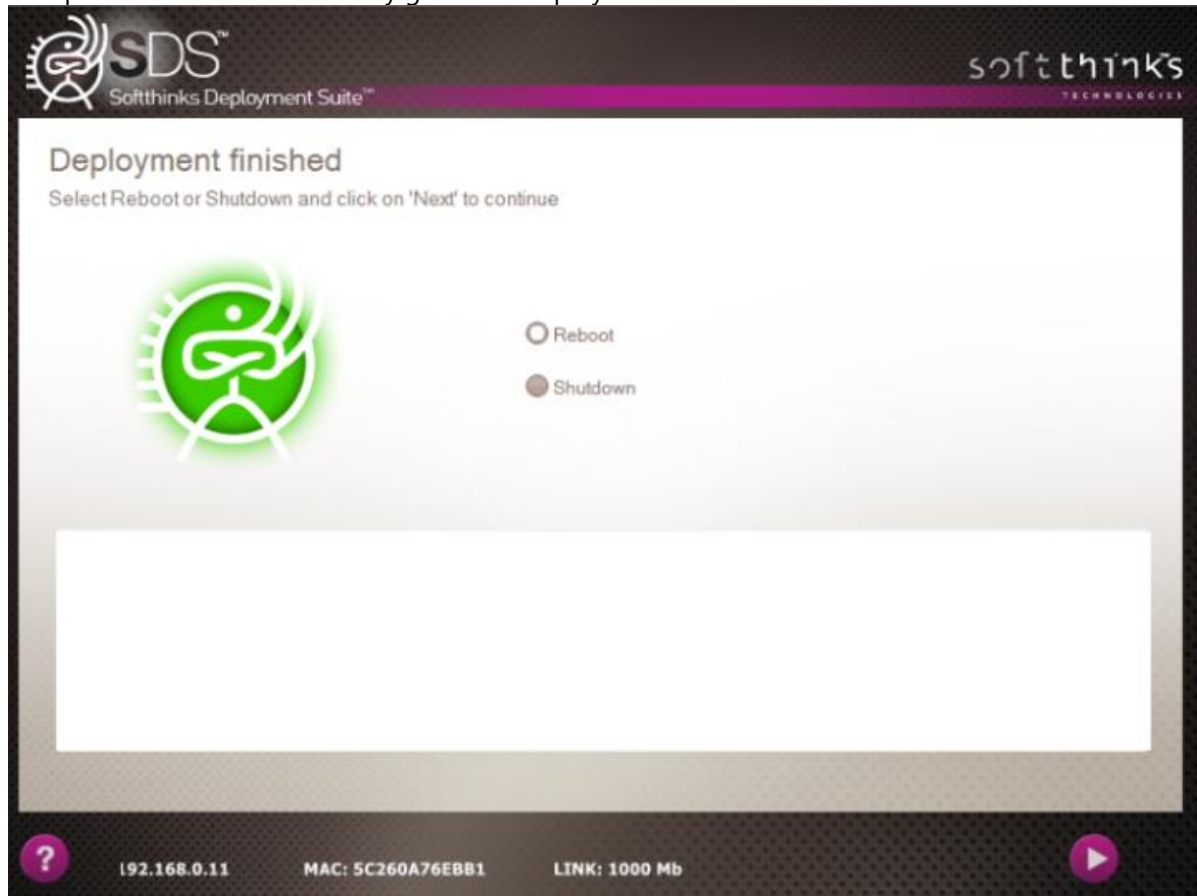
9. After the testing is completed, if a test fails you will see a screen similar to the one below: The one below is for a Battery that failed for not being able to charge past 75% of its battery threshold. At this point the system will not continue. You will have to shut down the unit manually after you review the information displayed.



10. If the unit passes all tests the following screen will be displayed:



11. The computer will then automatically go to the Deployment Finished Screen:



You can then choose to Reboot or Shutdown the computer at this point.

Wiping a device

SDS can wipe any HDD and SSD (or removable drives as memory cards if needed), even with MS Bitlocker, and HPA/DCO technologies* (if your target disk already has an HPA / DCO installed, we can deactivate / remove HPA and remove DCO before a wipe operation).

All cards compatible with CSMI protocol (*Common Storage Management Interface*) are supported. LSI HBA SAS/SATA cards flashed to IT firmware are also supported through LSI utility SASxIRCU.exe, which is working under WINPE 10.240. Some cards not compatible with CSMI could work if a dump tool exist as third party to list disk SAS address.

SDS wiping process is certified by ADISA:



SDS supports the 19 most popular wiping protocols:

- 0 - Basic 0
- 1 - Basic random character
- 2 - U.S. Standard, DoD 5220.22-M
- 3 - U.S. Standard, DoD 5220.22-M (e)
- 4 - U.S. Standard, DoD 5220.22-M (ECE)
- 5 - US Army AR380-19
- 6 - Peter Gutmann
- 7 - Bruce Schneier
- 8 - German VSITR
- 9 - Russian GOST P50739-95
- 10 - NAVSO P-5239-26 (RLL)
- 11 - NAVSO P-5239-26 (MFM)
- 12 - Canadian RCMP TSSIT OPS-II
- 13 - US Air Force 5020
- 14 - U.S. Standard, DoE M205.1-2
- 15 - Delete Partitions
- 16 - Normal Secure Erase (NIST 800-88)
- 17 - Enhanced Secure Erase (NIST 800-88)
- 18 - Sanitize (NIST 800-88)

* HPA (Host Protected Area) and DCO (Device configuration overlay) designate a hidden area on many of today's hard disk drives.

Some Standard Basic wipe algorithms like DOD include verification during the wipe process.

You could also install thumbprint after wipe operation, install legacy boot loader reflecting wipe result or simply create a data partition on the disk to get it ready to use.



SDS 18.0 added the ability to have thumbprint string loaded from a file rather than specified in the script. This allows for different thumbprints to be used. This file size is limited to 512 bytes (since a disk sector is 512 bytes).

Rack Mode

SDS Wipe solution supports CSMI compliant racks (without limitation on the number of ports).

24-Port Wipe Arrays

- Port mapping allows for quick drive identification and hot-swapping.
- Hard drive smart testing.
- 6Gb/s Data rate to the drives (based on the controller).



The Wipe Arrays can be purchased from SoftThinks or we can tell you the components needed to build them yourself.

Please refer to [How to setup wipe rack view](#) to enable the Rack view mode.

Note: In rack mode, you can wipe full disks, not volumes. All other options from the classic mode are available, as fullscreen or window mode, or starting automatically the wipe process.

Note: For the moment SDS Wipe rack mode does not support enclosure or expander.

SSD wiping though Secure Erase and Sanitize hardware-based protocols

Secure Erase and Sanitize protocols are more dedicated to SSDs since they are quicker (5min for a SSD wiped with Secure Erase / Sanitize vs 120min to wipe a mechanical HDD of the same size) and prevent decreasing their lifetime, but they can be used with mechanical HDDs.

Those protocols are managed directly by the disk firmware itself and so they are usable only on disks supporting them (some NVMe don't support those protocols).

Both can be used through ATA / SATA / SAS card (CSMI protocol compliant), but not through USB.

The target disk has to be configured as AHCI in the BIOS.

Secure erase protocol does not provide progression or status of the operation whereas for Sanitize protocol a progression is available with a time remaining but it depends on the disk firmware capabilities.

In addition, the abort operation is not possible (not supported by protocol)

Once a disk started to wipe itself you could not interrupting it is like secure erase command

If Secure Erase or Sanitize protocol are not possible, we will switch back to a default wipe algorithm which can be customized or raise an error.

Secure Erase

- Normal: write 0 or 1, depending of disk manufacturer
- Enhanced: write a predefined pattern

Sanitize

The sanitize protocol supports 3 modes:

- Block Erase Ext:
The BLOCK ERASE EXT command starts a block erase sanitize operation (i.e., a sanitize operation (see 4.17.4) that uses the block erase method on the user data areas, including user data areas that are not currently allocated (e.g., previously allocated areas and physical sectors that have become inaccessible)) to cause the user data to become irretrievable.
- Crypto Scramble Ext
The CRYPTO SCRAMBLE EXT command starts a crypto scramble sanitize operation (i.e., a sanitize operation (see 4.17.4) that changes the internal encryption keys that are used for user data) causing the user data to become irretrievable.
- Overwrite Ext
The OVERWRITE EXT command starts an overwrite sanitize operation (i.e., a sanitize operation to overwrite the internal media with a constant value) that fills physical sectors within the Sanitize operation scope with a four-byte pattern specified by the OVERWRITE PATTERN field of the command. The host also specifies a count for multiple overwrites and whether to invert the four-byte pattern between consecutive overwrite passes.

SDS will choose the first available mode in order to get the best performance and compatibility.

Example of wipe user interface

1. Select the Wipe Only Button from the Welcome Screen:

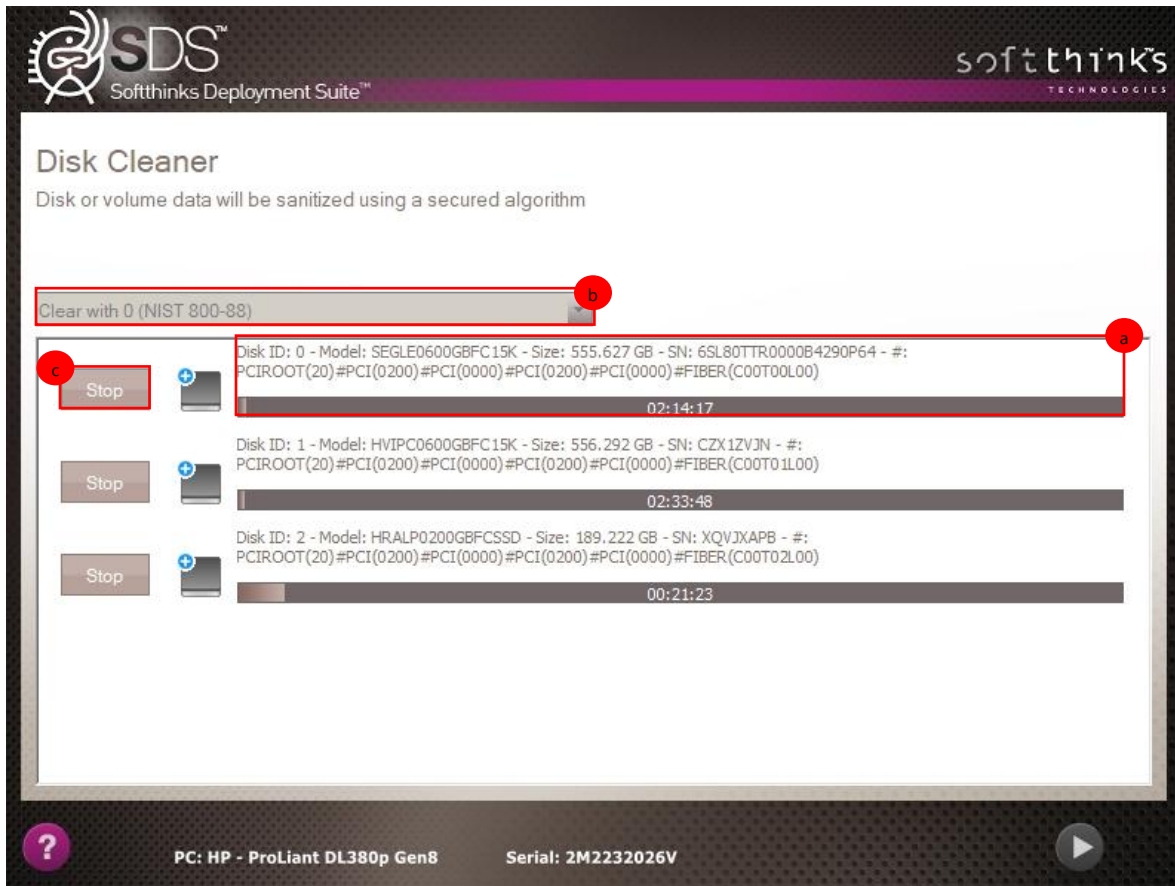


2. In the next screen below, you will be asked to choose the wipe algorithm: SoftThinks ADISA Certified Single-Pass Basic 0 wipe, or the 3-Pass U.S. Standard, DoD 5220.22-M wipe. You will also have the choice to do the wiping with or without hardware testing of the computer or Array that the Hard Drives are in:

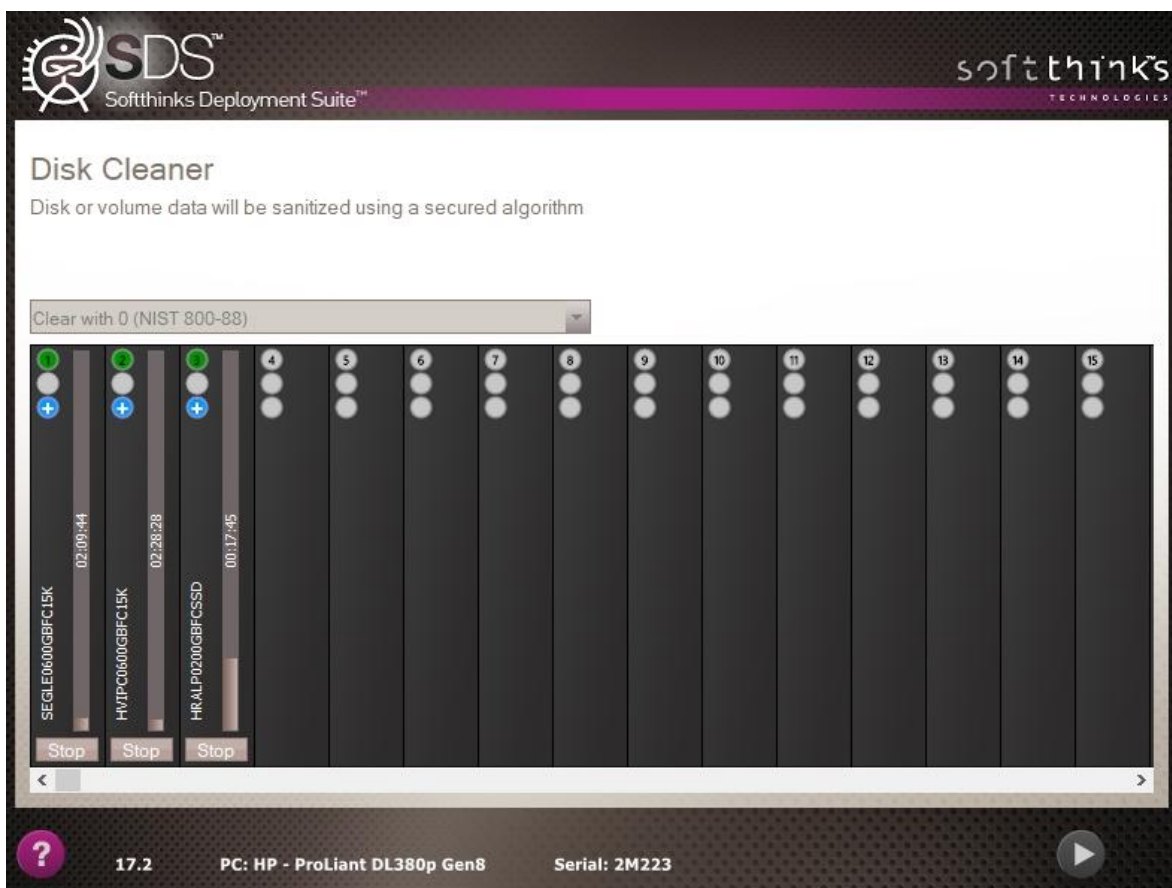
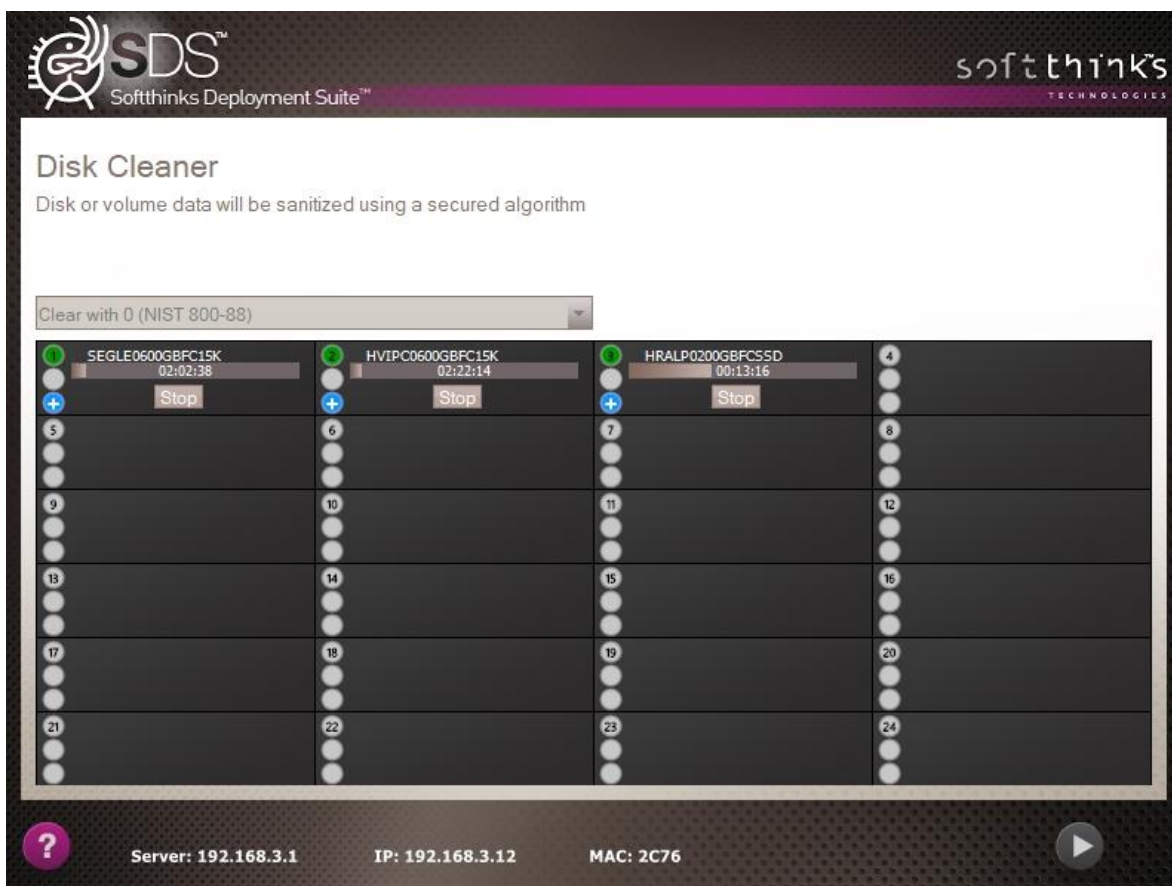


In addition, you could also be informed about SMART disk status (OK/Bad/Warning/Unknown colored cross) before wiping a disk. It will save your time and will avoid you refurbishing crappy disk.



3. a) This screen displays the Hard Drive information and progress of the wipe ^a. Any Hard Drive that is found in the computer will be wiped with the same protocol and listed below. The STOP button will cancel the wipe in progress. If successful, a screen will pop up with a "green" pass symbol. If the wipe fails for any reason the "red" fail symbol will display.






- b) In the rack mode, the screen looks like one of the screenshots below (the number of lines and columns can be customized as explained in [How to setup wipe rack view](#)):



The 1st LED indicates if a device is plugged at this location in the rack:

-  No device
-  Device present

The 2nd LED shows if the wipe process completed successfully or not:

-  No wipe in progress, or wipe not completed
-  Wipe completed successfully
-  Wipe failed

The 3rd LED corresponds to the SMART status:

-  Unknown
-  Good
-  Caution
-  Bad

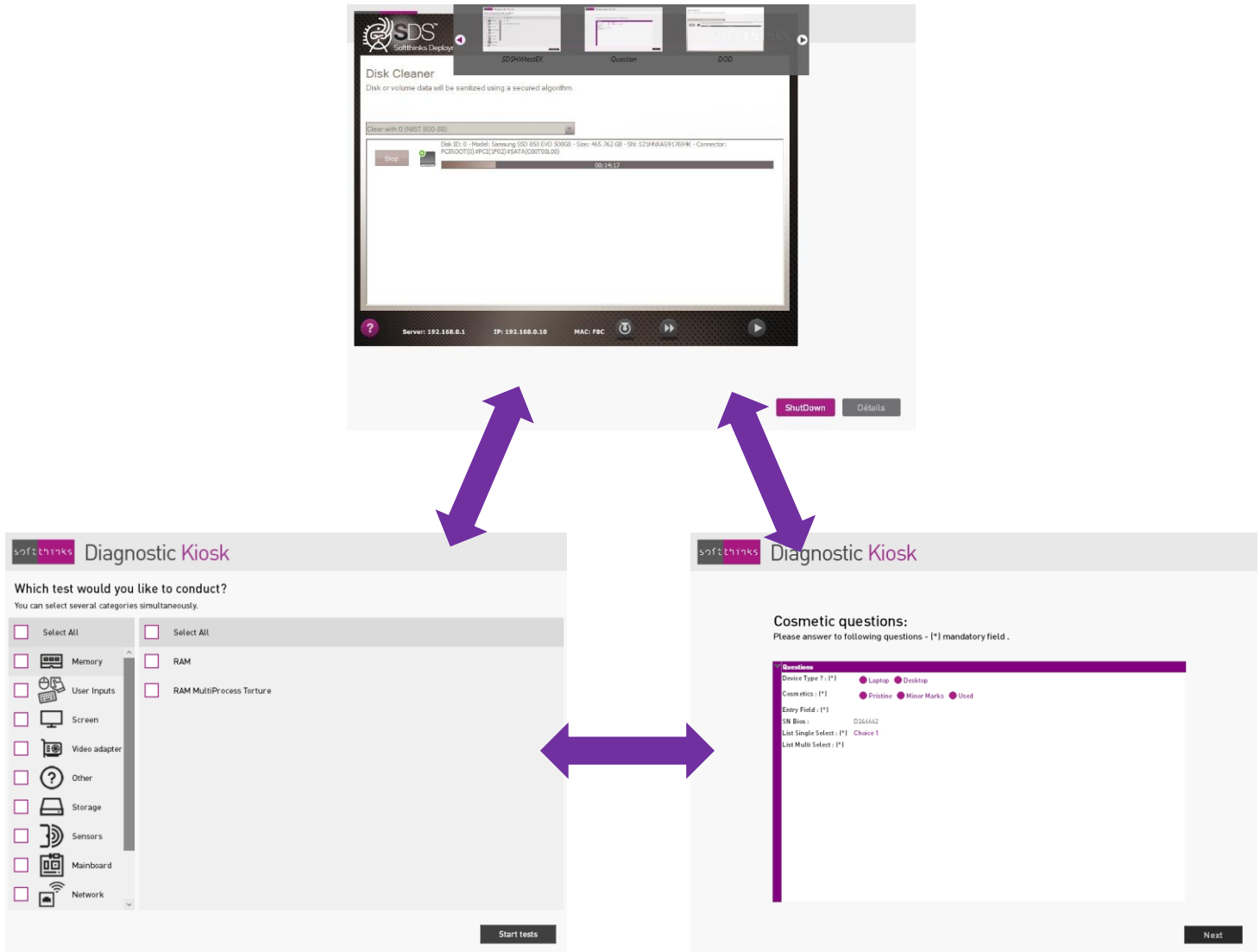
Note: *If the SMART status is unknown you cannot use secure erase or Sanitize methods.*

Multitasking during wipe operations

Wipe process can take time and so it can be useful to perform other actions during this operation, as running hardware diagnostics and/or answering some cosmetic or other customized questions on device.

SDS 20.0 added the possibility to run several operations in parallel and to switch between them, allowing you to save time.

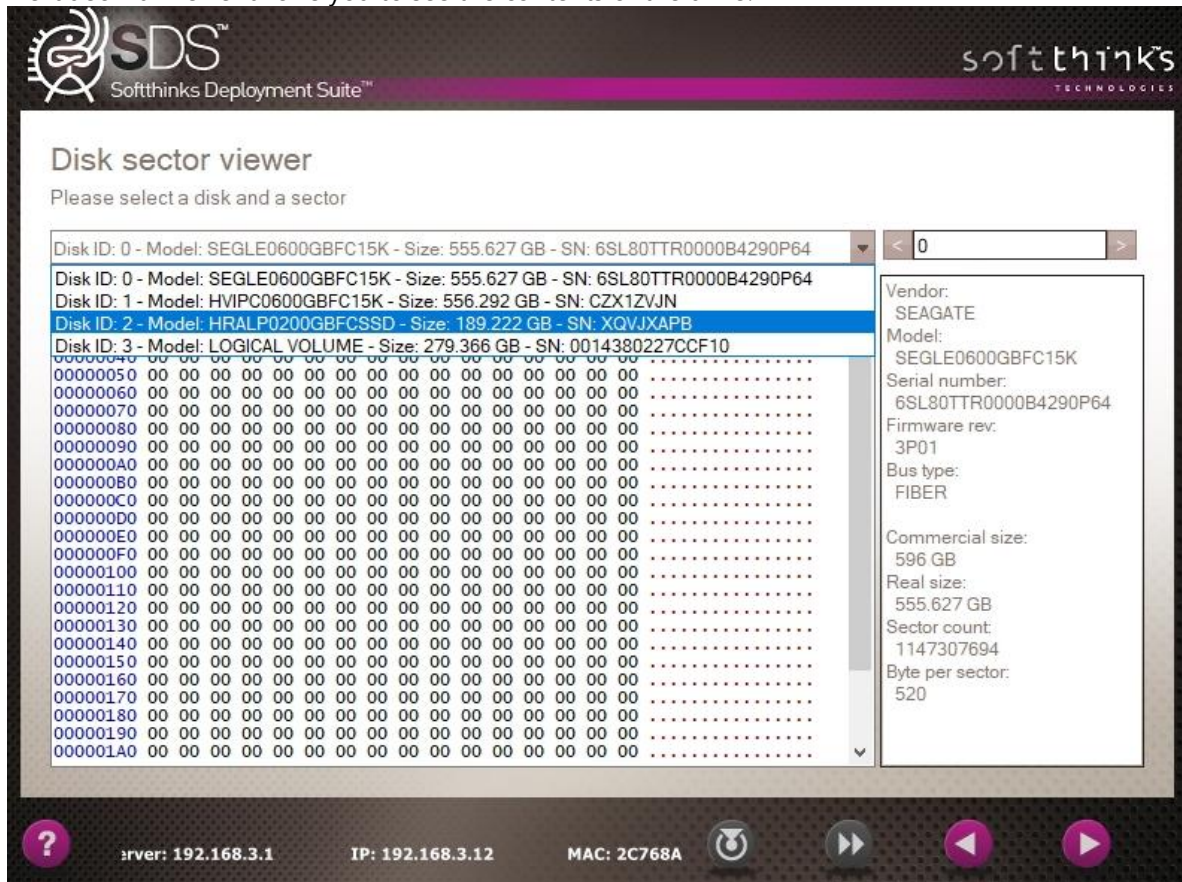
You can just press ALT+M to switch between the operations or press SHIFT+ALT+M to display the modules running in the navigation panel which appears on the top to select specifically the operation you want to see:



For the moment, only those operations can run simultaneously but let us know if you would like to run other ones in parallel.

Hexadecimal viewer

Optionally, a hexadecimal viewer allows you to see the contents of the drive:




Wipe Report & Label

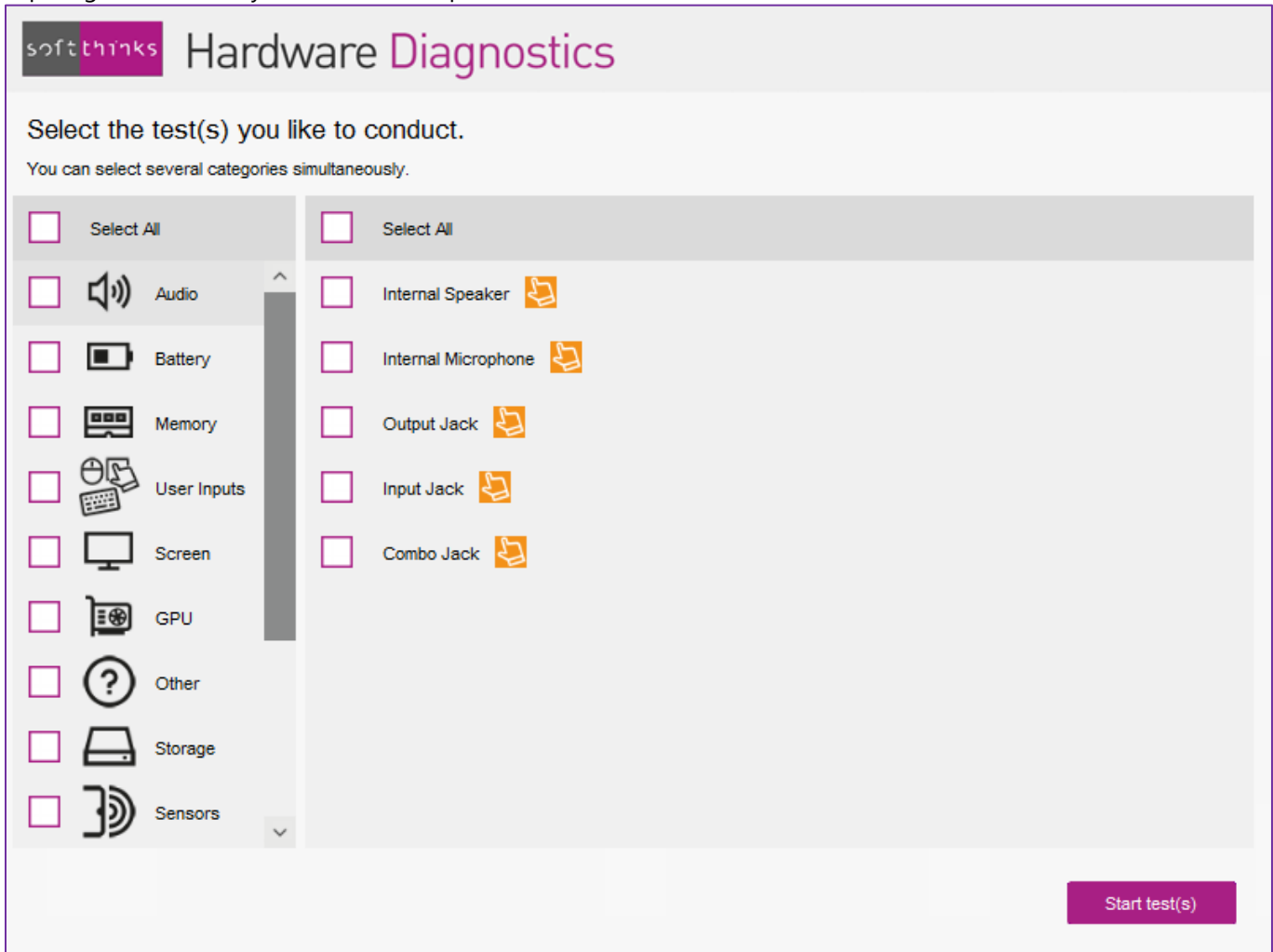
You can automatically generate, and eventually print it / upload it to FTP / send by email a wipe report and/or a label at the end of the process (See [Reporting](#)).

Diagnosing a device

SDS can diagnose hardware issues on any device which can boot through PXE or from a bootable USB key, as Windows, macOS, Linux desktop PCs, laptops or tablets.















Tests selection

You can run up to 56 tests grouped by categories. When possible, the tests are fully automated and can be run in parallel, else the  pictogram indicates you those who require manual intervention:



Hardware Diagnostics

Select the test(s) you like to conduct.
You can select several categories simultaneously.

<input type="checkbox"/> Select All	<input type="checkbox"/> Select All
<input type="checkbox"/>  Audio	<input type="checkbox"/> Internal Speaker 
<input type="checkbox"/>  Battery	<input type="checkbox"/> Internal Microphone 
<input type="checkbox"/>  Memory	<input type="checkbox"/> Output Jack 
<input type="checkbox"/>  User Inputs	<input type="checkbox"/> Input Jack 
<input type="checkbox"/>  Screen	<input type="checkbox"/> Combo Jack 
<input type="checkbox"/>  GPU	
<input type="checkbox"/>  Other	
<input type="checkbox"/>  Storage	
<input type="checkbox"/>  Sensors	

Start test(s)

This list is totally customizable (you can decide to remove some of them). You can also edit or totally redefine the categories, as well as the labels and bitmaps.

You have also the possibility to dynamically hide tests which are not relevant, either because we automatically detect that the element to test is not present (device without optical drive reader, screen without touch capability) or based on responses made in audit module (for example the keyboard was not supplied with a desktop PC and you don't want to test the operator's keyboard he plugged to use our solution).

You can bypass this selection screen and launch direction different tests profiles that you can customize depending on your needs (quick tests, full tests, quality control tests, stress tests...).

List of available tests

	Test	Test Environment			Automated Test ⁽⁸⁾	Test Duration
		Windows	Windows to Go	WinPE		
CPU	General purpose instructions Test	✓	✓	✓	✓	1min (customizable)
	Floating Point Unit Instructions Test	✓	✓	✓	✓	1min (customizable)
	Prime Number Test	✓	✓	✓	✓	1min (customizable)
	MMX Test	✓	✓	✓	✓	1min (customizable)
	SSE Test	✓	✓	✓	✓	1min (customizable)
	SSE2 Test	✓	✓	✓	✓	1min (customizable)
	SSE3 Test	✓	✓	✓	✓	1min (customizable)
	AES Test	✓	✓	✓	✓	1min (customizable)
	FMA3 Test	✓	✓	✓	✓	1min (customizable)
	Maximum heat Test	✓	✓	✓	✓	10min
	CPU Voltage Monitoring	✓	✓	✓	✓	0s (continuous monitoring) ⁽⁴⁾
	CPU Temperatures Monitoring	✓	✓	✓	✓	0s (continuous monitoring) ⁽⁴⁾
	CPU Powers Monitoring	✓	✓	✓	✓	0s (continuous monitoring) ⁽⁴⁾
	CPU Clocks Monitoring	✓	✓	✓	✓	0s (continuous monitoring) ⁽⁴⁾
	CPU Utilization Monitoring	✓	✓	✓	✓	0s (continuous monitoring) ⁽⁴⁾
MAINBOARD	Mainboard Voltages	✓	✓	✓ ⁽⁸⁾	✓	0s (continuous monitoring) ⁽⁴⁾
	Mainboard Temperatures	✓	✓	✓ ⁽⁸⁾	✓	0s (continuous monitoring) ⁽⁴⁾
	Mainboard Fans	✓	✓	✓ ⁽⁸⁾	✓	0s (continuous monitoring) ⁽⁴⁾
	USB ports	✓	✓	✓		time to plug the USB key to each port and detect it

MEMORY	Standard Test	✓	✓	✓	✓	1min (customizable)
	Multi-Process Torture Test	✓	✓	✓	✓	1min (customizable)
GRAPHIC CARD	GPU Clock Monitoring	✓	✓	✓	✓	0s (continuous monitoring) ⁽⁴⁾
	GPU Voltage Monitoring	✓	✓	✓ ⁽⁸⁾	✓	0s (continuous monitoring) ⁽⁴⁾
	GPU Temperature Monitoring	✓	✓	✓ ⁽⁸⁾	✓	0s (continuous monitoring) ⁽⁴⁾
	2D Local Video memory Test	✓	✓	✗	✓	1min
	2D all available memory Test	✓	✓	✗	✓	1min
	2D Lines and bitmaps test	✓	✓	✓	✓	1min
	2D EMC scrolling characters test	✓	✓	✓	✓	1min
	2D EMC reference test pattern test	✓	✓	✗	✓	1min
	3D Test	✓	✓	✓ ⁽³⁾	✓	1min
STORAGE	Disk Health Status	✓	✓	✓	✓	0 to 5s
	Disk SMART Attributes	✓	✓	✓		time for the operator to review the attributes
	Disk Short SMART Test	✓	✓	✓	✓	some minutes ⁽⁵⁾
	Disk Long SMART Test	✓	✓	✓	✓	10 min to several hours ⁽⁵⁾
	Disk Random Read Test	✓	✓	✓	✓	some seconds to several minutes ^{(5) (6)}
	Disk Linear Read Test	✓	✓	✓	✓	some seconds to several minutes ^{(5) (6)}
	Optical Drive Read Test	✓	✓	✓		time to insert the media and get it readable
NETWORK	Wired (LAN)	✓	✓	✓		<5s
	Wi-Fi (WLAN) ⁽⁹⁾	✓	✓	✓		<5s
	Bluetooth	soon	soon	soon		

AUDIO	Internal speaker	✓	✓	✓		~1s delay to hear sound played and validate test ⁽¹⁾
	Internal microphone	✓	✓	✓ If driver present		~6s delay to record & play sound ⁽¹⁾⁽²⁾
	Output Jack	✓	✓	✓		~1s once device plugged ⁽¹⁾
	Input jack	✓	✓	✓ If driver present		~6s once device plugged ⁽¹⁾⁽²⁾
	Combo Jack	✓	✓	✓ If driver present		~6s once device plugged ⁽¹⁾⁽²⁾
SCREEN	Dead pixel	✓	✓	✓		3s delay customizable
	Calibration	✓	✓	✓		3s delay customizable
	Touchscreen	✓	✓	✓		<2s
	Display ports ⁽¹⁰⁾	✓	✓	✓		delay to plug a monitor to each port and detect it
USER INPUTS	Keyboard	✓	✓	✓		~5s depending on keyboard layout
	Keyboard Status LED	✓	✓	✓		<5s
	Mouse	✓	✓	✓		<5s
	Touchpad	✓	✓	✓		<5s
	TrackPoint	✓	✓	✓		<5s
BATTERY	Battery Health	✓	✓	✓	✓	<10s
	Battery Charging Test	✓	✓	✓		<15s
	Battery Drain Test	Soon	Soon	Soon		Can take several hours. Depends on current battery charge level
SENSORS	Accelerometer	✓	✓	Under investigation		<2s
	Lid Sensor	✓	✓	✓		~5s (customizable)
OTHER	Card Reader	✓	✓	✓		time to insert the media and get it readable
	Webcam	✓	✓	✓ If driver present		<10s

	Suspend mode	✓	✓	✗		
--	--------------	---	---	---	--	--

- (1) A question is asked once the playback ends but you have the possibility to validate the test as soon as the operator hears the sound.
- (2) We currently record during 5s but we will make this delay customizable in the next release.
- (3) This test is a functional test and cannot be used for benchmark purpose in WinPE environment since it might not include optimized manufacturer drivers but default graphic drivers.
- (4) Those values are monitored in real time during the whole test session and minimum, average and maximum values are saved. You can use them in conjunction with a stress test like the maximum heat test
- (5) The test duration differs depending if you test a SSD or a mechanical HDD, and depends on the disk size.
- (6) The number of passes, the number of blocks and the size of the blocks are customizable
- (7) Automatic tests are executed in parallel when possible (2 tests accessing the same device cannot be run simultaneously) either at the beginning or at the end of the test session
- (8) Monitoring depends on driver available in WinPE
- (9) Requires a WI-FI access point dedicated to SDS with lowest security possible (OPEN)
- (10) HDMI, DVI, DP, VGA

Tests execution

When the tests are launched, you will see the interface below with the 3 areas:

- the left panel **A** is a scrollable list of the tests to execute with their current status in front of each one (pending/running/passed/failed/skipped)
- the middle area **B** contains the instructions for the manual test which is currently running and the action buttons
- the right panel **C** is dedicated to real time monitoring: temperature, voltage, fan speed of CPU, GPU, mainboard, HDD/SSD

The screenshot displays the 'Hardware Diagnostics' application window. The interface is divided into three main sections:

- Left Panel (A):** A scrollable list of hardware components with their status. Components include Internal Speaker, Internal Microphone, Output Jack, Input Jack, Combo Jack, Mouse (marked with an exclamation mark), Touchpad, Touchscreen, Webcam, and Dead Pixels Test (selected).
- Middle Area (B):** The 'Dead Pixels Test' screen. It features a monitor icon, the title 'Dead Pixels Test', and instructions: 'We will display sequentially the 3 primary colors patterns. Please inspect the screen to identify missing/dead pixels.' Below the text is an illustration of a laptop with a red screen. At the bottom are three buttons: 'Start Test', 'Skip', and 'Abort Tests'.
- Right Panel (C):** Real-time monitoring data for the system. It shows:
 - CPU:** AMD A4-5300. Temp. Package: Min 49.88°C, Max 80.75°C.
 - Fan:** Min 1265.82 tr/min, Max 1294.22 tr/min, Min 1045.30 tr/min, Max 1061.57 tr/min.
 - GPU:** AMD Radeon HD 7480D. Temp. Min 0.00°C, Max 18.00°C.
 - Fan:** Min N/A tr/min, Max N/A tr/min.

Automatic Tests Execution

Automatic tests are run simultaneously as far as far possible in order to decrease the diagnostic session delay. As a consequence, they will not have a common UI, or even no UI at all while manual tests are running.

Anyway, you can follow their progression through the animation in front of each one on the left panel.

In some circumstances, we cannot run a test, or conclude on its result, or detect inconsistencies in the information returned by the device. For example, a battery returns a designed charge null or a current full charge equal to its designed capacity after several years. Another example is that we don't detect the component to test: it can be either missing, defective, or not supported and so we cannot conclude (you can now specify if a component to test is mandatory on a laptop or an All-In-One or other device, and so you can specify a different result if you want).

- In such cases, you can now specify if you want to set automatically the test to succeeded, failed or skipped and we will record in the SQL database the reason why we not able to run/interpret the test.
- Else, you can let the operator decide (and you can specify which possible results you allow per test) and, optionally, enter a comment which will be recorded in the SQL database (and shown on demand in reports and Dashboard), as well as the original reason why we not able to run/interpret the test:

Wi-Fi (WLAN) - Wi-Fi access point unreachable

SoftThinks - External

Wi-Fi access point not found. Please ensure that your dedicated access point is powered and running without issue, and verify its settings in SDSTestNetwork.ini (since this access point doesn't require to be connected to internet or to your network, we recommend you to use minimum security parameters).

Comment (optional):

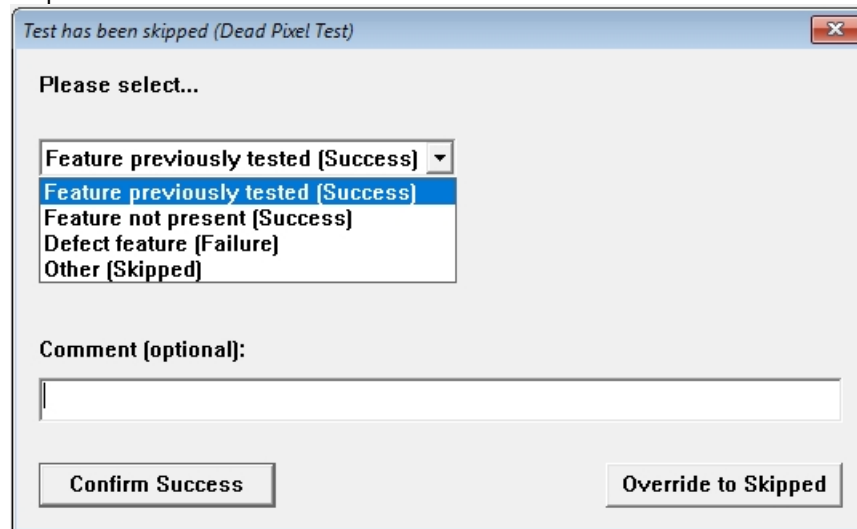
Confirm Failure Override to Success Override to Skipped

Manual Test Execution

For each manual test, you will be guided through detailed step by step instructions and explicit animations.

In order to decrease the test duration, buttons and keystrokes are available to set a test as succeeded / failed, skip it, abort it or bypass timeouts when applicable. For example, for the dead pixel test, you will be able to stop and failed the dead pixel test as soon as you see one, display the next pattern by pressing a key without waiting for the customizable delay. For the other full screen test which is the touchscreen one, if the touchscreen is not responding the user will also be able to fail it without waiting for the customizable timeout delay.

Optionally, you can ask the operator to indicate the reason why he skips a test for trackability purpose. If so, he will have to choose one of the reasons you will have predefined and this reason will be saved in the logs and in the database so that you can show it on reports and wipe certificates:



The dialog box has a title bar with the text "Test has been skipped (Dead Pixel Test)" and a close button. The main content area is titled "Please select..." and contains a dropdown menu. The dropdown menu is open, showing the following options: "Feature previously tested [Success]" (highlighted in blue), "Feature not present [Success]", "Defect feature [Failure]", and "Other [Skipped]". Below the dropdown menu is a text input field labeled "Comment (optional):". At the bottom of the dialog box, there are two buttons: "Confirm Success" and "Override to Skipped".

For each reason, a customizable result is associated by default and appears between parenthesis and, as for automatic tests, you can allow the operator to change the result and add optionally a comment which will be recorded in the SQL database (and shown on demand in reports and Dashboard).

Tests description and customization

CPU tests

Different types of load

To ensure various components within the CPU are loaded, many different types of CPU opcodes (operation types) are performed. The CPU test types are selectable by the user. The types of operation are listed in the help file (reproduced here):

The CPU test exercises and verifies a wide range of CPU instructions, at user specified loads. The user selectable sub-categories of the CPU test are:

- General purpose instructions (x86)
- Floating Point Unit (FPU) instructions (x87)
- CPU extension instructions (x86 extensions). The specific extension instructions may be selected: MMX, 3DNow!, SSE, SSE2, SSE3, SSE4.1, SSE4.2 and SSE4a.
- Prime number test
- Maximum heat test

The numbers displayed in the test window for this test represent how many millions of CPU operations have been performed and verified. Each different math's test is run for half a second. After all tests have been run the cycle count is incremented. The duty cycle and the CPU speed determine how many operations can be processed during the half second period. Note however that if only the Maximum heat test is selected, then the duty cycle is set to 100% and a single cycle is defined to be 1 trillion CPU operations.

By default, a CPU test is run on each CPU core. The number of CPU tests running a particular sub-category is shown in the test window in the "Threads" column.

The sub-categories of this test are described below.

General purpose instructions

This test exercises and verifies correct operation of CPU instructions from the following groups:

- Integer mathematics (e.g. add, subtract, multiply and divide)
- Data transfer instructions (e.g. pushing/popping data to/from the stack)
- Bitwise logical instructions (e.g. bitwise and/or/xor)
- Shift and rotate instructions (e.g. shift data left x number of bits)
- Logical instructions (e.g. equals)
- Control transfer instructions (e.g. jump on x greater than y)
- String instructions (eg. copy a text string)

Known and random data sets are used to exercise and verify correct operation. On 32-bit systems, 32-bit data sets are used. On 64-bit systems, 64-bit data sets are used. The random numbers are generated regularly to provide a larger data set, as well as ensure that the CPU caches overflow and that this mechanism is tested.

Floating Point Unit (FPU) instructions

This test exercises and verifies correct operation of CPU instructions from the following groups:

- Floating Point math (e.g. add, subtract, multiply and divide)
- Transcendental's (e.g. sin, cos)
- Load constants (e.g. load Pi)

Known and random data sets are used to exercise and verify correct operation. On 32-bit systems, 32-bit floating point data sets are used. On 64-bit systems, 64-bit floating point data sets are used. The random numbers are generated regularly to provide a larger data set, as well as ensure that the CPU caches overflow and that this mechanism is tested.

Maximum Heat test

The maximum CPU Heat test is a vital tool to verify the reliability and stability of CPU and cooling systems with a maximized heat generation torture test. By default, we execute it during 1 minute but you can ask your Softthinks referent to increase its duration up to 15 minutes in order to detect missing or incorrectly fixed heatsinks for example.

Monitoring

We monitor the CPU voltages, temperatures, power consumption, clock speeds, and usage during the whole diagnostic phase and display the minimum and maximum values on the right panel:

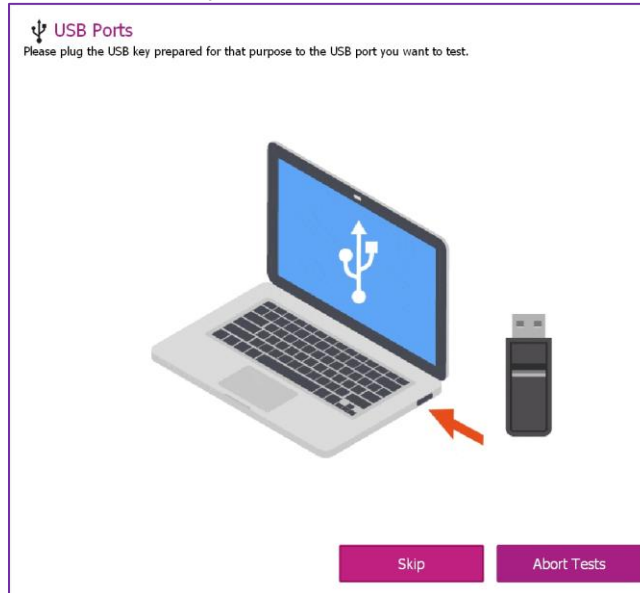
The screenshot displays the 'Diagnostic Kiosk' interface. On the left, a green checkmark icon is next to the text 'Combo Jack'. In the center, the text reads: 'Combo Jack_24 - Test skipped by the user.', 'Combo Jack_24 - Test skipped by the user.', and 'Combo Jack_24 - Skip reason: Feature previously tested'. On the right, a red-bordered box highlights the system monitoring section. This section includes a CPU icon, the text 'Intel Core i3 8100', a temperature icon, the text 'Temp.', and a list of temperature readings: 'Package Min 27.00°C Max 35.00°C', 'Cores (Max) Min 27.00°C Max 35.00°C', 'Core #0 Min 26.00°C Max 35.00°C', 'Core #1 Min 26.00°C Max 34.00°C', 'Core #2 Min 27.00°C Max 36.00°C', and 'Core #3 Min 26.00°C Max 34.00°C'. Below this, a fan icon is shown with the text 'Fan' and 'Min N/A tr/min Max N/A tr/min'. At the bottom right, a monitor icon is shown with the text 'N/A'. At the bottom center, there are two buttons: 'Run Other Test' and 'Exit'.

Mainboard tests

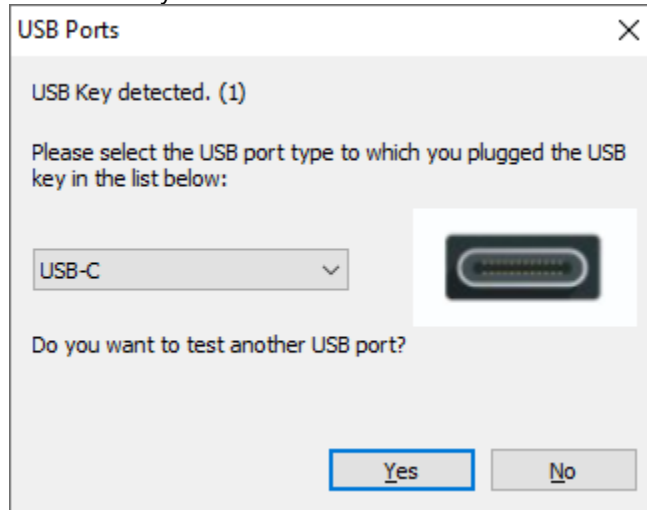
USB ports test

The USB ports test consist in detecting a USB key with a specific flag file which has to be plugged on each USB port. Please first unplug all USB devices connected except the USB to RJ45 adaptor if you booted the device through this way. Each USB port tested will appear as a unique test, meaning that if there are 4 USB ports and we didn't detect the USB key on one of them we will have 3 USB ports test succeeded and 1 USB port test failed.

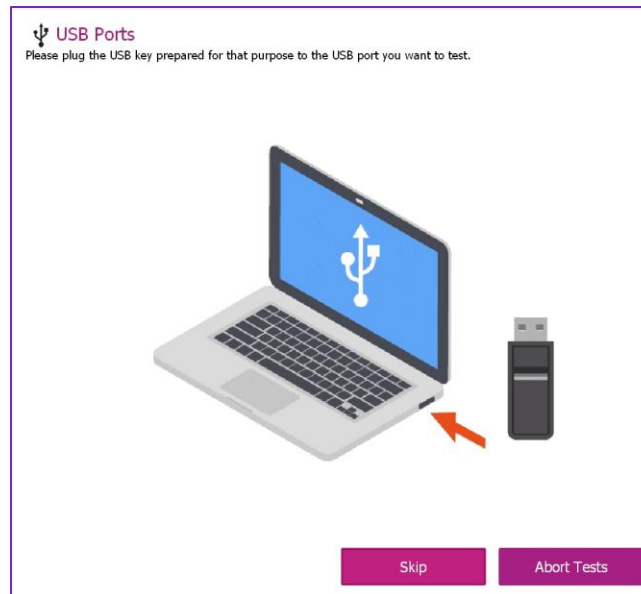
1. Plug the test USB key to one of the USB ports to test:



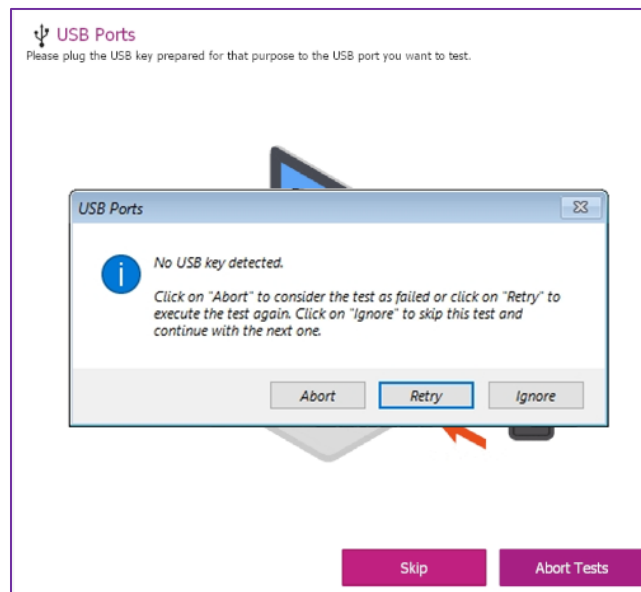
2. You are notified once the USB key is detected and asked to select the type of USB port (USB-C / USB-A 3.0 / USB-A) to which you plugged the USB key:



3. If you want to test another USB port, click on Yes and you will see again the screen asking you to plug the USB key to the USB port to test:



4. If the USB key is not detected after a predefined amount of time, you will be asked if you want to set this test as failed, retry or skip this test:



Monitoring

We monitor the mainboard voltages, temperatures and fans' speed during the whole diagnostic phase and display the minimum and maximum values.

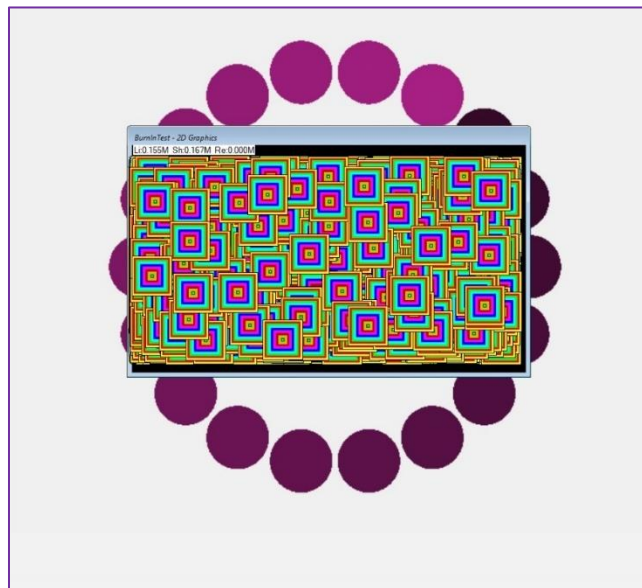
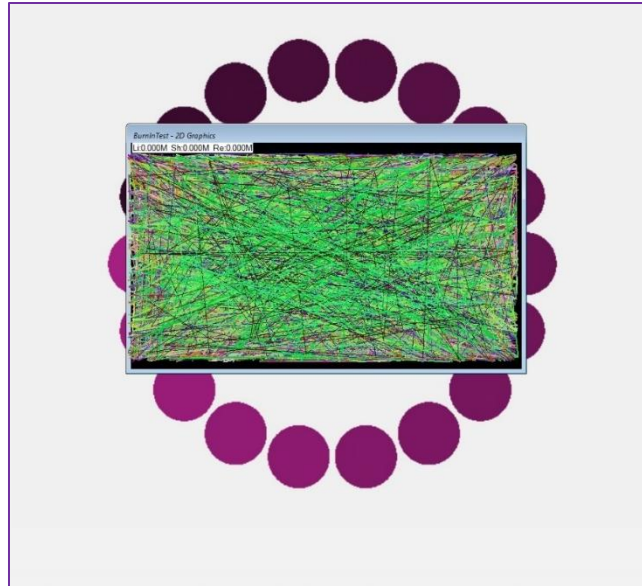
Memory tests

The memory tests are all totally automatic, without UI, and not customizable.

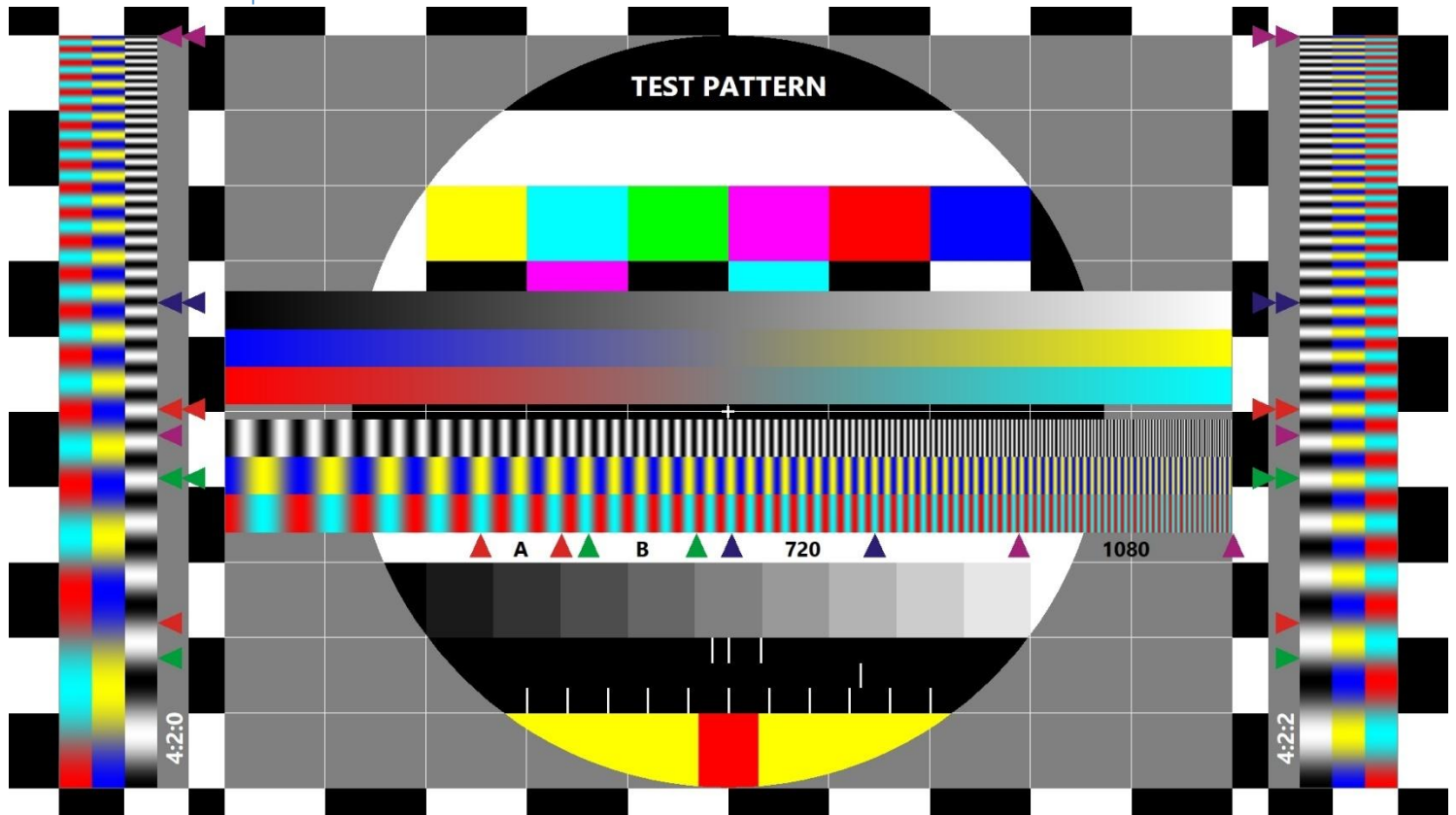
Graphic card tests

The graphic card tests are all automatic and will show BurnInTest UI.

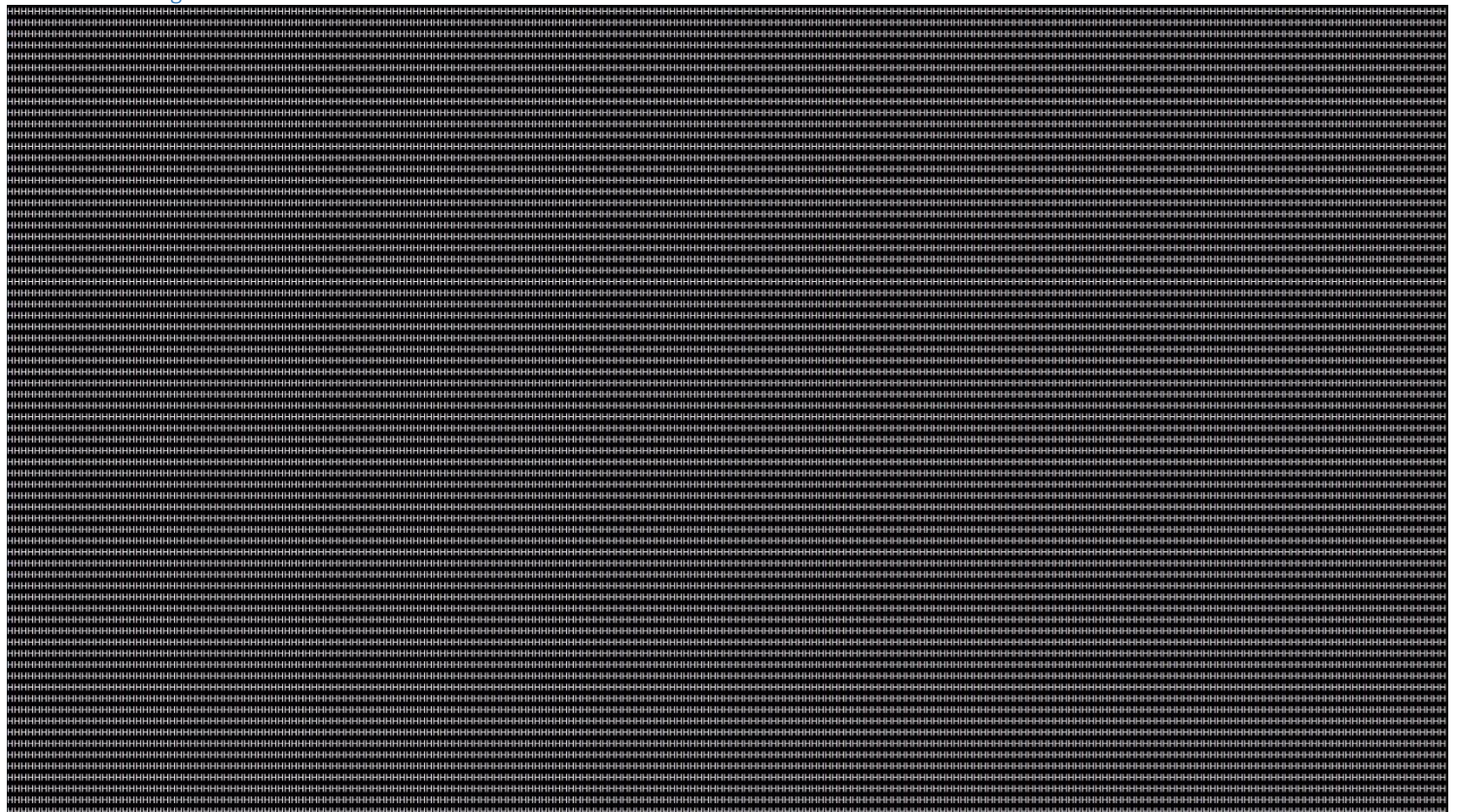
2D Lines and bitmaps



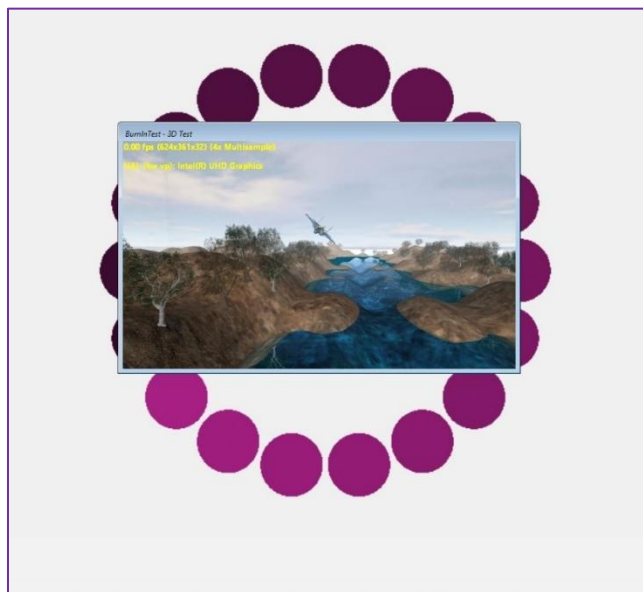
2D EMC reference test pattern



2D EMC scrolling characters



3D



Storage tests

If the device contains several disks, you can specify if you want to test all of them, only the system disk, or all disks except the system disk.

Disk Health status test

The Disk Health Status test is automatic and instantaneous since it will just query the Disk S.M.A.R.T. / Health status and pass the test as passed or failed depending on this value.

Disk SMART Attributes test

The Disk SMART Attributes test displays the SMART attributes of all disks detected. Once you will have reviewed them for each disk (you can select the disk through the dropdown list on the top **A**), you decide if the test is passed or failed, or eventually skip it:

Description	Attribute value	Worst value	Threshold value	Raw value
Critical warning	0			00000000
Temperature	30			0000012F
Host Write commands	235814803			0E0E3F93
Power on hours	805			00000325
Number of error information log entries	0			00000000
Available spare threshold	10			0000000A
Host Read commands	259246732			0F73CA8C
Critical Composite Temperature Time	0			00000000
Power cycles	2095			0000082F
Unsafe Shutdowns	104			00000068
Data units written	8319350784000			00F7EF9C
Percentage used	1			00000001
Available spare	100			00000054
Warning Composite Temperature Time	0			00000000
Media and Data integrity errors	0			00000000
Data units read	8319350784000			00F7EF9C
Controller busy time	881			00000371

You can record in the SQL DB the faulty SMART attributes by clicking on them (CTRL/SHIFT+ click for multi-selection) or selecting them through keyboard UP & DOWN keys (if you select several ones, they might be truncated in the SQL DB due to string length limitation).

Disk Short SMART Test

Perform a short SMART test during some minutes.

Not compliant with Apple devices (you should use Random or Linear test for Apple devices).

Disk Long SMART Test

Perform a long SMART test during 10 min to several hours, depending if you test a SSD or a mechanical HDD, and depending on the disk size.

Not compliant with Apple devices (you should use Random or Linear test for Apple devices).

Disk Random Read Test

Perform a random read test during some seconds for a SSD or several minutes for a mechanical HDD. You can specify the size of in MB of the sectors to read and the number of loops through the script.

Disk Linear Read Test

Perform a linear read test during some seconds for a SSD or several minutes for a mechanical HDD. You can specify which sectors' range you want to test through the script.

Optical drive read test

Check if we can read data from the optical media inserted (the media has to be readable, not RAW, neither damaged)

Network tests

Wired network (LAN) test

This test is automatic and doesn't require any user intervention or customization.

Wi-Fi (WLAN) test

This test is automatic, without any user intervention, but requires a dedicated Wi-Fi access point (802.11n minimum) which doesn't need to be connected to any network, neither internet. Since the access point is dedicated to this usage and not connected to any network you don't need any protection and configure it as open without authentication and encryption. The Wi-Fi test will check if it detects this access point and can connect to it.

So, in order to use the Wi-Fi test, you need first to enter the information required to connect to the access point in SDSTestNetwork.ini:

```
[Network]
SSID=<your access point SSID>
AUTH=<authentication method (open/WEP/WPA/WPA2PSK...)>
ENC=<encryption method (AES/TPIK...) >
KEY=<key>
```

You can also ask to test the 5GHz sub-network when supported by the Wi-Fi card by adding the section below:

```
[Network5G]
SSID=<Wi-Fi 5GHz SSID>
AUTH=<Wi-Fi 5GHz authentication method (WPA2PSK...)>
ENC=<Wi-Fi 5GHz encryption method (AES...) >
KEY=<Wi-Fi 5GHz key>
```

Audio tests

For all audio tests, please ensure that the audio devices are not on mute.

When you are using an external microphone / speaker / headset, please ensure first that it is working correctly.

You can adjust, from 0 (%) to 100 (%), the playback volume and recording volume through VolumeLevel and MicLevel values in SDSTestAudio.ini. You can also reduce the recording duration through RecordingTime value which is set to 5 (s) by default.

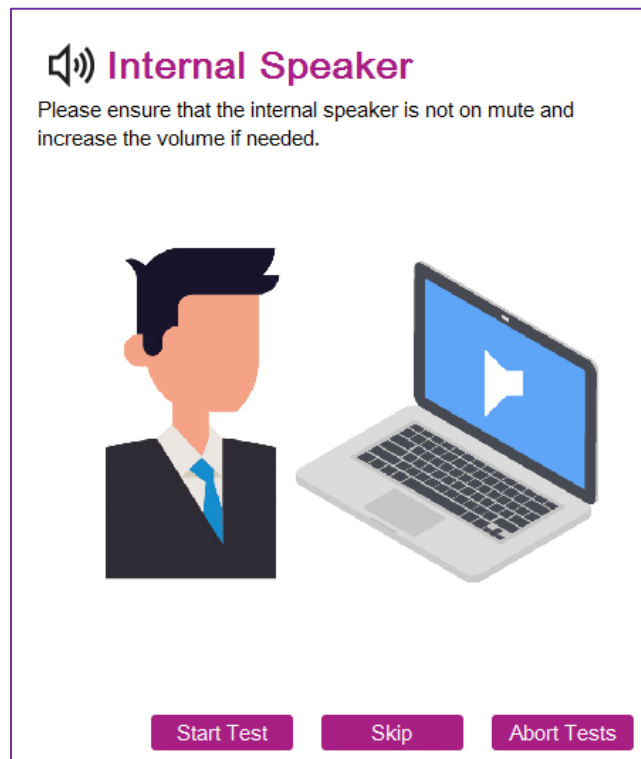
Internal speaker

The internal speaker test consists in playing a sound (you can use your own wave file, putting its path in "SoundFile" setting in the section [General] of SDSTestAudio.ini) and verify that you heard it.

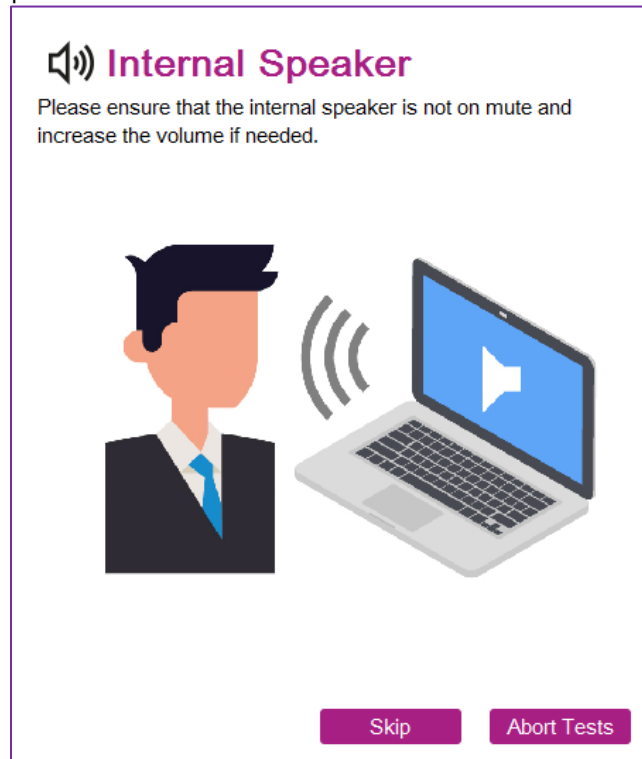
You have the possibility to test the left and right speakers independently (when 2 speakers detected), instead of together, by setting the value SeparateChannels to 1 in the section [General] of SDSTestAudio.ini).

1 Internal speaker or 2 internal speakers tested simultaneously

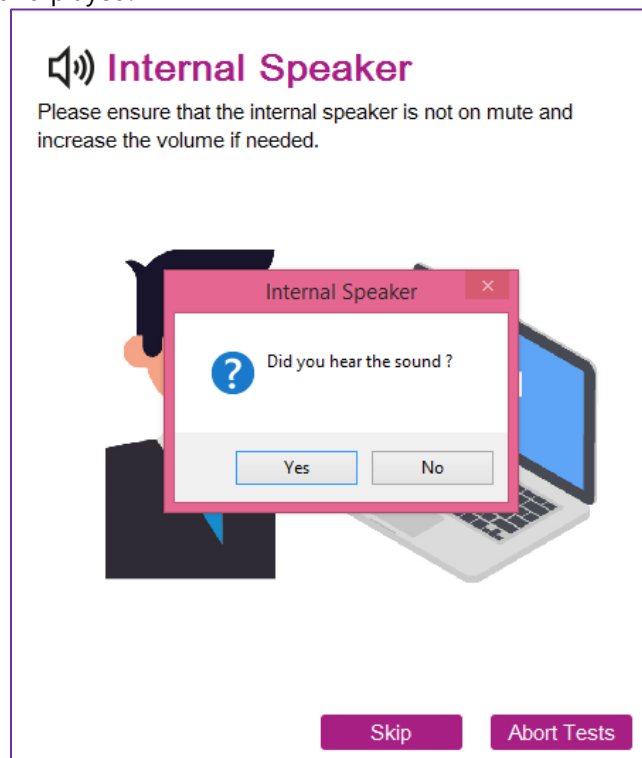
1. Click on "Start Test" button



2. Listen to your internal speaker

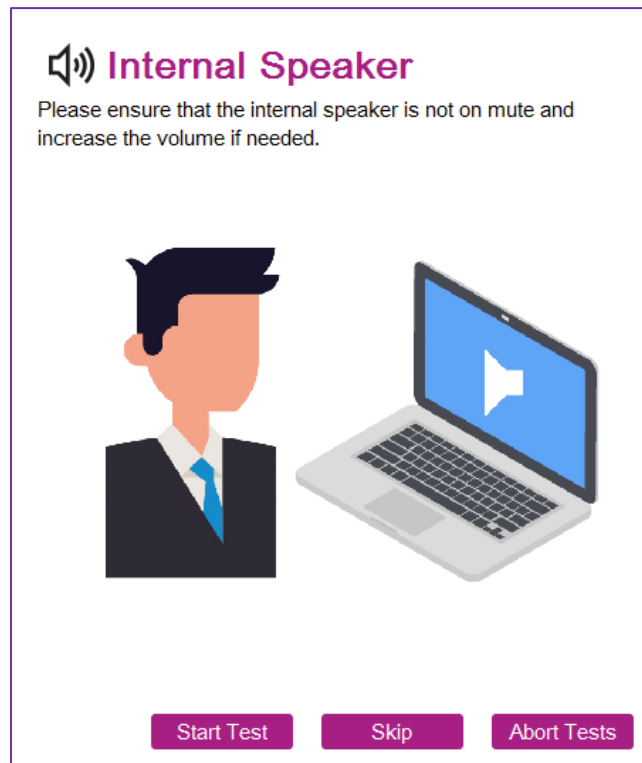


3. Press the ENTER key to validate the test as soon as you hear the sound, or click on 'Yes' or 'No' when you will be prompted once the sound played:

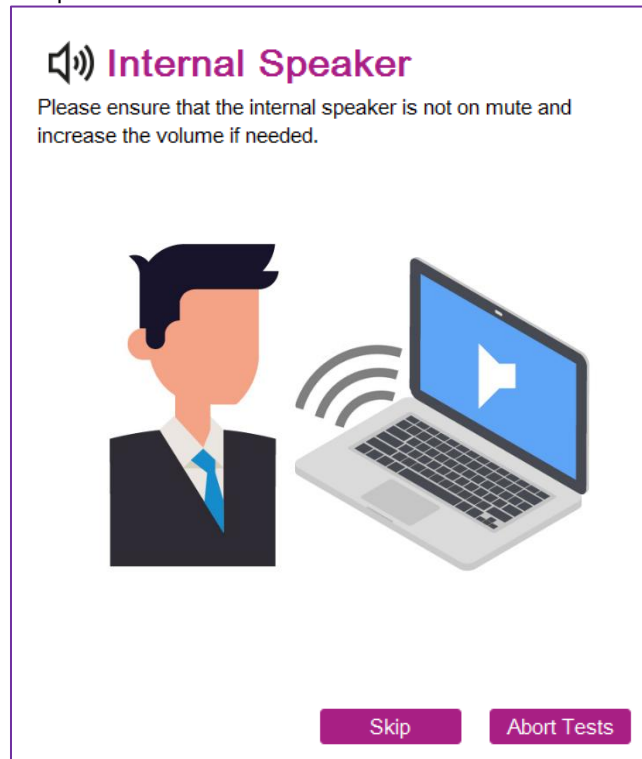


2 Internal speakers tested independently

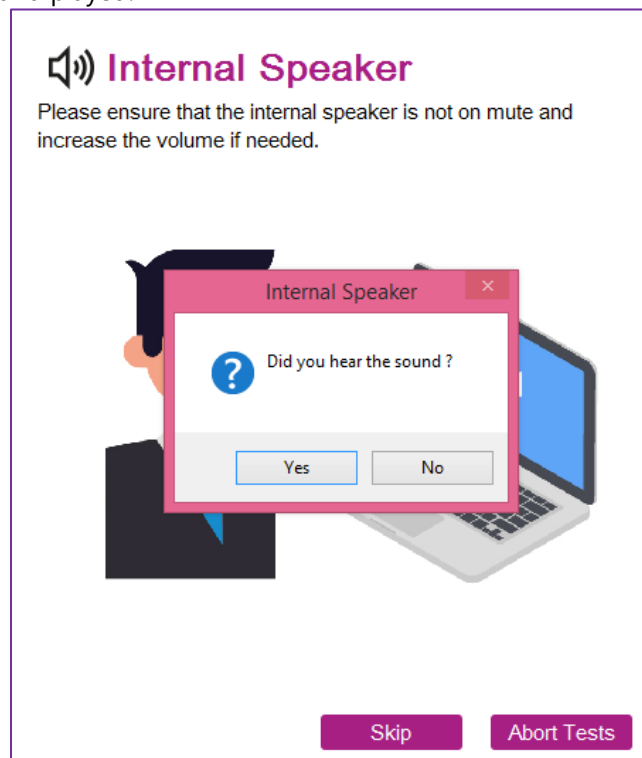
4. Click on "Start Test" button



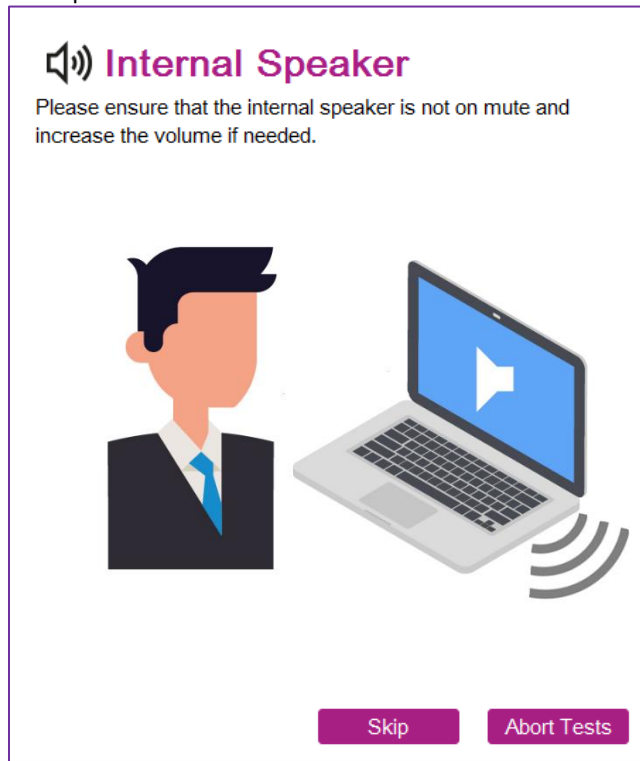
5. Listen to your left internal speaker



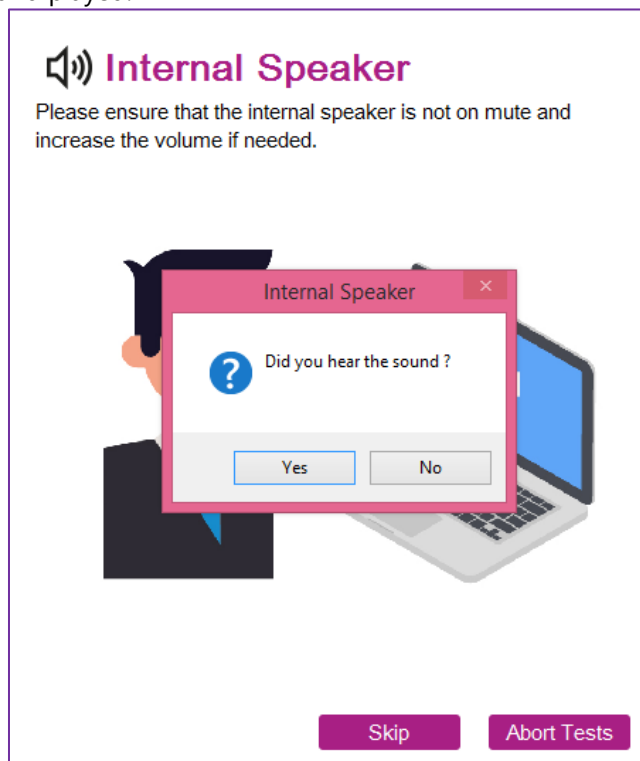
6. Press the ENTER key to validate the test as soon as you hear the sound, or click on 'Yes' or 'No' when you will be prompted once the sound played:



7. Listen to your right internal speaker



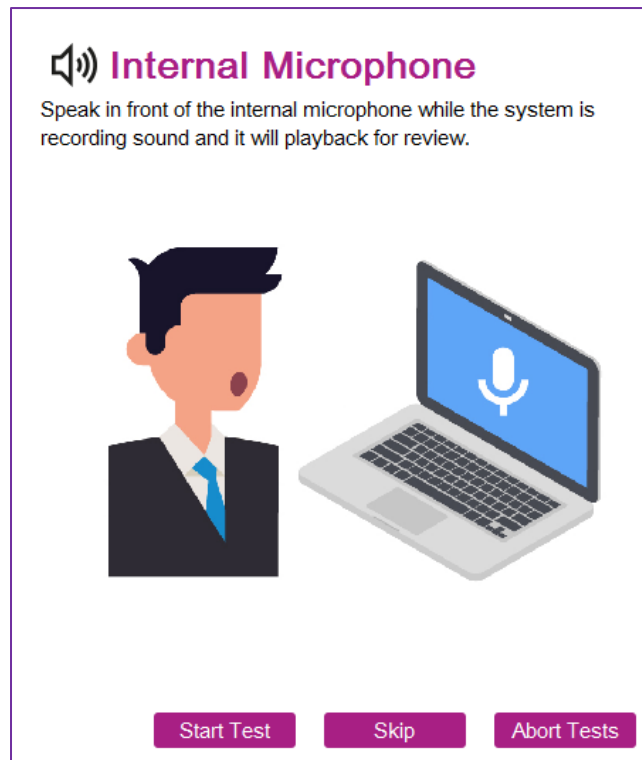
8. Press the ENTER key to validate the test as soon as you hear the sound, or click on 'Yes' or 'No' when you will be prompted once the sound played:



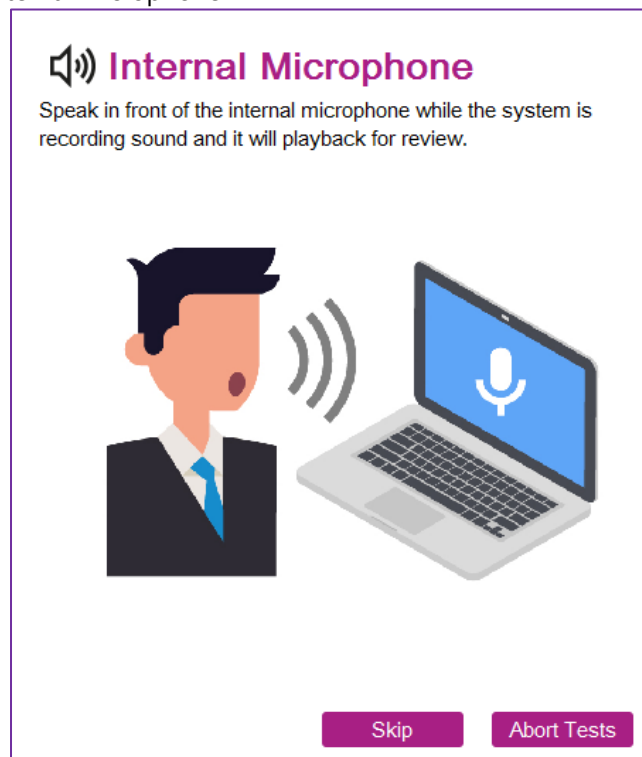
Internal microphone

To test the internal microphone, you will be asked to speak to this microphone and then we will then play what has been recorded and ask you if you heard correctly what you said previously.

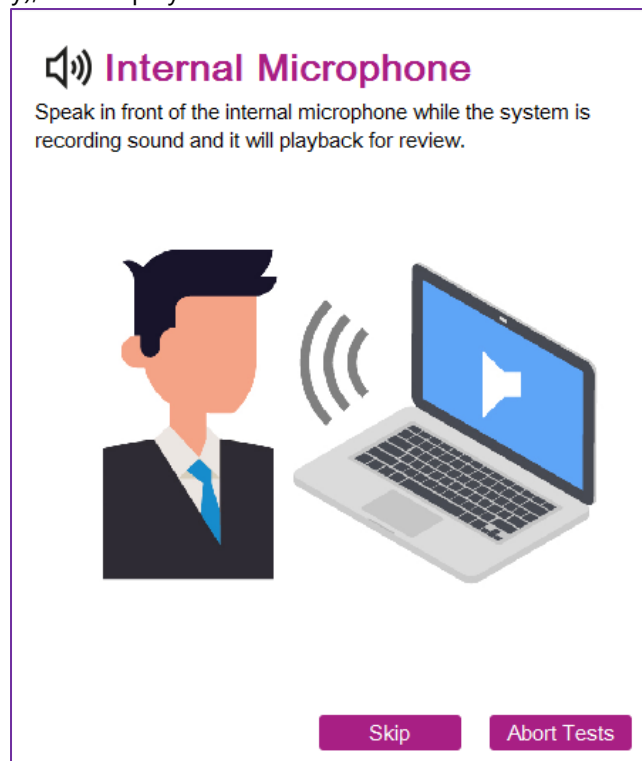
1. Click on "Start Test" button



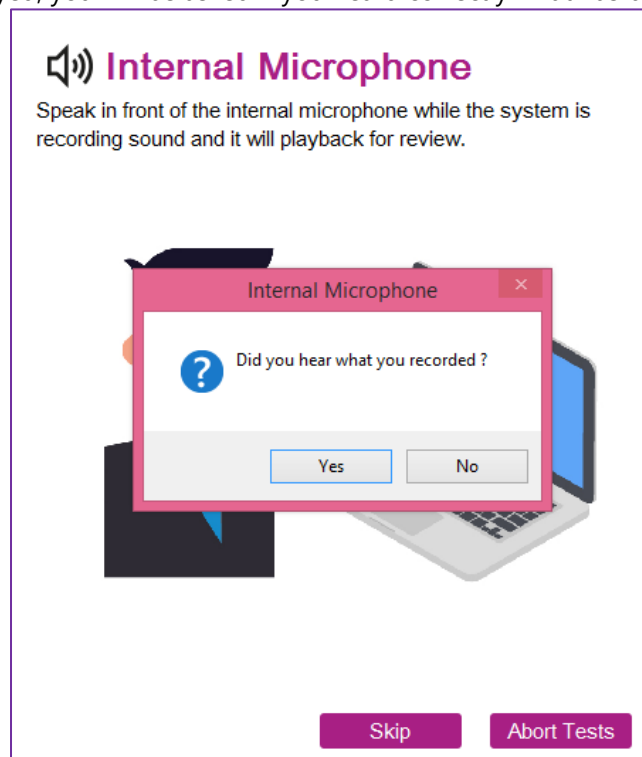
2. Speak in front of the internal microphone



- Once the recording phase complete (you can customize the recording duration, which is 5s by default, and stops it by pressing ENTER key), we will play back what has been recorded



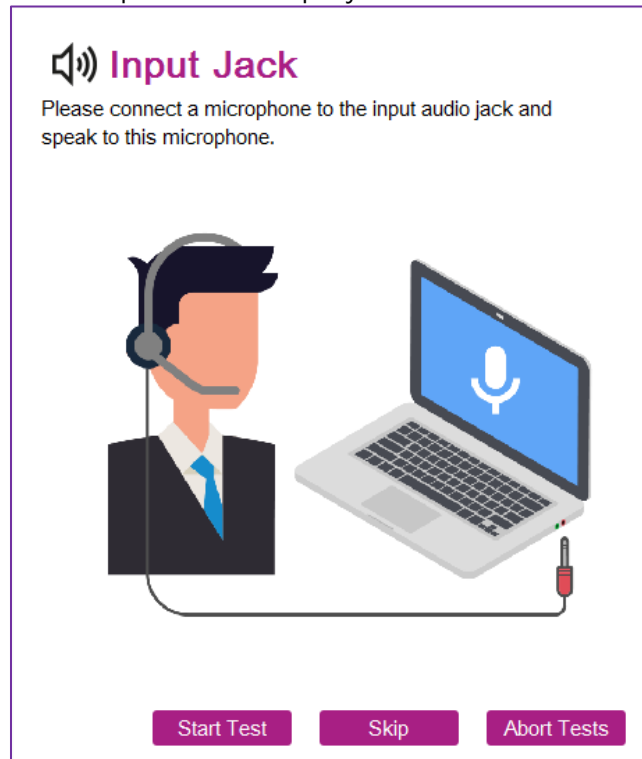
- You can press the ENTER key to validate the test as soon as you hear the sound
- Once the wave file played, you will be asked if you heard correctly what has been played



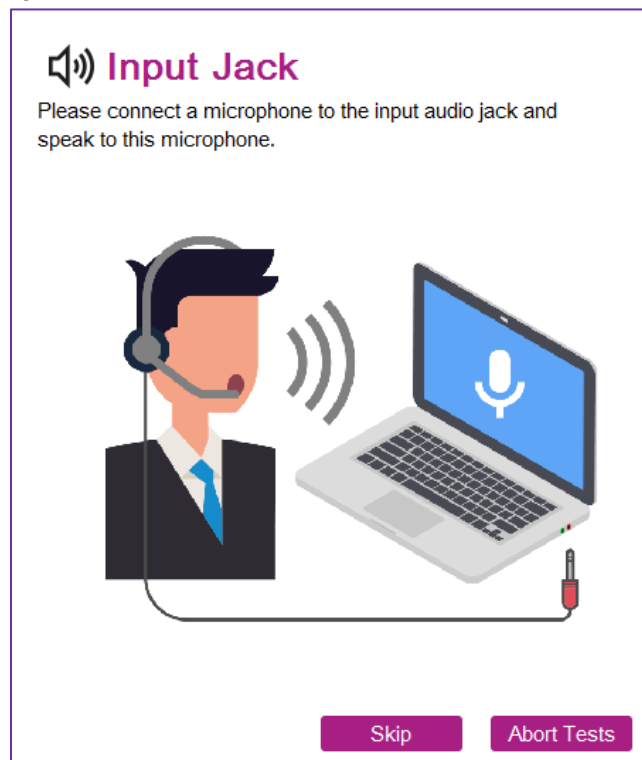
Input jack test

To test the input jack, you will be asked to plug an external microphone into this jack and speak to this microphone. We will then play what has been recorded and ask you if you heard correctly what you said previously.

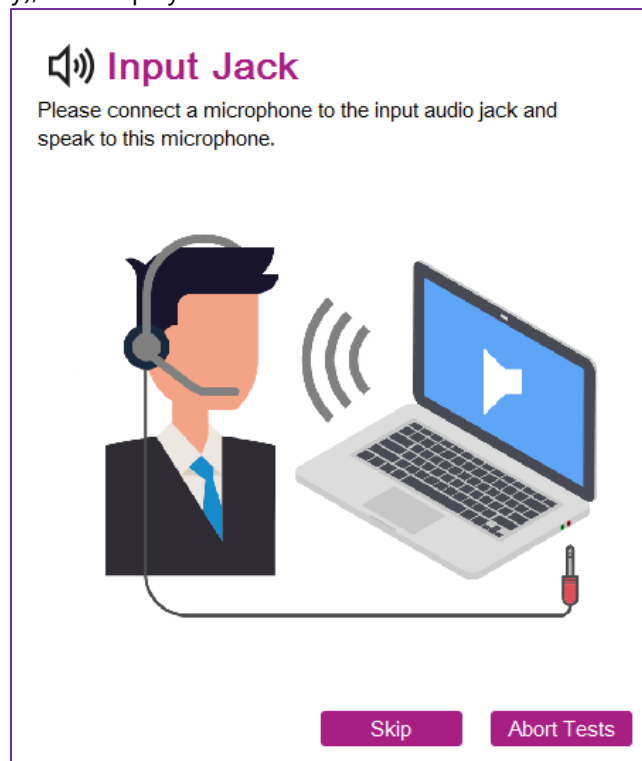
1. Plug a fully tested external microphone to the input jack and click on "Start Test" button



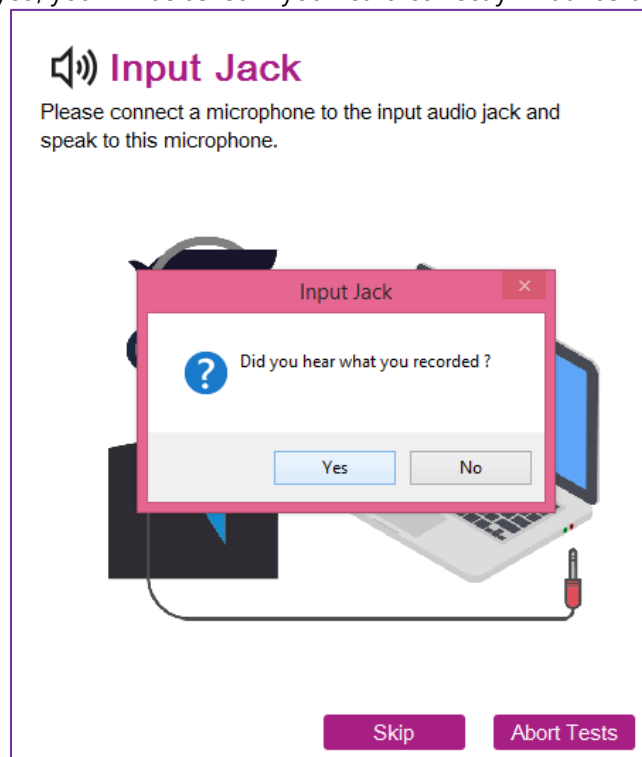
2. Speak to the microphone



- Once the recording phase complete (you can customize the recording duration, which is 5s by default, and stops it by pressing ENTER key), we will play back what has been recorded



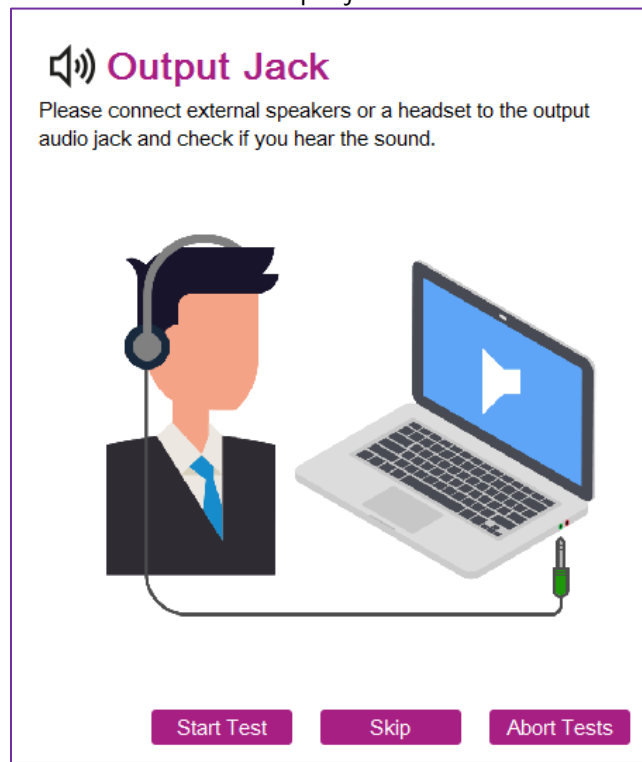
- You can press the ENTER key to validate the test as soon as you hear the sound
- Once the wave file played, you will be asked if you heard correctly what has been played



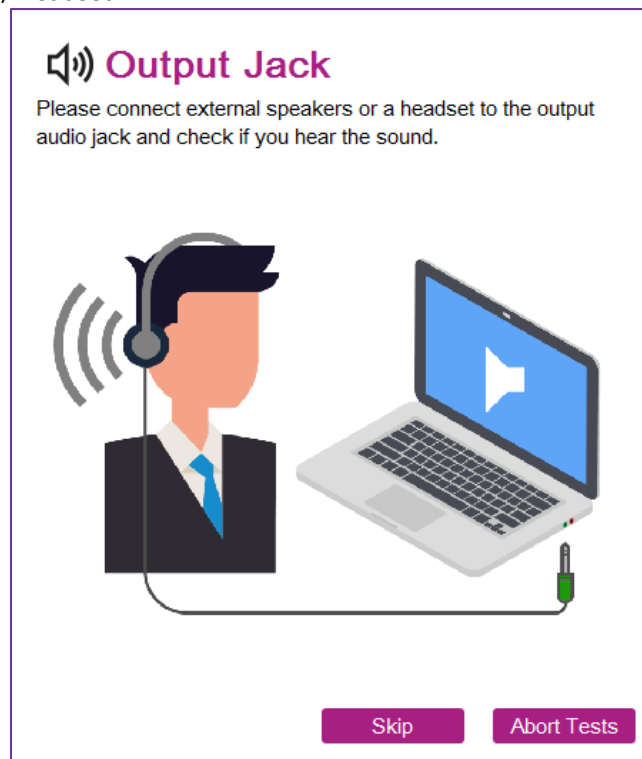
Output jack test

The output jack test consists in playing a sound to a speaker plugged to the output jack.

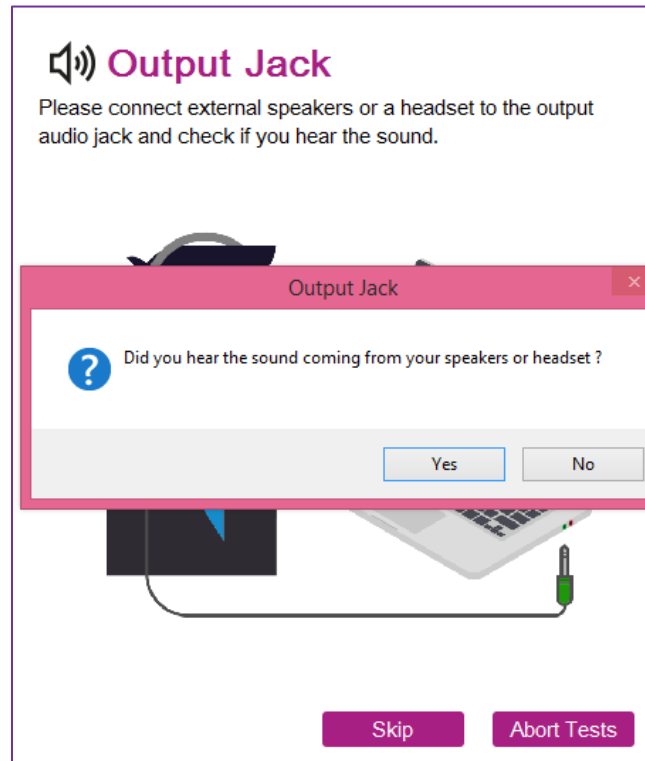
1. Plug a fully tested speaker or headset to the output jack



2. Listen to your speaker / headset



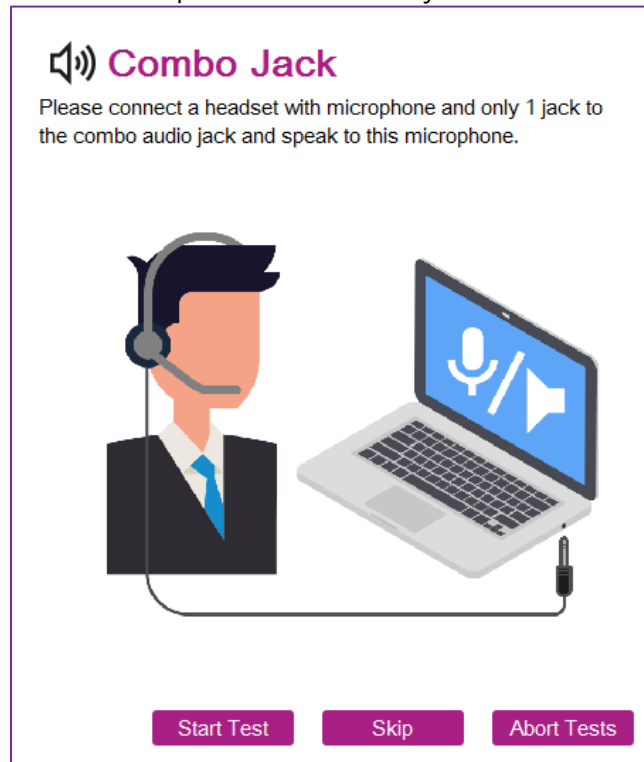
3. Indicate if you heard the sound



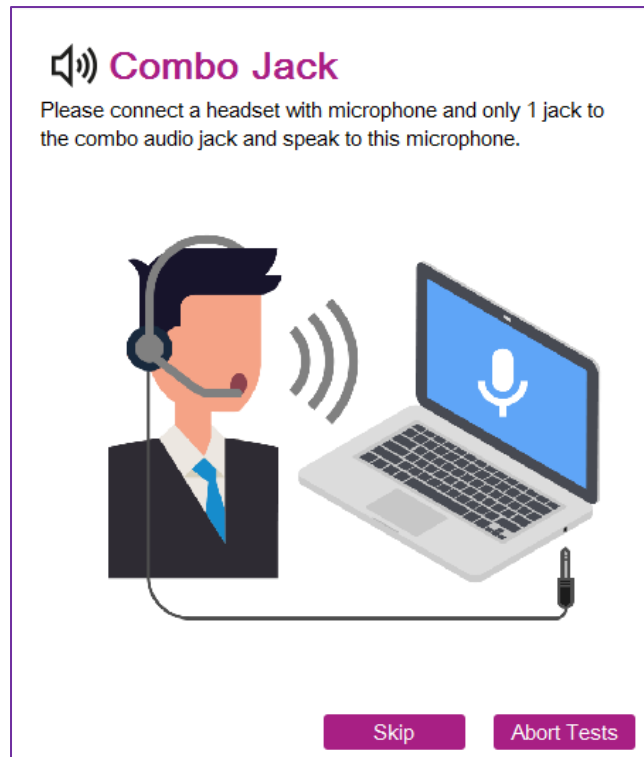
Combo jack test

The combo jack test ensure that the combo jack allows both input and output transfers by recording a sound and playing it.

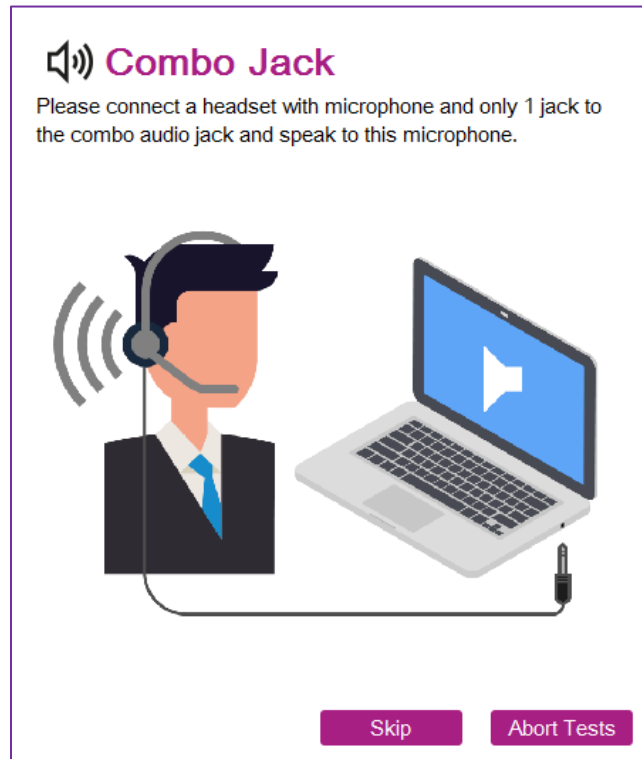
1. Plug a fully tested headset with microphone to the combo jack and click on "Start Test" button



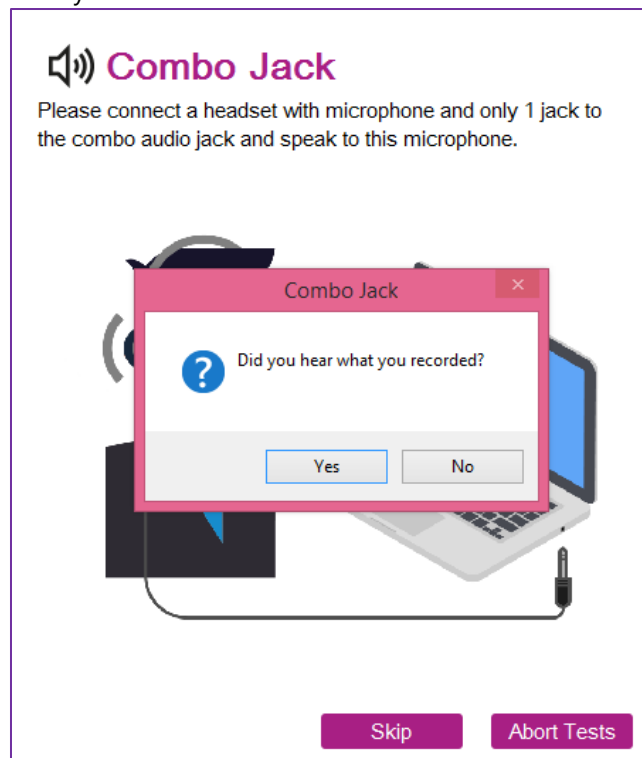
2. Speak to the microphone



3. Listen to what we recorded



4. Confirm if you heard correctly what was recorded



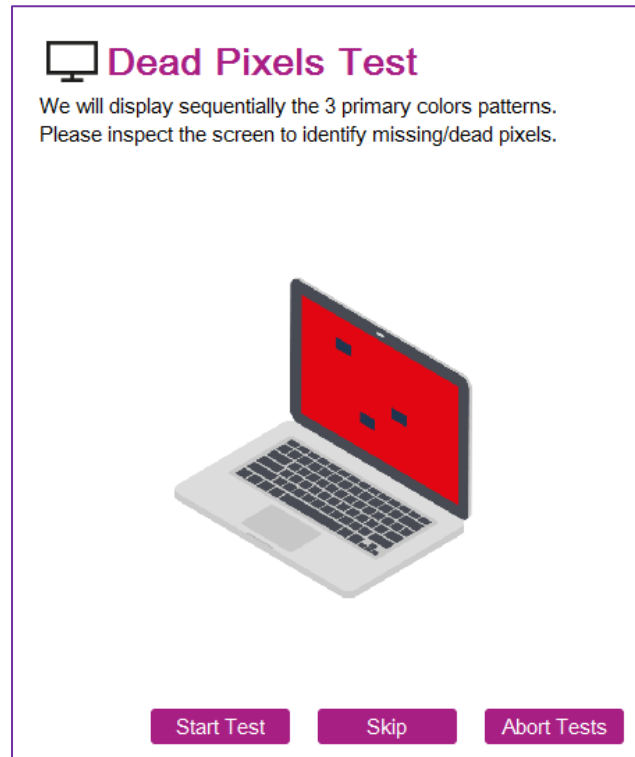
Screen tests

Dead pixel test

The dead pixel test displays sequentially color patterns in full screen to detect dead pixels. The operator can switch the color patterns manually by pressing ENTER/ESC and you can also switch the color pattern automatically after a customizable delay ("DelayBetweenColors" value in seconds in SDSTestMire.ini)

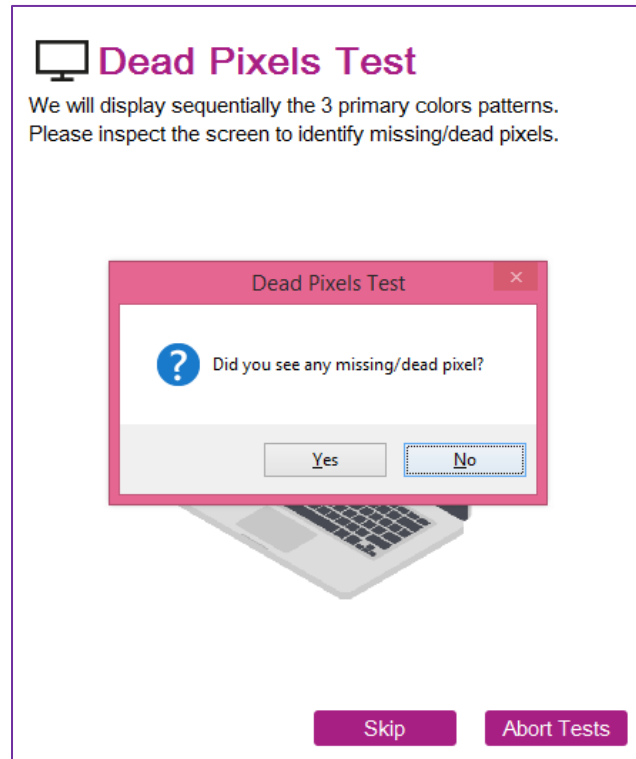
By default, the 3 primary colors (Red, Green, Blue) are displayed, and you can add up to 2 custom colors through "CustomColor" and "CustomColor2" values (CustomColor[2]=R,V,B) in SDSTestMire.ini: CustomColor=0,0,0 will display a 4th black color pattern and CustomColor2=255,255,255 will display a 5th white color pattern.

1. Click on "Start Test" button



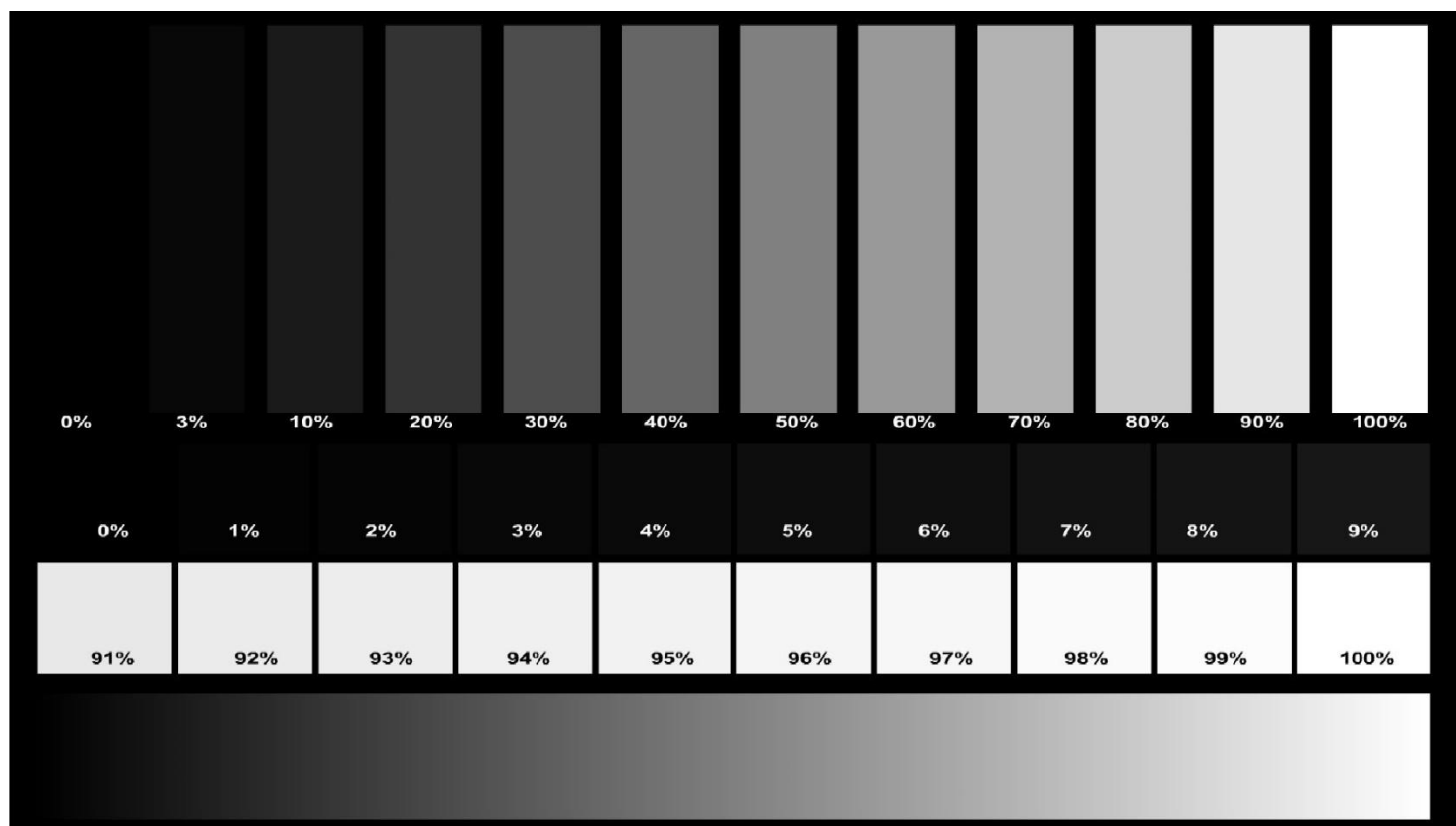
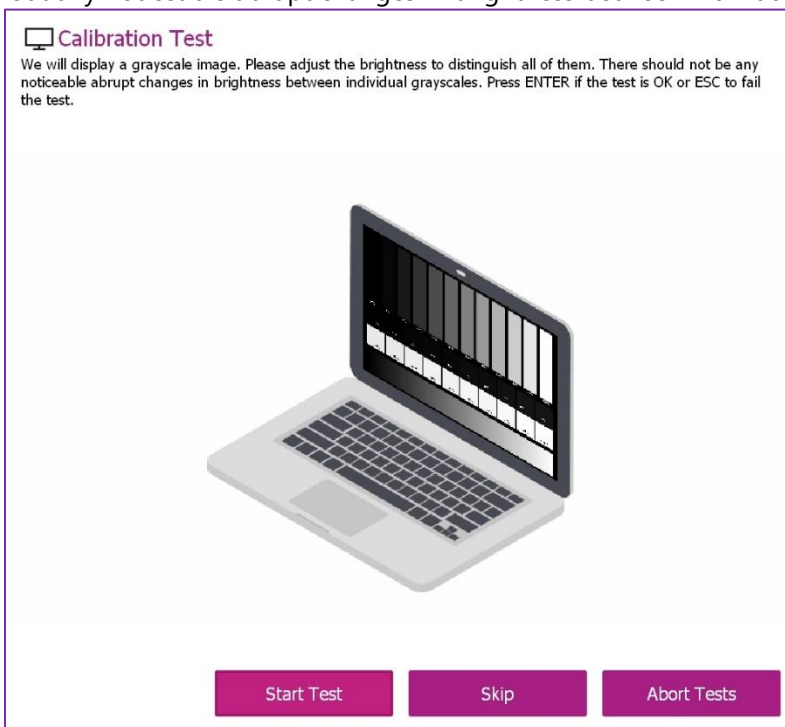
2. Search for any pixel of a different color than the first primary color (red) pattern displayed:
3. Press ENTER/ESC key to switch to next color pattern, or wait for the delay eventually specified
4. Search for any pixel of a different color than the second primary color (green) pattern displayed
5. Press ENTER/ESC key to switch to next color pattern, or wait for the delay eventually specified
6. Search for any pixel of a different color than the third primary color (blue) pattern displayed
7. Press ENTER/ESC key, or wait for the delay eventually specified
8. If a custom color has been specified, search for any pixel of a different color than this custom color pattern and then press ENTER/ESC key, or wait for the delay eventually specified

9. If another custom color has been specified, search for any pixel of a different color than this another custom color pattern and then press ENTER/ESC key, or wait for the delay eventually specified
10. Once all color patterns will have been displayed can respond to the question asking you if you noticed any dead pixel



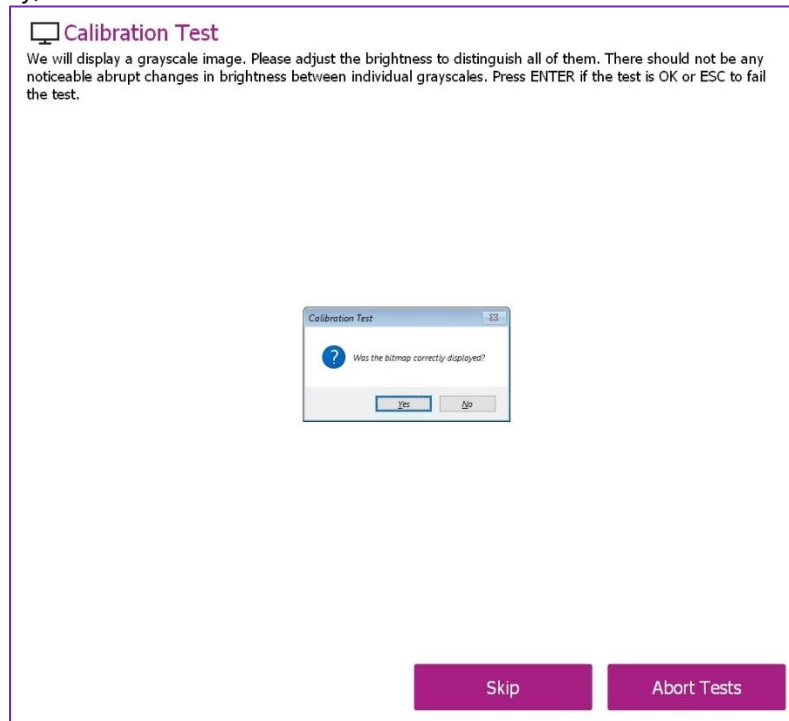
Calibration test

The calibration test will display on the screen a grayscale image. You will need to adjust the brightness and contrast until you distinguish all grey levels without any noticeable abrupt changes in brightness between individual grayscales.



If you distinguish all grey levels without any noticeable abrupt changes in brightness between individual grayscales, press ENTER key to pass the test. Else press the ESC key.

Instead of using the keyboard keys, you can respond to the question which will be asked after a customizable amount of time ("Timeout" value in SDSTestMire.ini before asking the user if he considers the test as passed or failed, or set it to 0 to wait until he presses ENTER/ESC key):



Touchscreen test

For screens which are touch capable, you can test this capability with this dedicated test. Else, you can skip this test and select "Feature not present" reason if asked for.

1. Click with your finger on 1 "click here!" button

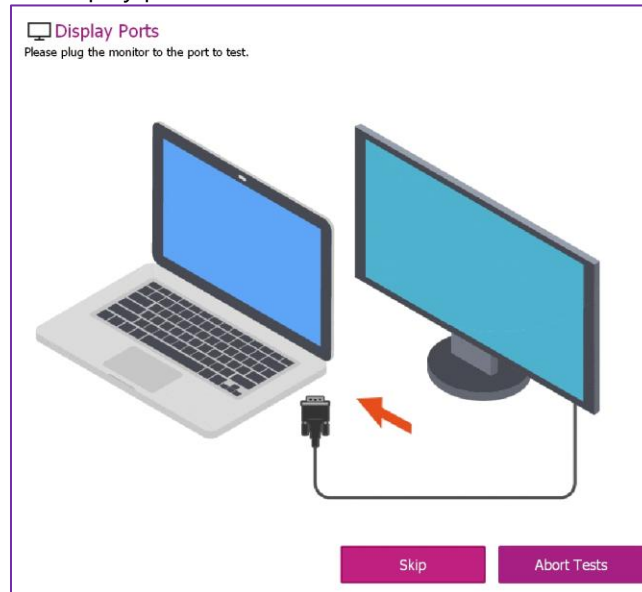


2. Click with your finger on another "click here!" button
3. Click with your finger on remaining "click here!" button

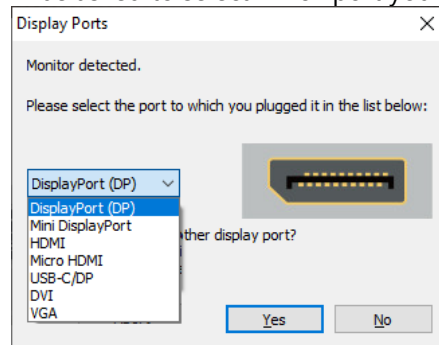
Display ports test

In order to test the display ports, you will be asked to connect an external monitor to each display port to verify if you get the result expected on the monitor. This monitor should have been fully tested through all the connection ports it provides (ideally HDMI + Display Port + USB-C + DVI + VGA) and plugged to AC power. Each display port tested will be recorded unitary on the SQL database. A boot image including the dedicated graphic card drivers and monitor service is required.

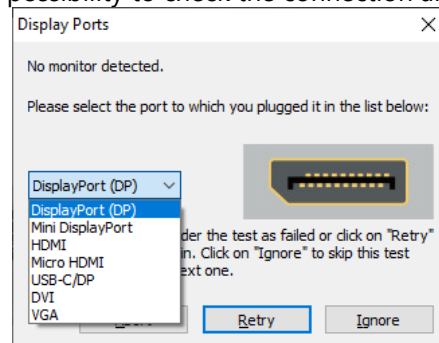
1. Plug the monitor to the 1st display port to test



2. a) If the port is functional, you will be asked to select which port you used:



- b) Else, after a timeout, you will be notified that we didn't detect the monitor. You will be asked also to select the port you used and will have the possibility to check the connection and retry or set the test as failed.



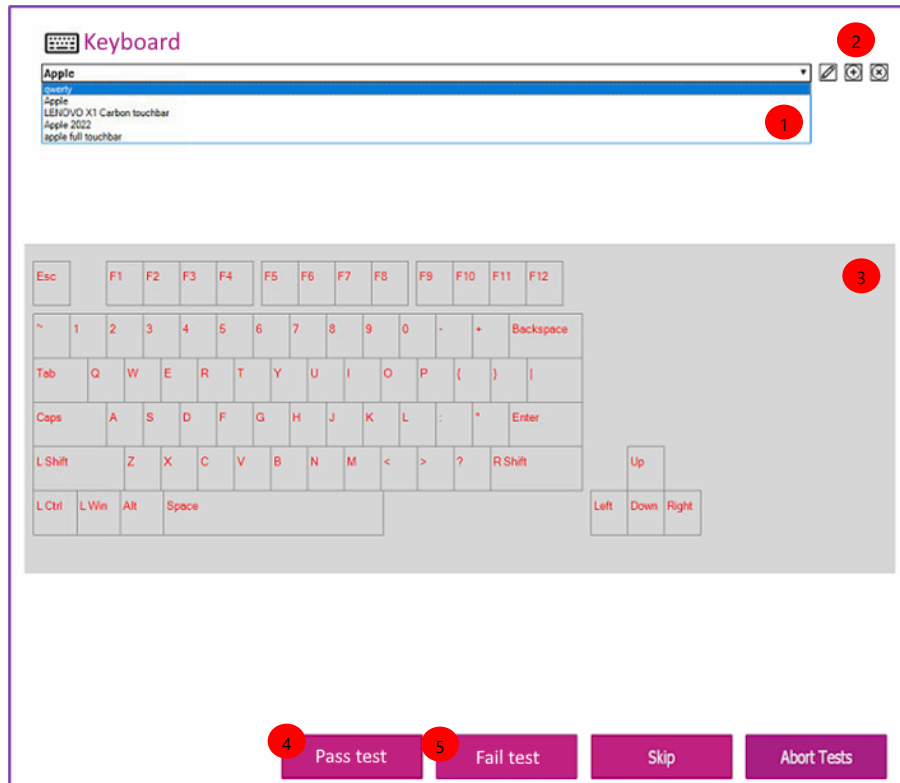
3. Plug the monitor on the next port to test and so on...

User inputs tests

Keyboard test

The keyboard tests ensure that all the keyboard keys are functional, meaning that we detect when they are pressed and then released.

To test a keyboard, you need first to select a keyboard layout within the list ¹. You have the ability to edit a layout, add a new one or delete one.



You have to press and release all the keys and the test automatically ends as successful once all the keys have been pressed and released ³. The key is colored in red when pressed and then in green when released.

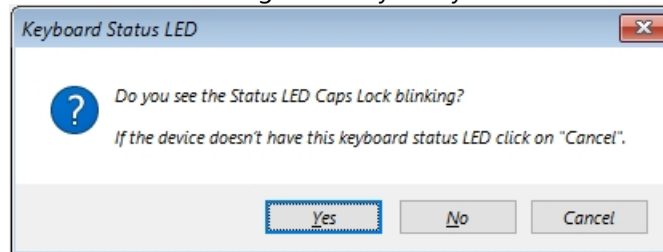
You have anyway the possibility to force a success by clicking on "Pass test" button ⁴ (for example if the keyboard has less keys than expected in the selected layout).

In the same way you can directly set the test as failed by clicking on "Fail test" button ⁵.

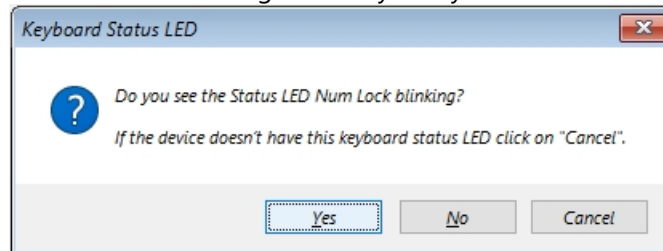
Keyboard LED status test

This test allows you to verify that all keyboard status LED are working.

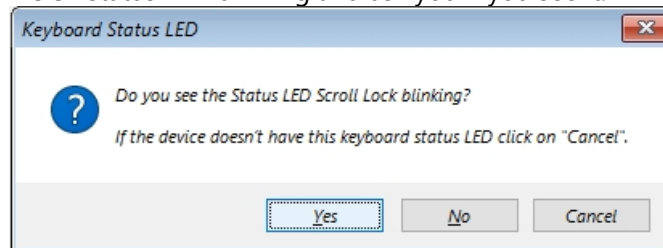
1. We make the CAPS LOCK status LED blinking and ask you if you see it:



2. We make the NUM LOCK status LED blinking and ask you if you see it:



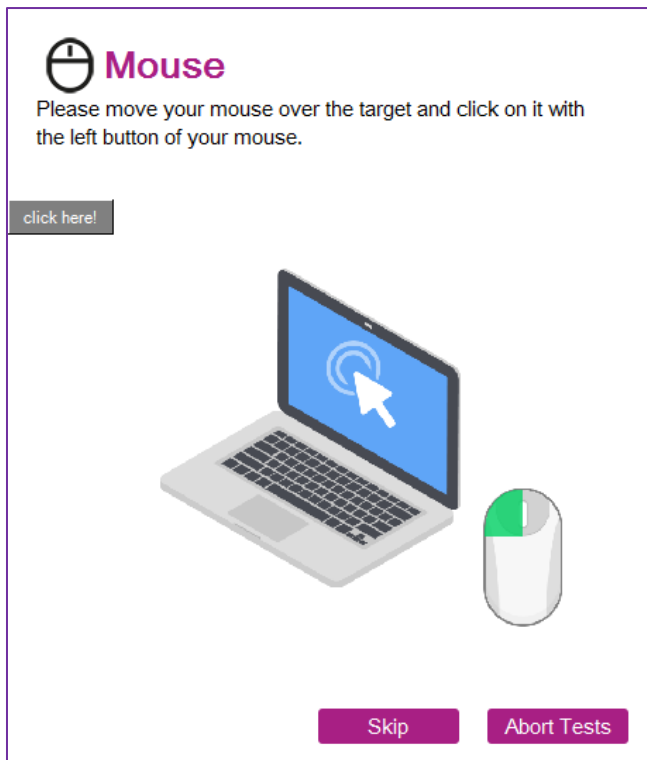
3. We make the SCROOL LOCK status LED blinking and ask you if you see it:



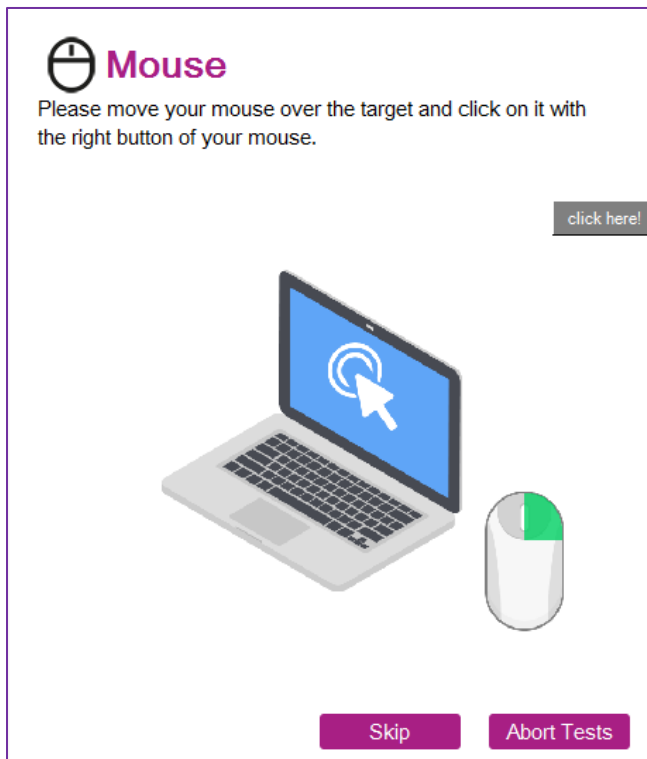
Mouse test

The mouse test will verify that the movements and all buttons are working correctly (you have a dedicated test for trackpad).

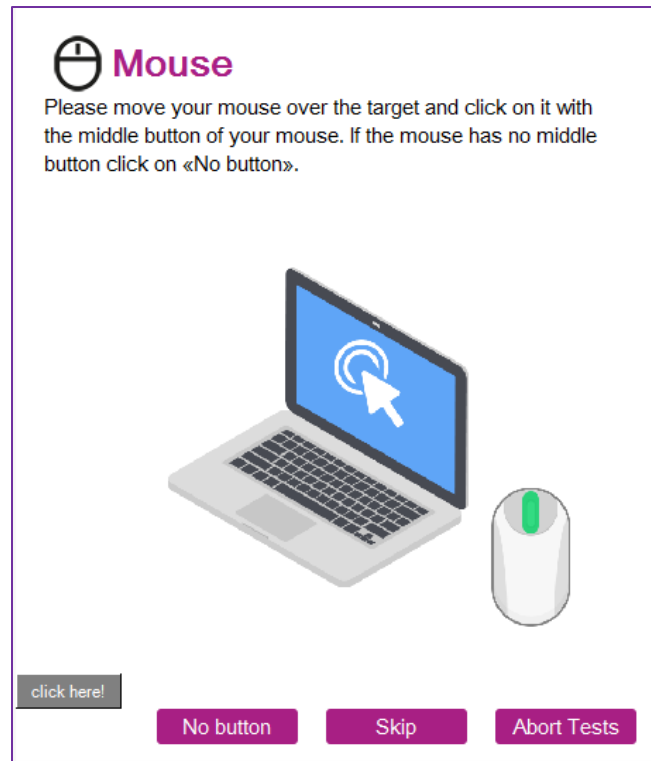
1. Please connect the mouse to test to the device and use it to move the cursor to the "click here!" button and then click with the mouse left button:



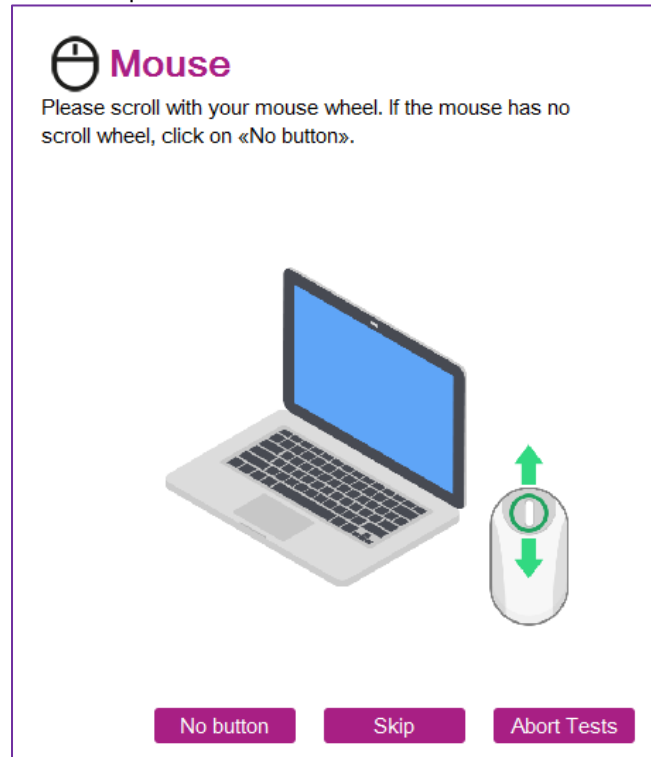
2. Then, move the cursor with the mouse to the new "click here!" button displayed and this time click with the mouse right button:



3. If the mouse has a 3rd middle button, click on the new “click here!” button displayed with this 3rd button. Else, click on “No button”:



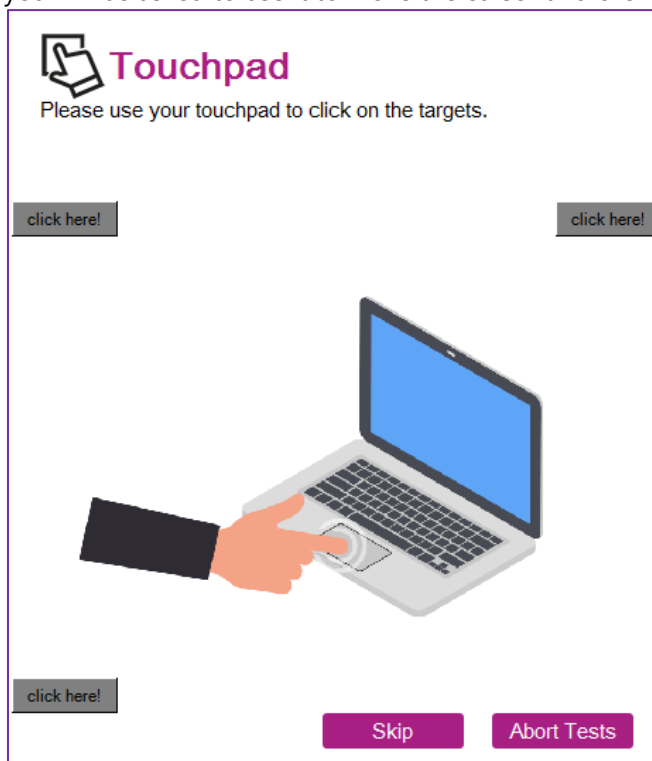
4. If the mouse has a wheel, scroll up and down with it. Else, click on “No button”:



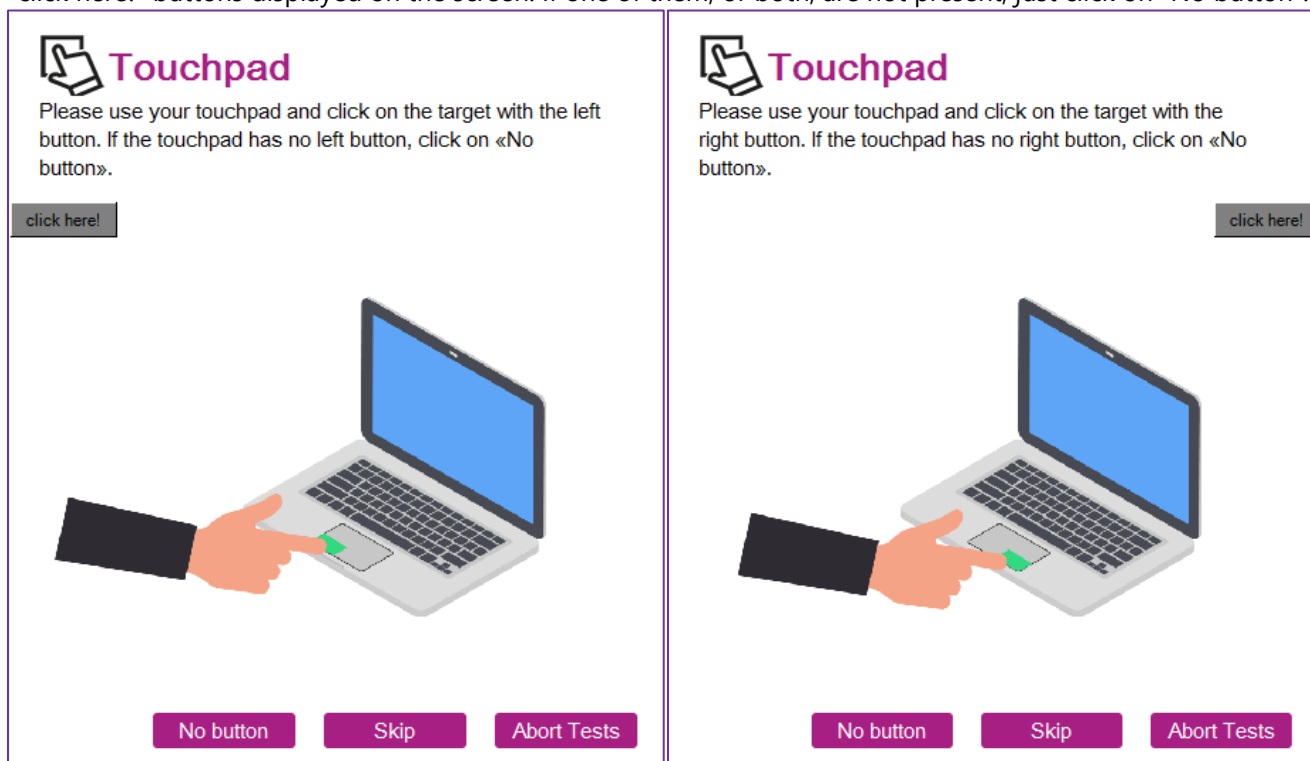
5. The mouse test is now complete

Touchpad test

In order to fully test the touchpad, you will be asked to use it to move the cursor and click on 3 buttons on the screen:

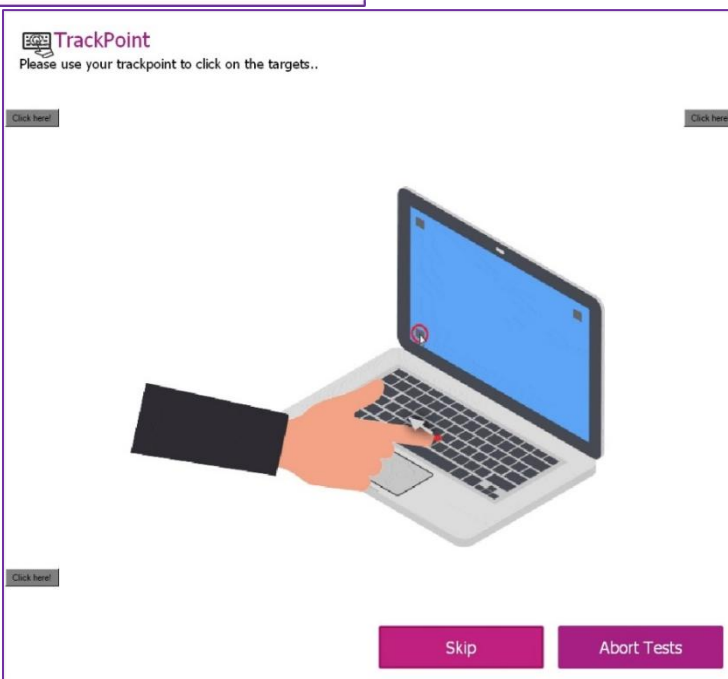
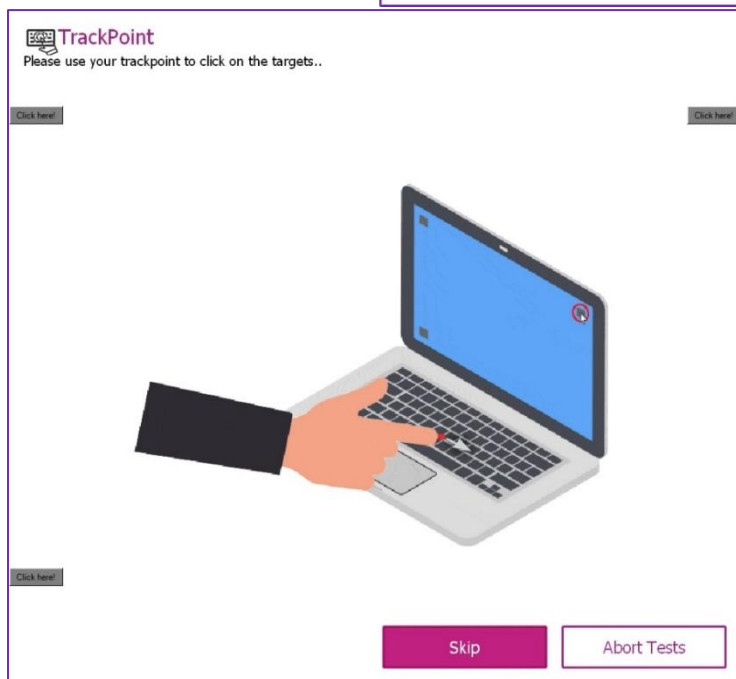
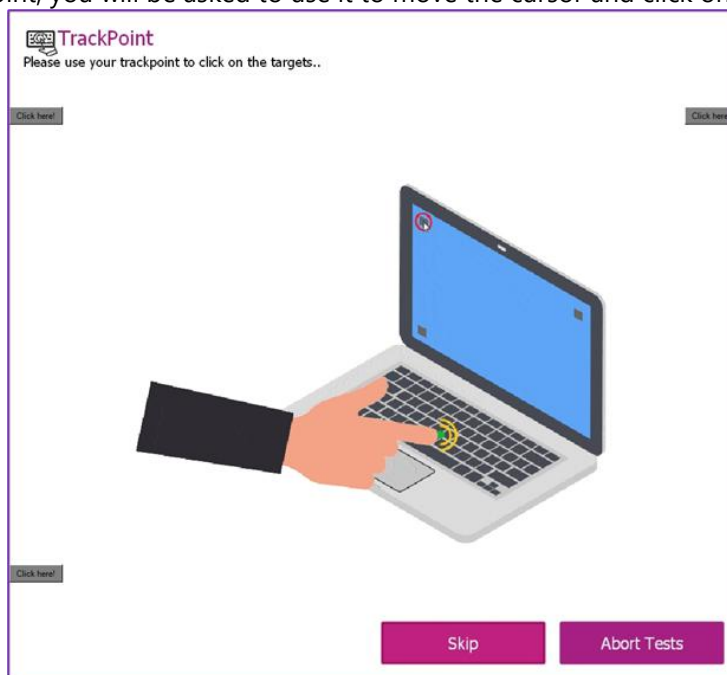


Then, if the touchpad has dedicated physical buttons for left-click and right-click, you will need to use those buttons to click on the "click here!" buttons displayed on the screen. If one of them, or both, are not present, just click on "No button":



Trackpoint test

In order to fully test the trackpoint, you will be asked to use it to move the cursor and click on 3 buttons on the screen:



Battery tests

Battery health test

The health test is fully automatic and instantaneous. It will compute the health level based on the current maximum capacity and the designed one:

health level = (current max capacity / designed max capacity) x 100 = 100 - wear level

wear level = [(designed max capacity - current max capacity)/designed max capacity] x 100 = 100 - health level

If the health value is above the "ErrorLevel" value you can customize in SDSTestBattery.ini, the test will pass, else it will fail.

Battery charging test

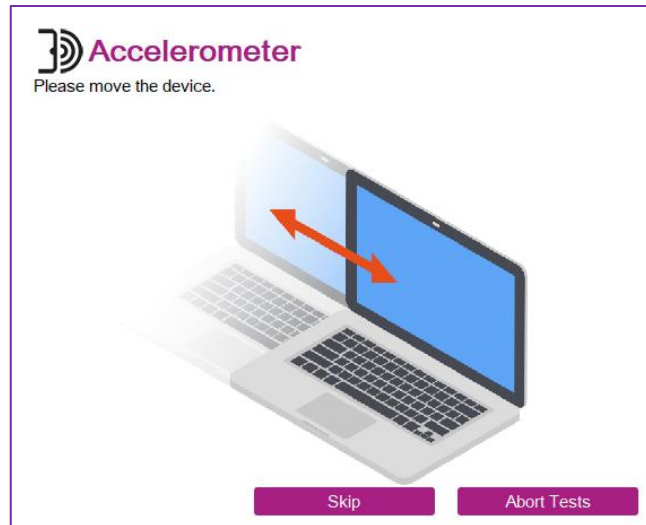
The battery charging test will ensure that the battery is charging when it's plugged to AC power.

NOTE: Some devices include a mechanism to preserve the battery life: above a specific value the battery is no more charging. So, in order to run this test properly, please ensure that the current charge is below this threshold (this value might depend on manufacturers and might be customizable, so we recommend making this test with a current charge below 60%).

Sensor tests

Accelerometer test

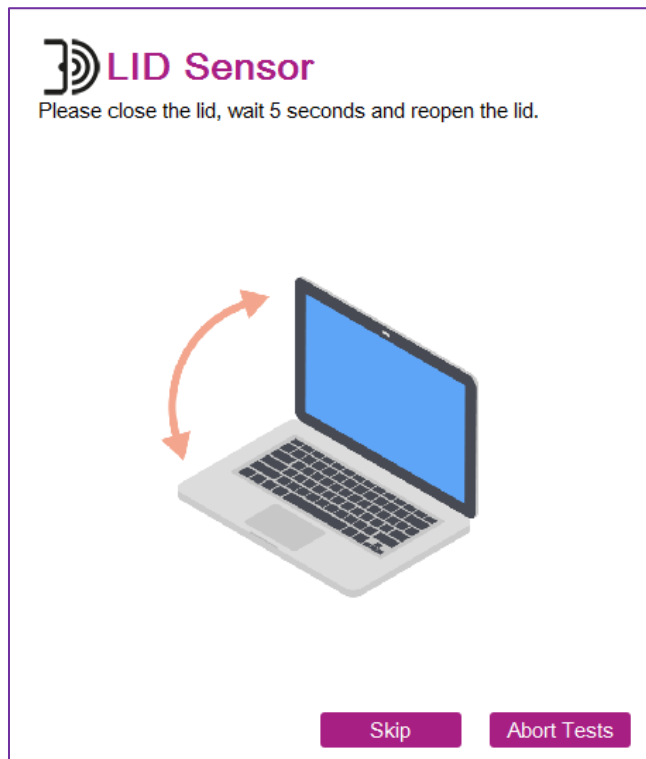
This test will ensure that the accelerometer detects when you move the device.



LID sensor test

The LID Sensor test verifies that the device detects correctly when you close the lid.

1. Close the lid and wait for 5 seconds



2. Reopen the IDL

Other tests

Webcam

To verify that the webcam is working correctly, the test will display in real-time what is captured by the webcam.

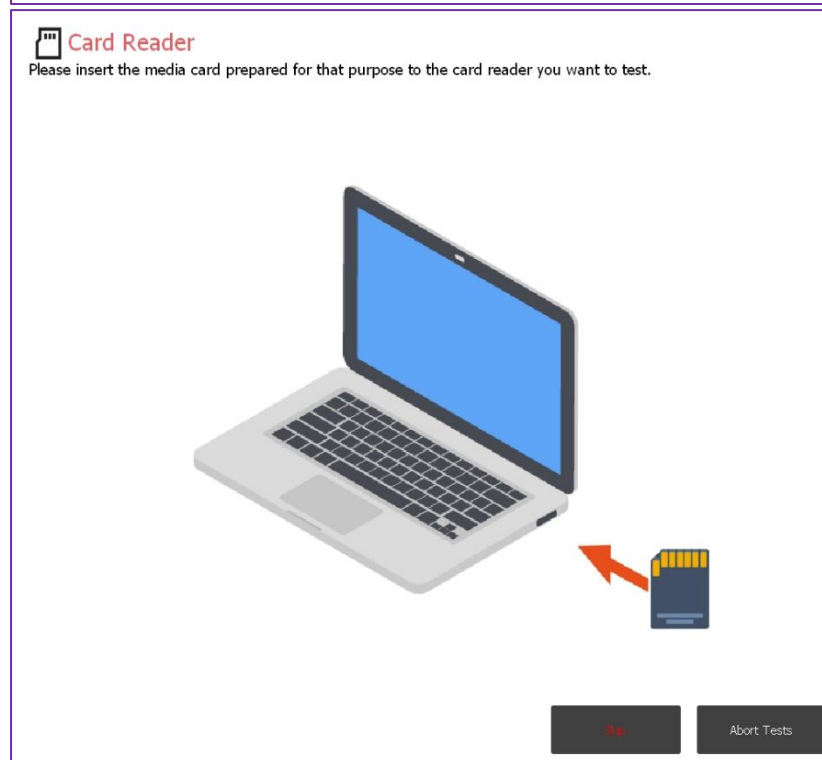
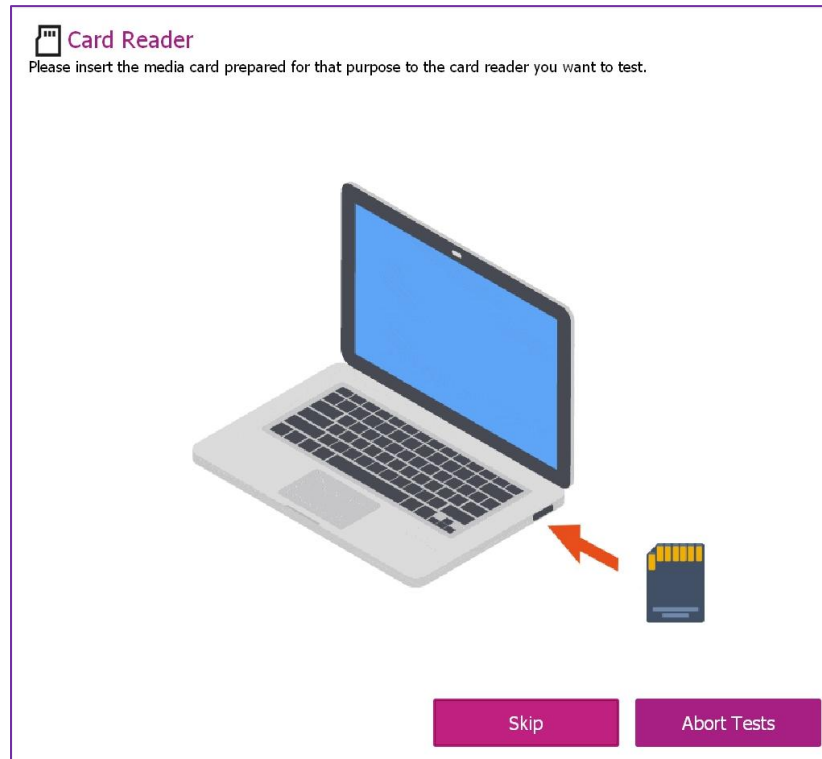


Then you will be asked if the image you were filming display properly.

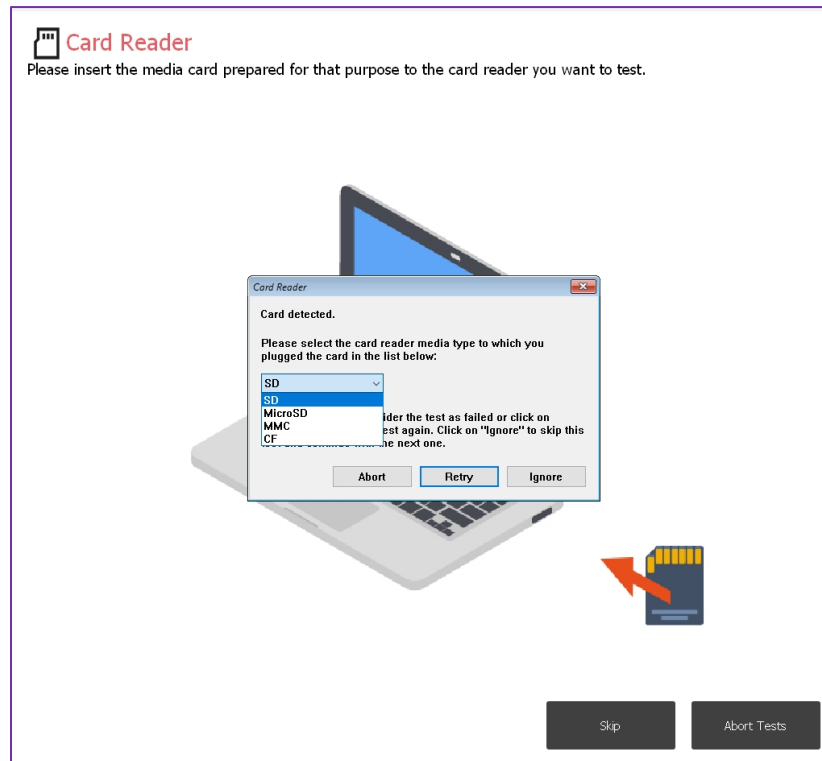
If the device has several webcams / cameras (as MS Surface), all of them will be tested.

Card reader test

1. Insert a card media into the card reader



2. If the card reader is working fine, the card will be detected, and you will be asked to select the slot into which you inserted the card:



3. If no card is detected after a predefined delay, you will be asked also to indicate which slot you used

Auditing hardware

This is a dynamic setup where there would be series of questions presented to the user with potential additional questions that would be presented based on an answer to one of the first questions.

Ex: First question would ask "Any Cosmetic Damage", if the answer is yes then additional question would be displayed to ask about the damage. If no, then the additional question would not be displayed. The questions to display would be controlled by the config file.

Prior to use this module, you will have to define the questions and expected results (text field, yes/no radio button...). You can also define dependencies between questions (for example display a question or not depending on the answer to another question). You can even use custom text color for the answer depending on the value of this answer (typically green for "passed" result, orange for "warning" result, red for "error" result). Please refer to [How to setup the auditing module](#).

softthinks

Diagnostic Kiosk

Cosmetic questions:

Please answer to following questions - (*) mandatory field .

Questions

Device Type ? : (*)
☐ Laptop ☒ Desktop

Battery Supplied ?
☒ Yes ☐ No

PSU Supplied ?
☒ Yes ☐ No

Cosmetics : (*)
☒ Pristine ☐ Minor Marks ☐ Used

Entry Field : (*)
SN Bios : D246662

List Single Select : (*) Choice 1

List Multi Select : (*)

☐ Choice 1
☐ Choice 2
☐ Choice 3
☐ Choice 4
☐ Choice 5

Next

The questions and responses are saved in the Database when you click on Next (and go to next step), or press CTRL+S (without exiting the current screen), and can be used in reports, labels and also to generate a grade / trade-in code based on the rules you will define.

They can also be linked to some hardware tests to discard some which would not be relevant (for example if it's a desktop PC without keyboard supplied, we should not test the keyboard that the operator will plug to the PC).

Reporting


You have the ability to generate reports/exports systematically, or only on success, at the end of any process, as well as during the process itself (typically to be displayed by SDSReport) with the data already pushed to the SQL database at this moment, or at any time later through ReportGenerator tool or through the Dashboard.

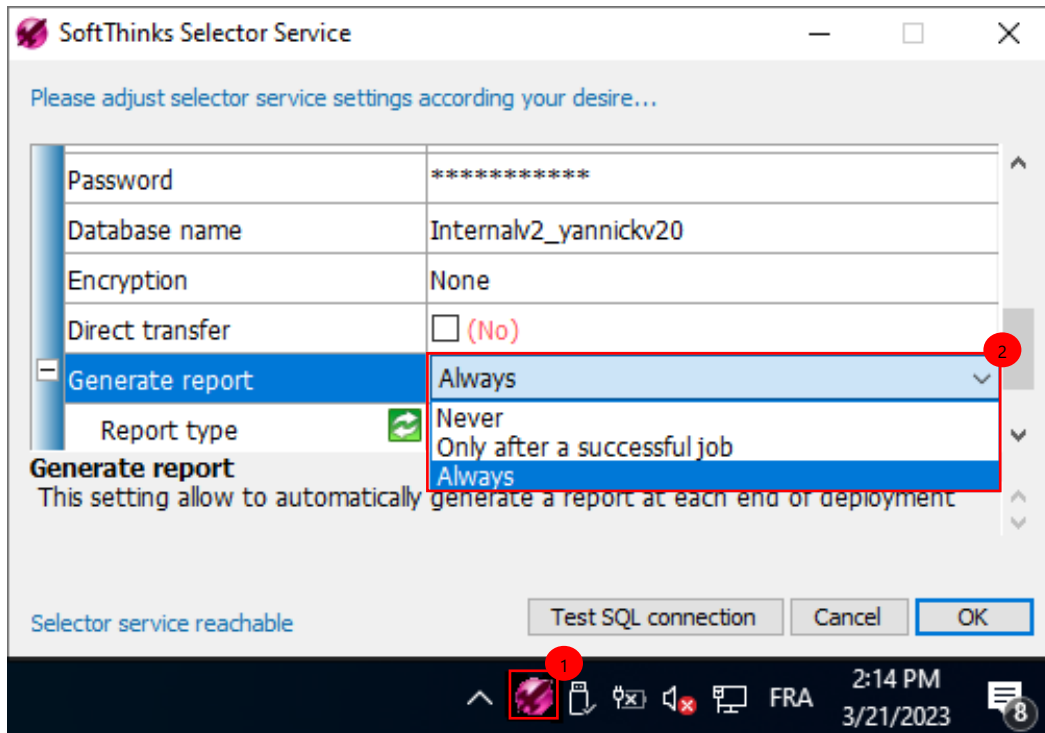
The reports/exports are based on a text based (XML/CSV/HTML...) templates files and can also be generated to PDF file format.


Those templates are using a specific syntax allowing to access dynamically any data stored in SDS SQL Database, providing statement controls as conditions and loops, and formatting options. They are also localized.

Typically, XML/CSV reports can be used for data processing / ERP integration purpose, and the PDF/HTML are more dedicated to be provided to end users. You can also automatically print them, send them by email and push them to FTP.

In order to generate reports, please first check that this feature is enabled:

1. Double-click on the SoftThinks Selector Service  icon 1 in the system tray of the Windows taskbar, or click on it and select "Selector Settings" item in the pop-up menu displayed:



If the  icon is not present, double-click on SelectorSRVG.exe executable located in D:\remoteInstall\SDKDB\selector and wait for the icon to appear before clicking on it.

2. Ensure that "Generate report" 2 is set to either "Only after a successful job" if you want to generate reports only on successful process, or "Always" to systematically generate reports whatever the process succeeded or not.

XML exports

By default, we provide 3 XML templates:

Report_template (v1).xml

Default SQL DB v1 XML export

```
<?xml version="1.0" encoding="utf-8"?>
<!-- ReportGenerator & Dashboard 2.x HTML/PDF Report template -->
<!-- Version "2.0.1.35" -->
<XmlReport xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <ReportDetails>
    <Site>Yannick Test</Site>
    <Date>210323_144729</Date>
    <Extras>
      <Label>id</Label>
      <Value>111</Value>
    </Extras>
    <Extras>
      <Label>combo_list</Label>
      <Value>Choice 1</Value>
    </Extras>
    <Extras>
      <Label>user_click</Label>
      <Value>Refurb Script W/O Deploy </Value>
    </Extras>
    <Extras>
      <Label>exit_code</Label>
      <Value>7</Value>
    </Extras>
  </ReportDetails>
  <HardwareDetails>
    <Manufacturer>HP</Manufacturer>
    <ChassisType>Notebook</ChassisType>
    <Model>HP ProBook 445 G7</Model>
    <Serial>5CD1095S94</Serial>
    <UUID>A848E88F-9454-5432-E6AD-58B46A73E61D</UUID>
    <AssetTag> </AssetTag>
    <Processor>Advanced Micro Devices, Inc. RYZEN 3 4300U CPU @ 0.1GHz</Processor>
    <Memory>8192
    ChannelA0(8192/DDR4/3200)
    ChannelB0(0/Unknown/0)
    </Memory>
    <GraphicsCard>1920 x 1080 (14.1) | (1) - Renoir</GraphicsCard>
    <SoundCard>High Definition Audio Device</SoundCard>
    <Webcam>HP HD Camera</Webcam>
    <NetworkAdapter>1000 Mbps, [(2) - Wired, Realtek PCIe GbE Family Controller+Wireless, Intel(R) Wi-Fi 6 AX200 160MHz]</NetworkAdapter>
    <OpticalDrive>, </OpticalDrive>
    <Motherboard>HP - 8730 - KBC Version 13.23.00</Motherboard>
    <BIOS>07/28/2021 - A848E88F-9454-5432-E6AD-58B46A73E61D</BIOS>
    <Battery>
    Hewlett-Packard 01468 2021/02/05 L1on
    </Battery>
  </HardwareDetails>
  <SdsProcessResults>
    <HardwareTestResult />
    <HardwareTestExResult />
    <WipeResult>OK</WipeResult>
    <OsDeployment></OsDeployment>
    <AppliedImage />
    <OsInstalled />
  </SdsProcessResults>
  <DataErasureReport>
    <ReportUUID>89d288b1-db2a-4954-8a93-dde7bbc3f1a1</ReportUUID>
    <StartTime>2023-01-30 14:29:34.000</StartTime>
    <EndTime>2023-01-30 14:29:39.000</EndTime>
  </DataErasureReport>
  <DiskReport>
    <DiskDetails>
      <Vendor>KIOXIA</Vendor>
      <Model>KBG40ZNV256G KIOXIA</Model>
      <Serial>11BPC2RIQW82</Serial>
      <Size>256 GB</Size>
      <Bus>NVMe</Bus>
      <Sectors>256000514304</Sectors>
      <BlocksPerSector>512</BlocksPerSector>
      <HealthStatus>1</HealthStatus>
      <HPA>-1</HPA>
      <DCO>-1</DCO>
      <PPID />
    </DiskDetails>
    <ErasureReport>
      <Duration>00:00:03</Duration>
      <Status>OK</Status>
    </ErasureReport>
    <WipeAlgo>
      <Method>Sanitize (NIST 800-88)</Method>
      <Rounds>*</Rounds>
    </WipeAlgo>
  </DiskReport>
</XmlReport>
```



106_5CD1095S94_HP
ProBook 445 G7_2103

Report_template[DB Export] (v1).xml

Full XML export of all SQL DB tables v2 in SQL v1 format for ascending compatibility.

```
<?xml version="1.0" encoding="utf-8"?>
<!-- XML RAW Data export v2 -->
<!-- Version "2.0.1.36" -->
<XmlReportRaw xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <Location>Yannick Test</Location>
  <DeploymentExport>
    <deployment_id>106</deployment_id>
    <date>2023-01-30 14:27:45.000</date>
    <serial>5CD1095S94</serial>
    <mac>6C02E095FDFC</mac>
    <version>2</version>
  </DeploymentExport>
  <HardwareExport>
    <deployment_id>106</deployment_id>
    <cpu>Advanced Micro Devices, Inc. RYZEN 3 4300U CPU @ 2.1GHz</cpu>
    <motherboard>HP - 8730 - KBC Version 13.23.00 - PJWMD038JEW00V</motherboard>
    <bios>07/28/2021 - A848E88F-9454-5432-E6AD-58B46A73E61D</bios>
    <ram>8192 MB ChannelA0(8192/DDR4/3200) - ChannelB0(0/Unknown/0)</ram>
    <manufacturer>HP</manufacturer>
    <product>Notebook - HP ProBook 445 G7</product>
    <serial>5CD1095S94</serial>
    <nic>1000 Mbps, [(2) - Wired, Realtek PCIe GbE Family Controller+Wireless, Intel(R) Wi-Fi 6 AX200 160MHz]</nic>
    <optic_drive>, </optic_drive>
    <fixed_disk>KBG40ZNV256G [11BPC2RIQW82](256 GB)</fixed_disk>
    <gpu_card>Renoir</gpu_card>
    <sound_card>High Definition Audio Device</sound_card>
    <webcam>HP HD Camera</webcam>
  </HardwareExport>
  <ModuleExport>
    <deployment_id>106</deployment_id>
    <module_id>0</module_id>
    <module_id_xtra>877</module_id_xtra>
    <module_name>Script</module_name>
    <module_result>BATTERY_CHEMISTRY</module_result>
    <module_result_data>ID1:Lion</module_result_data>
    <start_date></start_date>
    <end_date></end_date>
    <closing_code></closing_code>
    <module_hwid>0</module_hwid>
  </ModuleExport>
  <ModuleExport>
    <deployment_id>106</deployment_id>
    <module_id>0</module_id>
    <module_id_xtra>878</module_id_xtra>
    <module_name>Script</module_name>
    <module_result>BATTERY_NAME</module_result>
    <module_result_data>ID1:RE03 (RE03045XL)</module_result_data>
    <start_date></start_date>
    <end_date></end_date>
    <closing_code></closing_code>
    <module_hwid>0</module_hwid>
  </ModuleExport>
  <ModuleExport>
    <deployment_id>106</deployment_id>
    <module_id>0</module_id>
    <module_id_xtra>879</module_id_xtra>
    <module_name>Script</module_name>
    <module_result>BATTERY_SERIAL</module_result>
    <module_result_data>ID1:01468 2021/02/05</module_result_data>
    <start_date></start_date>
    <end_date></end_date>
    <closing_code></closing_code>
    <module_hwid>0</module_hwid>
  </ModuleExport>
  <ModuleExport>
    <deployment_id>106</deployment_id>
    <module_id>0</module_id>
    <module_id_xtra>880</module_id_xtra>
    <module_name>Script</module_name>
    <module_result>BATTERY_VENDOR</module_result>
    <module_result_data>ID1:Hewlett-Packard</module_result_data>
    <start_date></start_date>
    <end_date></end_date>
    <closing_code></closing_code>
    <module_hwid>0</module_hwid>
  </ModuleExport>
  <ModuleExport>
    <deployment_id>106</deployment_id>
    <module_id>0</module_id>
    <module_id_xtra>881</module_id_xtra>
    <module_name>Script</module_name>
    <module_result>BATTERY_CURRENT_CAP</module_result>
    <module_result_data>ID1:31520</module_result_data>
    <start_date></start_date>
    <end_date></end_date>
    <closing_code></closing_code>
    <module_hwid>0</module_hwid>
  </ModuleExport>
</-->
[...]
```



106_5CD1095S94_HP
ProBook 445 G7_2103

Report_template[DB Export] (v2).xml

Full XML export of all SQL v2 DB tables v2.

```
<?xml version="1.0" encoding="utf-8"?>
<!-- XML RAW Data export v2 -->
<!-- Version "2.0.1.36" -->
<XmlReportRaw xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <Location>Yannick Test</Location>
  <Deployment>
    <deployment_id>106</deployment_id>
    <date>2023-01-30 14:27:45.000</date>
    <serial>5CD1095S94</serial>
    <mac>6C02E095FDFC</mac>
    <version>2</version>
    <SERVER_NAME>SRV-TESTSDS</SERVER_NAME>
  </Deployment>
  <Hardware>
    <deployment_id>106</deployment_id>
    <MOTHERBOARD_MANUFACTURER>HP</MOTHERBOARD_MANUFACTURER>
    <MOTHERBOARD_MODEL>8730</MOTHERBOARD_MODEL>
    <MOTHERBOARD_VERSION>KBC Version 13.23.00</MOTHERBOARD_VERSION>
    <MOTHERBOARD_SERIAL>PJMMD038JEW00V</MOTHERBOARD_SERIAL>
    <BIOS_VENDOR>HP</BIOS_VENDOR>
    <BIOS_VERSION>S79 Ver. 01.06.00</BIOS_VERSION>
    <BIOS_DATE>07/28/2021</BIOS_DATE>
    <SYSTEM_MANUFACTURER>HP</SYSTEM_MANUFACTURER>
    <SYSTEM_PRODUCT>HP ProBook 445 G7</SYSTEM_PRODUCT>
    <SYSTEM_SERIAL>5CD1095S94</SYSTEM_SERIAL>
    <SYSTEM_VERSION></SYSTEM_VERSION>
    <SYSTEM_UUID>A848E88F-9454-5432-E6AD-58B46A73E61D</SYSTEM_UUID>
    <SYSTEM_SKU>112A3ET#ABF</SYSTEM_SKU>
    <ENCLOSURE_CHASSIS>Notebook</ENCLOSURE_CHASSIS><!--Desktop/Minitower/...-->
    <CPU_COUNT>1</CPU_COUNT><!--Nb CPU-->
    <DISK_COUNT>1</DISK_COUNT><!--Nb disks-->
    <RAM_MB>8192</RAM_MB><!--Total RAM size in MB: 16384/8192/4096...-->
    <BLUETOOTH>0</BLUETOOTH><!--0/1-->
    <BIOMETRICS>0</BIOMETRICS><!--0/1-->
    <RAM_CARDREADER></RAM_CARDREADER><!--0/1-->
    <TPM_VERSION>2.0</TPM_VERSION>
  </Hardware>
  <Battery>
    <DEPLOYMENT_ID>106</DEPLOYMENT_ID>
    <NAME>RE03 (RE03045XL)</NAME>
    <VENDOR>Hewlett-Packard</VENDOR>
    <CHEMISTRY>LiIon</CHEMISTRY>
    <SERIAL>01468 2021/02/05</SERIAL>
    <WEAR_LEVEL>31</WEAR_LEVEL>
    <DESIGNED_CAP>45045</DESIGNED_CAP>
    <FULLCHARGED_CAP>31520</FULLCHARGED_CAP>
    <CURRENT_CAP>31520</CURRENT_CAP>
    <RATE>0</RATE>
    <POWERSTATE>1</POWERSTATE>
    <VOLTAGE>12309</VOLTAGE>
    <CYCLECOUNT>23</CYCLECOUNT>
  </Battery>
  <CPU>
    <DEPLOYMENT_ID>106</DEPLOYMENT_ID>
    <MANUFACTURER>Advanced Micro Devices, Inc.</MANUFACTURER><!--INTEL / AMD...-->
    <MODEL>RYZEN 3 4300U</MODEL><!--CORE I5-3330 / A4-5300...-->
    <SOCKET>None</SOCKET><!--Socket BGA1155 / Socket FM2 / Socket LGA1151 / Other ...-->
    <CPUID>860F01</CPUID><!--306A9 / 610F01 ...-->
    <CPUINDEX>0</CPUINDEX><!--Index starting at 0-->
    <NOMINAL_FREQUENCY>2700</NOMINAL_FREQUENCY><!--Nominal frequency in MHz: 3600 / 3400 / 3000 ...-->
    <MAX_FREQUENCY>3800</MAX_FREQUENCY><!--Maximum frequency in MHz: 3800 / 3400 / 3000 ...-->
    <CORES>4</CORES>
    <THREADS>4</THREADS>
    <L1CACHE>256</L1CACHE>
    <L2CACHE>2048</L2CACHE>
    <L3CACHE>4096</L3CACHE>
  </CPU>
  <DISK>
    <DEPLOYMENT_ID>106</DEPLOYMENT_ID>
    <MANUFACTURER>KIOXIA</MANUFACTURER>
    <MODEL>KBG40ZNV256G</MODEL>
    <FIRMWARE>HP00AE00</FIRMWARE>
    <SERIAL>11BPC2RIQW82</SERIAL>
    <CONNECTOR>PCIROOT(0)#PCI(0204)#PCI(0000)#NVME(P00T00L00)</CONNECTOR><!--PCIROOT(0)#PCI(1F02)#SATA(C00T00L00) /
ACPI(_SB_)#ACPI(PCI0)#ACPI(SAT0)#ACPI(CHN0)#ATA(C00T00L00) ...-->
    <WNN>0100000000000008CE38E041A7A97B</WNN>
    <PPID></PPID>
    <SIZE_COMMERCIAL>256 GB</SIZE_COMMERCIAL><!--Size with unit: 1.00 TB / 500 GB ...-->
    <DISK_TYPE>SSD</DISK_TYPE><!--HDD/SSD-->
    <SIZE>256060514304</SIZE><!--Real size in Bytes: 1000204886016 / 500107862016 ...-->
    <REMAINED_SECTOR>1</REMAINED_SECTOR><!--Nb of sectors remapped: usually 0 / -1 if unknown ...-->
    <BPS>512</BPS><!--Nb of bits of per sector: 512 ...-->
    <BUS>17</BUS>
    <HEALTH>1</HEALTH>
    <HPA>1</HPA>
    <DCO>1</DCO>
    <RPM>1</RPM><!--Rotation per minute for HDD: 7200 / 5400 ...-->
    <LOGICAL>0</LOGICAL>
  </DISK>
  <GPU>
    <DEPLOYMENT_ID>106</DEPLOYMENT_ID>
    <MODEL>Renoir</MODEL>
    <PNP>PCI\VEN_1002&DEV_1636&SUBSYS_8730103C&REV_C4</PNP>
    <DRIVER>n/a</DRIVER>
  </GPU>
  [...]
</XmlReportRaw>
```



106_5CD1095S94_HP
ProBook 445 G7_2103

HTML/PDF reports

We provide default HTML/PDF reports to illustrate the possibilities of our solution. You can totally customize same regarding the contents and look & feel or build your own ones.

Basic HTML/PDF report (Report_template.html)

This report is almost the same than the PDF report generated with SDS versions up to 22.0, except that it's using a HTML template, more customizable, instead of a XLS template.



Report

Report Details

Site	Yannick Test
Date	01/30/2023 02:27:45 PM

Hardware Details

Manufacturer	HP
Chassis type	Notebook
Model	HP ProBook 445 G7
Serial	5CD1095S94
UUID	A848E80F-9454-5432-E6AD-5B946A73E61D
Processor	Advanced Micro Devices, Inc. RYZEN 3 4300U @ 2.1GHz
Memory	8GB
Graphics Card	ChannelA0 - SODIMM: 8GB DDR4 3200MHz (M471A1G44AB0-CWE)
Sound Card	Realtek (n/a)
Sound Card	High Definition Audio Device (oem0.inf)
Network Adapter	Wired - Realtek PCIe GbE Family Controller 1000Mbps (MAC: 6C:02:E0:95:FD:FC)
Network Adapter	Wireless - Intel(R) Wi-Fi 6 AX200 160MHz (MAC: 84:1B:77:A7:3D:B6)
Motherboard	HP 6730 KBC Version 13.23.00 (S/N: P3WMD03JEW000)
BIOS	HP (579 Ver. 01.06.00 - 07/28/2021)
Battery	Hewlett-Packard RE03 (RE03045XL) Lion (S/N: 01468 2021/02/05) - Health: 69%

Manual inputs

Plastics ? (*)	Minor Marks
Screen ? (*)	Minor Marks
Keypad ? (*)	Prdtline
Batch ID (*)	123456

Hardware Diagnostics

Hardware test result	OK
HDD SMART Status	Passed
HDD Short SMART Test	Passed
Internal Speaker	Passed
Internal Microphone	Passed
Keyboard	Passed
Display Ports	Passed
Dead Pixel Test	Passed
Wired (LAN)	Passed

Data Erasure

Wipe result	OK
Disk(s) wiped	K10X1A KB640ZNV256G K10X1A 256 GB (S/N: 11BPC2R1QW82) - Wipe algorithm: Sanitize (NIST 800-88) (*)

I hereby state that the data erasure process has been carried out in accordance with the given instructions.

Global Result


Grade	B
--------------	---







106_5CD1095S94_HP 106_5CD1095S94_HP
ProBook 445 G7_2103ProBook 445 G7_2103


Report_Template_Graphical (1).html


This template is dedicated to provide a nice report to your customer containing information which clearly identify his device and show him what has been done to ensure that it's working correctly. As for all HTML templates, you can change easily and totally the look and feel: you can put your company logo, change the fonts, the colors, the borders size and color...


		Model HP - HP ProBook 445 G7 Chassis type Notebook Serial / UUID 5CD1095S94 / A648E88F-9454-5432-E6AD-58B46A73E61D Processor Advanced Micro Devices, Inc. RYZEN 3 4300U @ 2.1GHz Memory 8GB Channel/IO - SODIMM: 8GB DDR4 3200MHz (M471A1G44AB0-CWE) Disk SSD KIOXIA KBG40ZNV256G 256 GB - SN:11BPC2RQW62 - Health:Healthy Graphics Card Renoir Sound Card High Definition Audio Device Network Adapter Wired - Realtek PCIe GbE Family Controller 1000Mbps (8C:02:ED:95:FD:FC) Network Adapter Wireless - Intel(R) Wi-Fi 6 AX200 160MHz (84:1B:77:A7:3D:B6) Motherboard HP 8730 - Version:KBC Version 13.23.00 - S/N:PJMM003BJEV00V BIOS HP - Version:S79 Ver. 01.06.00 - Date:07/28/2021 Battery Hewlett-Packard RE03 (RE03045XL) - Lion - S/N:01468 2021/02/05 - Health:31%	
Site Yannick Test Date 01/30/2023 02:27:45 PM Global Result OK Grade B			

Report Details

	Hardware Diagnostics <ul style="list-style-type: none"> ✓ HDD SMART Status 11BPC2RQW62 ✓ HDD Short SMART Test 11BPC2RQW62 ✓ Internal Speaker ✓ Internal Microphone ✓ Keyboard ✓ Display Ports Skipped - Feature previously tested ✓ Feature previously tested ✓ Dead Pixel Test ✓ Wired (LAN) 	✓
	Data Erasure <ul style="list-style-type: none"> ✓ Disk(s) wiped: KIOXIA KBG40ZNV256G KIOXIA 256 GB - SN:11BPC2RQW62 - Health Status:Good Wipe algorithm: Sanitize (NST 800-88) (*) - 00:00:03 <p><i>I hereby state that the data erasure process has been carried out in accordance with the given instructions.</i></p>	✓
	Manual inputs Plastics: Minor Marks Screens: Minor Marks Keypad: Pristine Batch ID: 123456	
	Grade	B

Solution developed by:


Part of hardware diagnostics provided by:



Secure wipe certified by:




B106_5CD1095S94_H B106_5CD1095S94_H
P ProBook 445 G7_16P ProBook 445 G7_16I

Report_Template_Graphical (2).html

This template is similar than the previous one but with a slightly difference in term of look and feel.




Site: Yannick Test
Date: 01/30/2023 02:27:45 PM

Global Result: OK
Grade: B


Model: HP - HP ProBook 445 G7
Chassis type: Notebook
Serial / UUID: SCD1066S94 / A848E88F-9454-5432-E9AD-58B46A73561D
Processor: Advanced Micro Devices, Inc. RYZEN 3 4300U @ 2.1GHz
Memory: 8GB - Channel A0 - SODIMM: 8GB DDR4 3200MHz (M471A1G44AB0-CWE)
Disk: SSD KIOXIA KBG40ZM/256G 256 GB - SN:11BPC2RQW82 - Health:Good
Graphics Card: Renoir
Sound Card: High Definition Audio Device
Network Adapter: Wired - Realtek PCIe GbE Family Controller 1000Mbps (8C02:E0:95:FD:FC)
Wireless - Intel(R) Wi-Fi 6 AX200 160MHz (84:1B:77:A7:3D:B6)
Network Adapter: Wireless - Intel(R) Wi-Fi 6 AX200 160MHz (84:1B:77:A7:3D:B6)
Motherboard: HP 8730 - Version:KBC Version 13.23.00 - SIN:PJMM038JEN00V
BIOS: HP - Version:SF9 Ver. 01.06.00 - Date:07/28/2021
Battery: Hewlett-Packard RE03 (RE03045XL) - Lion - SIN01468 2021/02/05 - Health:31%

Report Details


Hardware Diagnostics



- ✓ HDD SMART Status 11BPC2RQW82
- ✓ HDD Short SMART Test 11BPC2RQW82
- ✓ Internal Speaker
- ✓ Internal Microphone
- ✓ Keyboard
- ✓ Display Ports Skipped - Feature previously tested
Feature previously tested
- ✓ Dead Pixel Test
- ✓ Wired (LAN)




Data Erasure




- ✓ Disk(s) wiped: KIOXIA KBG40ZM/256G KIOXIA 256 GB - SN:11BPC2RQW82 - Health Status:Good
Wipe algorithm: Sanitize (NIST 800-86) (*) - 00:00:03

I hereby state that the data erasure process has been carried out in accordance with the given instructions.




Manual inputs




Plastics: Minor Marks
Screen: Minor Marks
Keypad: Pristine
Batch ID: 123456

Grade




B


Solution developed by:



Part of hardware diagnostics provided by:




Secure wipe certified by:



Labels (Label_template.html)

This template illustrates the possibility to generate labels than can be automatically printed, as for any other report. This is useful to put on the device once it has been processed.

Here below an example of a label after a trade-in flow (Audit + Hardware diagnostics + Wipe):

softthinks	Testing date:
Dell Inc. Desktop - Inspiron 3847 (0622)	28/01/2020
	14:06:40
PSU + Battery supplied and power up from either? : Not a laptop	
Is there a keyboard? : Yes	
Is there a mouse? : No	
Cosmetics : Pristine	
Wipe: DONE	
Failed tests:	
S/N: FQXW762	Grade:
	A

In order to get the barcode displayed correctly, you need to install the font attached below on the SDS server:



FREE3OF9.TTF

Configuration file

To generate one or more report/export at the end of each process, you will need to customize the file ReportGenerator.ini:

```
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
;; ReportGenerator v2 configuration file (replaces ReportGenerator.exe.config from v1) to customize
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;

[General]
Version=2.0.0.38
LastRevisionDate=14 June 2024 at 15:59

[Location]
;SiteName is the name of the location, as it will appear in the report(s)
SiteName=

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
; SQL Server and Database settings
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
;SQL settings are read directly from Selector.ini file

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
; Default reports common settings which can be bypassed for each report_<x>
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
[Report]
;Default reports page size. Can be customized for each report. Only relevant for PDF reports
PageSize=Letter

;Default reports output folder. Can be customized for each report
reportFolderPath=C:\Softthinks\Reports\Wipe

;Default reports localization settings
;Can be set specifically for each report (RAW exports for data processing should be english whereas
reports for end-user should be localized for the end-user)
language=English
reportCreationTimeFormat=%Y%m%d_%H%M%S
deploymentDateTime=%m/%d/%Y %I:%M:%S %p

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
; [Report_x] (x=1 to ...) section contains the settings for each report to generate
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
;The report below is like the PDF report generated by ReportGenerator v1, except that it's based on
a far more customizable HTML template instead of v1 XLS template
;Consequently, a HTML report is systematically generated with the same filename (but HTML file
extension instead of PDF one) to convert it then to PDF
;To just generate an HTML report you should change reportFilename extension to HTML instead of PDF
[Report_1]
;Enable=0|1 to enable or not the generation of this report
Enable=1

;Custom report page size
PageSize=Letter

;Custom report localization settings
language=English
reportCreationTimeFormat=%Y%m%d_%H%M%S
deploymentDateTime=%m/%d/%Y %I:%M:%S %p
```



```
;Custom report output folder
reportFolderPath=C:\Softthinks\Reports\Wipe

;templateFilePath is the path of the input file to use as template. The template file format has to
be text file based (HTML,XML,CSV...)
;report_template.html is matching ReportGenerator v1 PDF output format
templateFilePath=.\report_template.html

;reportFilename is the filename of the report to generate
;Its file extension has to match the template file extension, excepted for PDF output which is
generated from HTML template
reportFileName={%DI%}_ {%HARDWARE.SYSTEM_SERIAL%}_ {%MODULE_XTRA[SDSWelcome].ASSET_ID%}_ {%NOW%}.PDF

;To send the report by email, set SendByEmail value to 1 and fill [Email] section
SendByEmail=0
;If you want to use a specific subject and/or message and/or receiver, you can specify them here.
Else we will use [Email] section values
;Both email subject and message can contains tags with the same grammar than for the template
EmailSubject=Report {%MODULE_XTRA[SDSWelcome].ASSET_ID%}
EmailMessage=Please find attached the report generated on {%NOW%} for the device
{%HARDWARE.SYSTEM_SERIAL%}.
;Email address to send the report to. For multiple receivers, separate them by a comma
EmailReceiver=address1@domain.com,address2@domain.com

;To push the report to a FTP, set PushToFTP value to 1 and fill [FTP] section.
PushToFTP=0
;If you want to use a specific FTP, you can specify it here. Else we will use [FTP] section values
FTPServerIP=
FTPPort=
FTPLogin=
FTPPassword=
FTPFolder=

;To print the report automatically with the default printer configurer on SDS server, set Print
value to 1
Print=0

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
;The report below is a graphical PDF report based on HTML template (a HTML report is systematically
generated to convert it then to PDF)
;To just generate an HTML report you should change reportFilename extension to HTML instead of PDF
[Report_2]
;Enable=0|1 to enable or not the generation of this report
Enable=1

;Custom report page size
PageSize=Letter

;Custom report localization settings
language=English
reportCreationTimeFormat=%Y%m%d_%H%M%S
deploymentDateTime=%m/%d/%Y %I:%M:%S %p

;Custom report output folder
reportFolderPath=C:\Softthinks\Reports\Wipe
```

```
;templateFilePath is the path of the input file to use as template. The template file format has to
be file based (HTML,XML,CSV...)
templateFilePath=.\\report_template_graphical (1).html

;reportFilename is the filename of the report ot generate.
;Its file extension has to match the template file extension, excepted for PDF ouput which is
generated from HTML template
reportFileName={%DI%}_{%HARDWARE.SYSTEM_SERIAL%}_{%MODULE_XTRA[SDSWelcome].ASSET_ID%}_{%NOW%} (v2-
1).PDF

;To send the report y email, set SendByEmail value to 1 and fill [Email] section.
SendByEmail=0

;If you want to use a specific subject and/or message and/or receiver, you can specify them here.
Else we will use [Email] section values
;Both email subject and message can contains tags with the same grammar than for the template (see
at the end of this file)
EmailSubject=
EmailMessage=
EmailReceiver=

;To push the report to a FTP, set PushToFTP value to 1 and fill [FTP] section.
PushToFTP=0
;If you want to use a specific FTP, you can specify it here. Else we will use [FTP] section values
FTPServerIP=
FTPPort=
FTPLogin=
FTPPassword=
FTPFolder=

;To print the report automatically with the default printer configurer on SDS server, set Print
value to 1
Print=0

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
;The report below is a another graphical PDF report based on HTML template (a HTML report is
systematically generated to convert it then to PDF)
;To just generate an HTML report you should change reportFilename extension to HTML instead of PDF
[Report_3]
;Enable=0|1 to enable or not the generation of this report
Enable=1

;Custom report page size
PageSize=Letter

;Custom report localization settings
language=English
reportCreationTimeFormat=%Y%m%d_%H%M%S
deploymentDateTime=%m/%d/%Y %I:%M:%S %p

;Custom report output folder
reportFolderPath=C:\\Softthinks\\Reports\\Wipe

;templateFilePath is the path of the input file to use as template. The template file format has to
be file based (HTML,XML,CSV...)
;report_template_ex.html is matching SDSReport report output format (more graphical)
```

```
templateFilePath=.\report_template_graphical (2).html

;reportFilename is the filename of the report ot generate.
;Its file extension has to match the template file extension, excepted for PDF ouput which is
generated from HTML template
reportFileName={%DI%}_ {%HARDWARE.SYSTEM_SERIAL%}_ {%MODULE_XTRA[SDSWelcome].ASSET_ID%}_ {%NOW%} (v2-
2).PDF

;To send the report y email, set SendByEmail value to 1 and fill [Email] section.
SendByEmail=0

;If you want to use a specific subject and/or message and/or receiver, you can specify them here.
Else we will use [Email] section values
;Both email subject and message can contains tags with the same grammar than for the template (see
at the end of this file)
EmailSubject=
EmailMessage=
EmailReceiver=

;To push the report to a FTP, set PushToFTP value to 1 and fill [FTP] section.
PushToFTP=0
;If you want to use a specific FTP, you can specify it here. Else we will use [FTP] section values
FTPServerIP=
FTPPort=
FTPLogin=
FTPPassword=
FTPFolder=

;To print the report automatically with the default printer configurer on SDS server, set Print
value to 1
Print=0

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
[Report_4]
Enable=1
PageSize=Letter
templateFilePath=.\report_template (v1).xml
reportFolderPath=C:\Softthinks\Reports\Wipe
reportFileName={%DI%}_ {%HARDWARE.SYSTEM_SERIAL%}_ {%MODULE_XTRA[SDSWelcome].ASSET_ID%}_ {%NOW%} v1.XML
reportCreationTimeFormat=%Y%m%d_%H%M%S
deploymentDateTime=%m/%d/%Y %I:%M:%S %p

;To send the report y email, set SendByEmail value to 1 and fill [Email] section.
SendByEmail=0

;If you want to use a specific subject and/or message and/or receiver, you can specify them here.
Else we will use [Email] section values
;Both email subject and message can contains tags with the same grammar than for the template (see
at the end of this file)
EmailSubject=
EmailMessage=
EmailReceiver=

;To push the report to a FTP, set PushToFTP value to 1 and fill [FTP] section.
PushToFTP=0
;If you want to use a specific FTP, you can specify it here. Else we will use [FTP] section values
FTPServerIP=
```

```
FTPPort=
FTPLogin=
FTPPassword=
FTPFolder=

;To print the report automatically with the default printer configurer on SDS server, set Print
value to 1
Print=0

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
;The report below is the <filename>[DBExport].xml generated for ERP integration with all SQL data
formatted as with SQL v1 DB
;It's there for ascending compatibility only, letting the time for customers to adapt their
integration process
;but should be replaced by the v2 format where all data are plitted in different values instead of a
long string with all information to parse, as asked by customers
[Report_5]
Enable=1
PageSize=Letter
templateFilePath=.\\report_template[DB Export] (v1).XML
reportFolderPath=C:\\Softthinks\\Reports\\Wipe
reportFileName={%DI%}_[%HARDWARE.SYSTEM_SERIAL%]_[%MODULE_XTRA[SDSWelcome].ASSET_ID%]_[%NOW%] [DB
Export] (v1).XML
reportCreationTimeFormat=%Y%m%d_%H%M%S
deploymentDateTime=%m/%d/%Y %I:%M:%S %p

;To send the report y email, set SendByEmail value to 1 and fill [Email] section.
SendByEmail=0

;If you want to use a specific subject and/or message and/or receiver, you can specify them here.
Else we will use [Email] section values
;Both email subject and message can contains tags with the same grammar than for the template (see
at the end of this file)
EmailSubject=
EmailMessage=
EmailReceiver=

;To push the report to a FTP, set PushToFTP value to 1 and fill [FTP] section.
PushToFTP=0
;If you want to use a specific FTP, you can specify it here. Else we will use [FTP] section values
FTPServerIP=
FTPPort=
FTPLogin=
FTPPassword=
FTPFolder=

;To print the report automatically with the default printer configurer on SDS server, set Print
value to 1
Print=0

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
;The report below is the <filename>[DBExport].xml generated for ERP integration with all SQL data
formatted in separate attributes for easier processing by customers
[Report_6]
Enable=1
PageSize=Letter
```

```
templateFilePath=.\report_template[DB Export] (v2).xml
reportFolderPath=C:\Softthinks\Reports\Wipe
reportFileName={%DI%}_{%HARDWARE.SYSTEM_SERIAL%}_{%MODULE_XTRA[SDSWelcome].ASSET_ID%}_{%NOW%} [DB
export v2].XML
reportCreationTimeFormat=%Y%m%d_%H%M%S
deploymentDateTime=%m/%d/%Y %I:%M:%S %p

;To send the report y email, set SendByEmail value to 1 and fill [Email] section.
SendByEmail=0

;If you want to use a specific subject and/or message and/or receiver, you can specify them here.
Else we will use [Email] section values
;Both email subject and message can contains tags with the same grammar than for the template (see
at the end of this file)
EmailSubject=
EmailMessage=
EmailReceiver=

;To push the report to a FTP, set PushToFTP value to 1 and fill [FTP] section.
PushToFTP=0
;If you want to use a specific FTP, you can specify it here. Else we will use [FTP] section values
FTPServerIP=
FTPPort=
FTPLogin=
FTPPassword=
FTPFolder=

;To print the report automatically with the default printer configurer on SDS server, set Print
value to 1
Print=0

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
;The report below is CSV report Which replaces the XLS report generated by the ReportGenerator v1
[Report_7]
Enable=0
PageSize=Letter
templateFilePath=.\report_template.csv
reportFolderPath=C:\Softthinks\Reports\Wipe
reportFileName={%DI%}_{%HARDWARE.SYSTEM_SERIAL%}_{%MODULE_XTRA[SDSWelcome].ASSET_ID%}_{%NOW%}.CSV
reportCreationTimeFormat=%Y%m%d_%H%M%S
deploymentDateTime=%m/%d/%Y %I:%M:%S %p

;To send the report by email, set SendByEmail value to 1 and fill [Email] section.
SendByEmail=0

;If you want to use a specific subject and/or message and/or receiver, you can specify them here.
Else we will use [Email] section values
;Both email subject and message can contains tags with the same grammar than for the template (see
at the end of this file)
EmailSubject=
EmailMessage=
EmailReceiver=

;To push the report to a FTP, set PushToFTP value to 1 and fill [FTP] section.
PushToFTP=0
;If you want to use a specific FTP, you can specify it here. Else we will use [FTP] section values
```

```
FTPServerIP=
FTPPort=
FTPLogin=
FTPPassword=
FTPFolder=

;To print the report automatically with the default printer configurer on SDS server, set Print
value to 1
Print=0

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
;The report below is a PDF label based on HTML template (a HTML report is systematically generated
to convert it then to PDF) which can be automatically printed if needed
;To just generate an HTML report you should change reportFilename extension to HTML instead of PDF
[Report_8]
;Enable=0|1 to enable or not the generation of this report
Enable=0

;Custom report page size
PageSize=100mm x 75mm

;Custom report localization settings
language=English
reportCreationTimeFormat=%Y%m%d_%H%M%S
deploymentDateTime=%m/%d/%Y %I:%M:%S %p

;Custom report output folder
reportFolderPath=C:\Softthinks\Reports\Wipe

;templateFilePath is the path of the input file to use as template. The template file format has to
be file based (HTML,XML,CSV...)
;report_template_ex.html is matching SDSReport report output format (more graphical)
templateFilePath=.\label_template.html

;reportFilename is the filename of the report ot generate.
;Its file extension has to match the template file extension, excepted for PDF ouput which is
generated from HTML template
reportFileName=label_{%NOW%}.PDF

;To send the report y email, set SendByEmail value to 1 and fill [Email] section.
SendByEmail=0

;If you want to use a specific subject and/or message and/or receiver, you can specify them here.
Else we will use [Email] section values
;Both email subject and message can contains tags with the same grammar than for the template (see
at the end of this file)
EmailSubject=
EmailMessage=
EmailReceiver=

;To push the report to a FTP, set PushToFTP value to 1 and fill [FTP] section.
PushToFTP=0
;If you want to use a specific FTP, you can specify it here. Else we will use [FTP] section values
FTPServerIP=
FTPPort=
FTPLogin=
```

```

FTPPassword=
FTPFolder=

;To print the report automatically with the default printer configurer on SDS server, set Print
value to 1
Print=1

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
; Email settings common to all reports. This section has to be filled with your email account
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
[Email]
SMTPServer=
SMTPPort=
SMTPLogin=
SMTPPassword=
SenderEmail=
ReplyTo=

;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
; FTP settings common to all reports. You can specify different settings for each report in
[Report_x] section
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
[FTP]
FTPServerIP=
FTPPort=
FTPLLogin=
FTPPassword=
FTPFolder=

```


Command line

To generate a report/export at any time, you can use ReportGenerator.exe (SDKDB\selector\Reports\WipeReport\) command line, specifying either the deployment ID, the device Serial number or the device MAC address, the settings to access to the SDS SQL Database, and the report settings:

```
REPORTGENERATOR.EXE <DEPLOYMENT ID>[ <DEPLOYMENT ID>[...]] | /DEVICESN:<DEVICE S/N>[,<DEVICE S/N>[,...]] |  
/DEVICEMAC:<DEVICE MAC>[,<DEVICE MAC>[,...]]  
  /SQL:SQLDBName="<SQL database name>";  
    SQLServerIP=<SQL server IP address>;  
    SQLUserName="<SQL user name>";  
    SQLPassword="<SQL password>"  
  /REPORT:Template="<template file path>";  
    OutputFile="<output file path>";  
    Location="<location>";  
    [Language=<report language ("English" if not specified)>;]  
    [DateTime="<date time format>";]  
    [PageSize=<page size>;]  
    [SendByEmail;  
      EmailSubject="<email subject>;"  
      EmailReceiver="<email receiver>[,<EmailReceiver>[...]]";  
      EmailMessage="<email message>"]  
    [PushToFTP;  
      FTPServerIP=<FTP server IP>;  
      FTPLogin="<FTP login>;"  
      FTPPassword="<FTP password>"  
      [FTPFort=<FTP port>;]  
      [;FTPFolder="<FTP folder>"]]  
  [/REPORT:... [/REPORT:...]]  
[/EMAIL_SETTINGS:  
  SMTPServer=<SMTP server>:<SMTP port>;  
  EmailLogin=<Email login>;  
  EmailPassword=<Email password>;  
  SenderName=<Sender name>;  
  SenderMail=<Sender mail>;  
  ReplyTo=<Reply to mail address>]
```

Testing under Windows (after deployment)

Windows Test Manager will allow you to run tests on the computers in Windows environment, for example after repair, and generate a report:

- Check Windows environment
 - Device manager
 - System files signature
 - System events
- Check hardware
 - Microphone
 - Speaker
 - Headset
 - Webcam
 - HDD/SSD
 - Keyboard
 - Any other component through BurnInTest
- Network settings
 - LAN
 - WAN
- 3rd party custom tests

You can customize the tests and add your own tests through SDS Console ([Settings > Database > Test settings](#)).

Windows Test Manager can be automated and perform the tests automatically if they don't require user interaction.

Windows check

This window will check your device manager if all the devices' drivers are signed and if there are no error:



In case you have an error, the device manager will open.

To check if the drivers are signed. To get more details click on "View log"

To check if there are no error in the event viewer. To get more details click on "Open event viewer"

Multimedia

In this window, you will check the multimedia test.

- Sound : wave, midi, mp3
- Mic : record and listen to it
- Webcam: record and watch it.



In manual mode, you need to test EVERYTHING to go to the next step

Network Settings

In this window, you will check the networks.

- The available wireless networks
- All other networks

You can also click on « **Edit** » if you need to enter the security key



BurnInTest (OEM custom test)

You can launch BurnInTest directly and automatically from WTM. See [BurnInTest](#) for more details.

The screenshot displays the Windows test manager interface. On the left, a sidebar lists various tests: windows check, multimedia, network settings, BurnInTest (highlighted), and hddcheck. The main area shows the results of the BurnInTest - CPU test. A table lists the test results:

Test	Threads	Millions of Operations Executed	Verified
General:	0	4742.0	4742.0
Floating Point:	4	804.9	804.9
Extensions:	0	0.0	0.0

Below the table, a 'Stop BIT' button is visible. The BurnInTest - 3D Test results show 49.68 fps (294x171x32) (4x Multisample) and HAL (hw vp): NVIDIA GeForce GT 640. The interface also includes a 'Test log' section on the right.

At the end of the test, the process generates a log file.

The screenshot shows the Windows test manager interface after the BurnInTest has completed successfully. A large green 'Success' message is displayed in the center. The 'Test log' section on the right shows the following information:

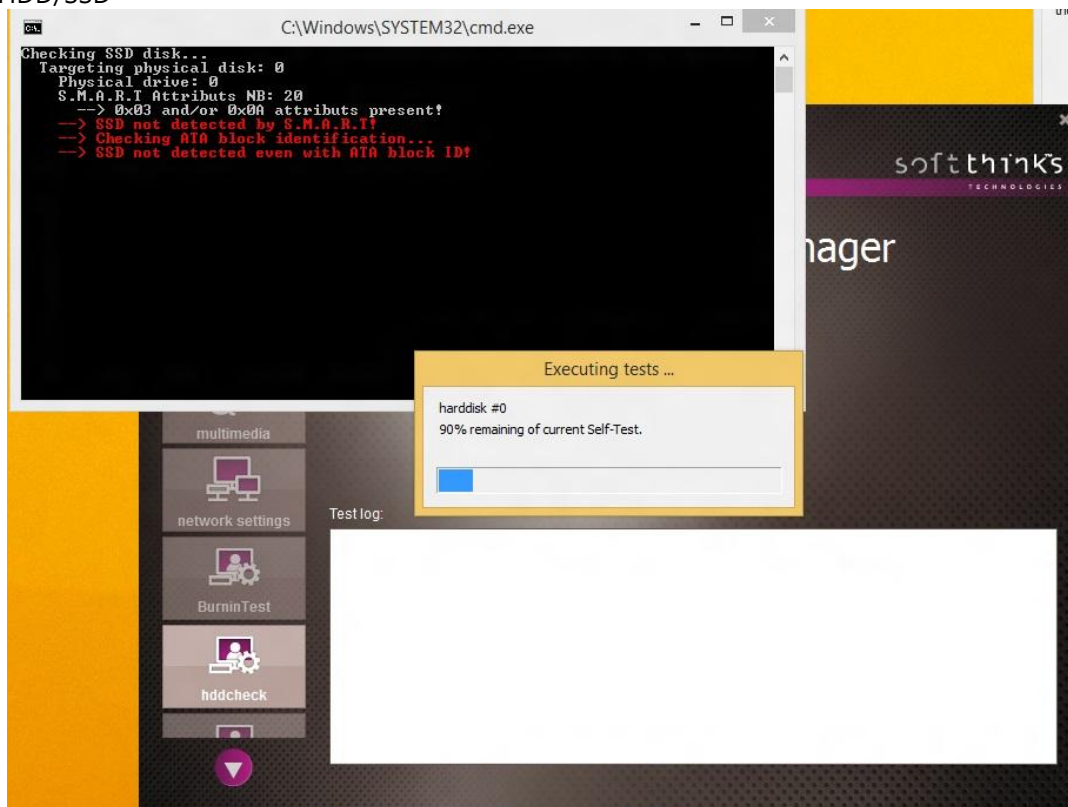
```

PassMark BurnInTest Log file - http://www.passmark.com
=====
Date: 02/13/15 10:58:43
BurnInTest V8.0 Pro 1019

System summary:
Windows 8.1 build 9600 (64-bit),
1 x Intel(R) Core(TM) i3-2120 CPU @ 3.30GHz,
5.9GB RAM,
NVIDIA GeForce GT 640.
  
```


HDD Check (Custom test)

Check you HDD/SSD

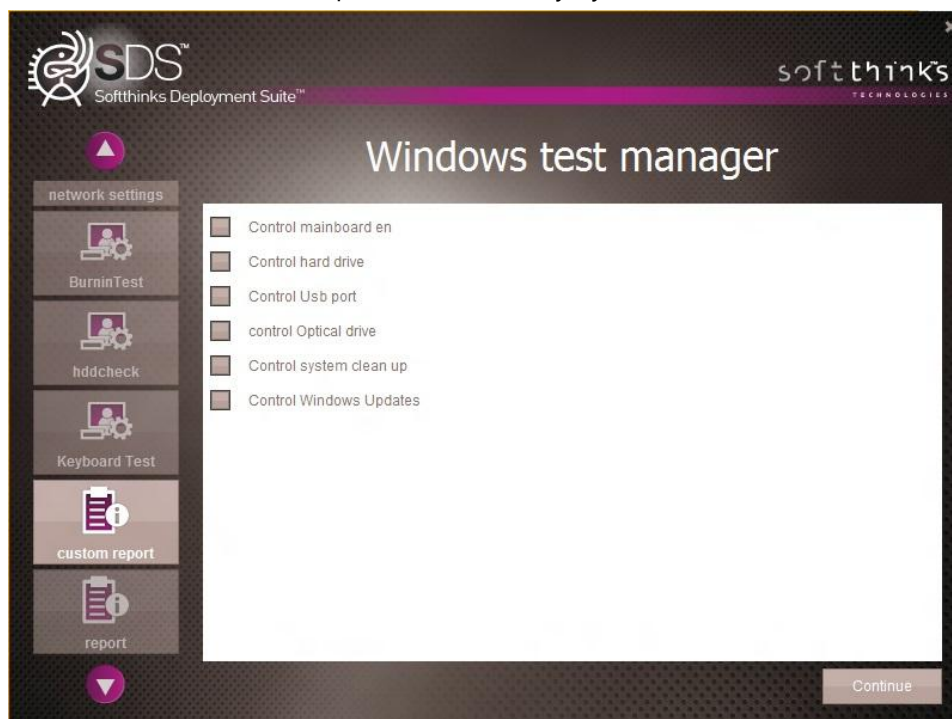


Keyboard Test

Keyboard test allows you to check each key of your keyboard.

Custom report

The « Custom report » ensures that all actions are performed correctly by the technician:



Report

The screenshot shows the 'Windows test manager' window within the 'Softthinks Deployment Suite™'. The window has a dark theme with a sidebar on the left containing icons for 'network settings', 'BurninTest', 'hddcheck', 'Keyboard Test', 'custom report', and 'report'. The main area is titled 'Windows test manager' and contains a 'Name:' field with the value 'report', a 'Comment:' text area, and a 'Test result:' section. The 'Test result:' section displays the following information:

- Device Manager: Found device(s) with error
- File Signature: OK
- Event Log: OK
- Multimedia:
 - AUDIO test: Passed
 - MICRO test: No input or output device found!
 - WEBCAM test: No webcam detected!
- Network:
 - LAN test: The LAN tests have not been run!
 - WiFi test: The WiFi tests have not been run!
- Custom test:
 - burnintest Passed
 - hddcheck Passed


At the bottom right of the window is a 'Finish' button.


In this window you have to name the report that was created. You can also add a comment.

If you click on “finish”, a report (**WindowsTestManager log.xml**) will be created and sent to the server.

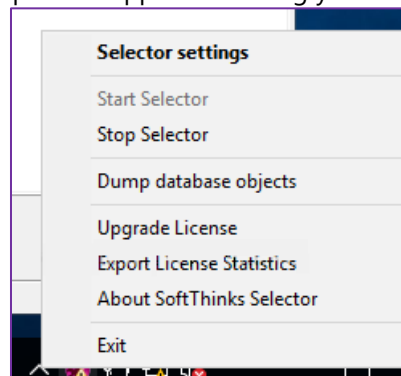
In auto mode all windows are switched automatically and this windows is automatically filled and logs are uploaded on server .

Interacting with Selector service on SDS Server

During SDS installation, a service called "Selector" ("SelectorSRV.exe" or "SelectorSRV_X64.exe" in the services list) is configured to start automatically with the OS. This service is managing the communication between the devices processed, the SDS server and the SQL database. A SelectorSRVG.exe process is automatically run on startup to interact with the service. It displays an icon  in the system tray area of the taskbar. If this icon is not present, double-click on SelectorSRVG.exe executable located in D:\remoteInstall\SDKDB\selector and wait for the icon to appear.

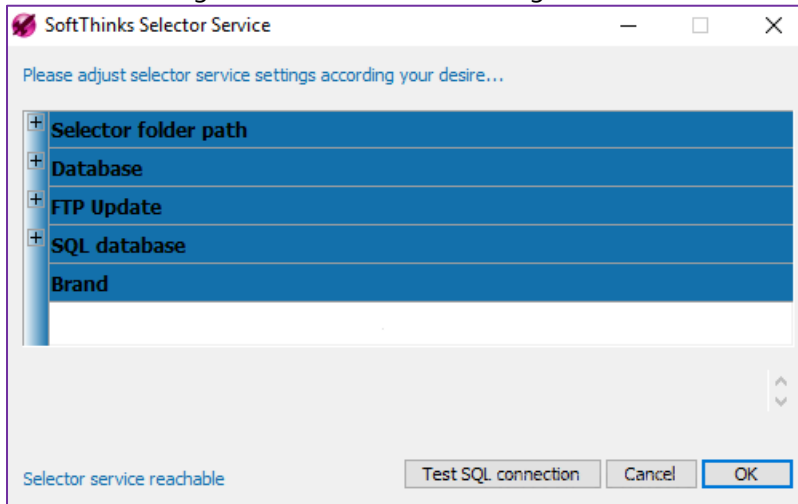
In order to avoid production interruptions and data loose, Selector is using a memory buffer when the connection to the SQL DB is temporary lost, typically during short network disconnections. A warning overlay on the icon  indicates that we are currently disconnected from SQL DB. **While this indicator is visible you should not stop the service or shutdown/restart the SDS server else all the data buffered in memory will be lost.**

When you click on the system tray icon, a popup menu appears allowing you to interact with Selector service:

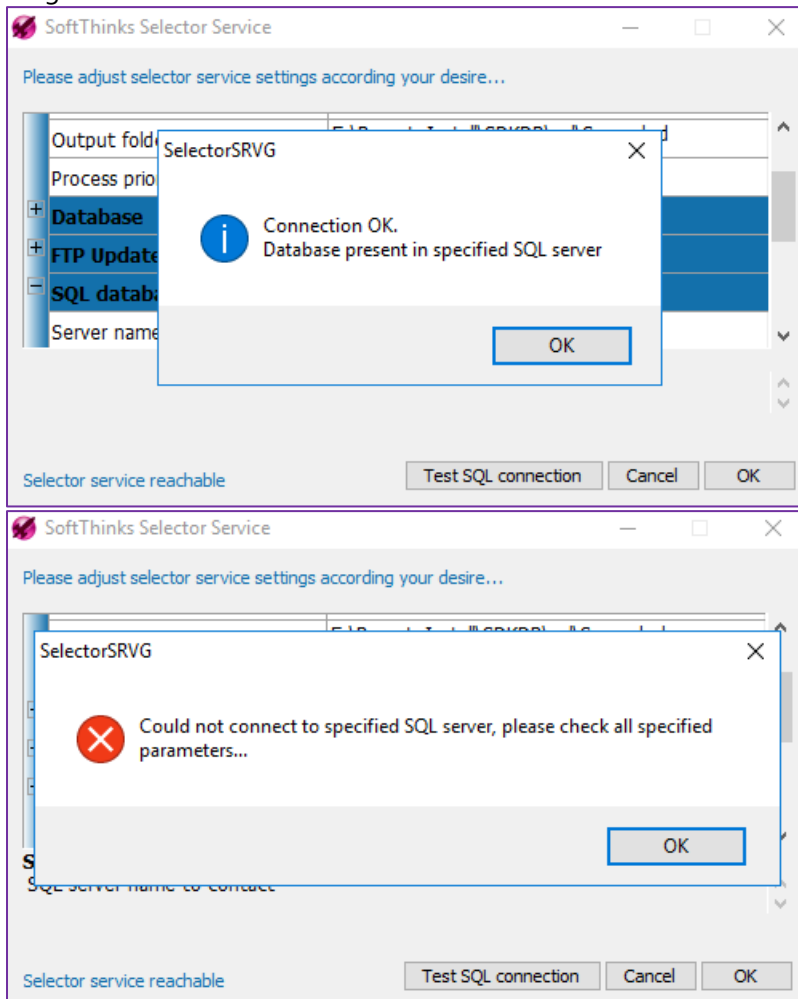


Modifying Selector settings

The first option, allows you to review or change the Selector service settings:



You have also a button "Test SQL connection" at the bottom allowing you to verify that you can access the SQL database defined in "SQL database" setting:



Selector folder path

Selector folder path	
Database path	E:\RemoteInstall\SDKDB
Login (optional)	
Password (optional)	
SPL Input folder	E:\RemoteInstall\SDKDB\spl\Temp
Scanning period ...	10
Max SPL file by p...	200
Success folder name	Succeeded
Error folder name	Error
Output folder	E:\RemoteInstall\SDKDB\spl\Succeeded
Process priority	Below normal

- Database path: path to SDS database structure
 - Login: Optional login to access the database path (for network shared database)
 - Password: Optional login to access the database path (for network shared database)
- SPL Input folder: path where to search for SPL files to process
 - Scanning period (1-100 Sec): Time between two input folder scan
 - Max SPL file by period (1-1000): Maximum amount of SPL files which can be used on a scan
 - Success folder name: name of the folder where SPL files are moved to after having successfully processed
 - Error folder name: name of the folder where SPL files are moved to when we failed to process
- Output folder: path to the folder where ini files are created
- Process priority: this is the thread priority used to translate SPL files:
 - Highest
 - Above normal
 - Normal
 - Below normal
 - Lowest

Database

Database	
Dump all objects automatically	<input checked="" type="checkbox"/> (Yes)
Dump all objects at ...	<input checked="" type="checkbox"/> (Yes)
Dump all objects info	<input checked="" type="checkbox"/> (Yes)
Snapshot period ...	60
Bundle all XP version	<input checked="" type="checkbox"/> (Yes)
Keep '.SDK' files	<input checked="" type="checkbox"/> (Yes)
Allow duplicated Article code	<input type="checkbox"/> (No)

- Dump all objects automatically: automatically create a database objects snapshot after a DB modification
- Dump all objects at service start: automatically create a database objects snapshot at service startup
- Dump all objects info: automatically create a database objects snapshot every <x> hours
 - Snapshot period (60-10080 min): Delay between 2 snapshots (from 1h to 1 week)
- Bundle all XP version: bundle all XP OS version as one unique OS (less restrictive)
- Keep '.SDK' files: Debug purpose only setting used to keep translation codes files used to create INI files
- Allow duplicated Article code: keep all items that have the same article code instead stopping on first one found


FTP Update

Set up this part to update your BIOS, APPS, DRV from FTP.

FTP Update	
IP	
Login	
Password	
Port	21

- IP: FTP IP address
- Login: Login to access to the FTP
- Password: Password to access to the FTP
- Port: TFP port (default = 21)

SQL Database

SQL database	
Server name	<SQL server IP / URL>
Login	<The SQL login to access your database>
Password	*****
Database name	<Your SQL database name>
Encryption	None
Direct transfer	<input type="checkbox"/> (No)
Generate report	Always
Report type	 WipeReport
Batch of deployment	<input type="checkbox"/> (No)

- Server name: SQL server hosting the SQL DataBase
- Login: login to access to the SQL DataBase linked to this SQL server
- Password: password to access to the SQL DataBase linked to this SDS server
- Database name: name of the SQL DataBase linked to this SDS server
- Encryption: use or not communication data encryption
- Direct transfer: force to transfer immediately data to SQL
- Generate report: Generate report(s) systematically at the end of all process / only after a successful process / never
 - Report type: Deprecated. You should not change this setting
 - Batch of deployment: Generate reports

Starting/Stopping Selector

Selector is automatically started with the OS so you should not have to stop or start the service. Those functions should be used only if Softthinks support ask you to do so. Except in this case, you should never use them.

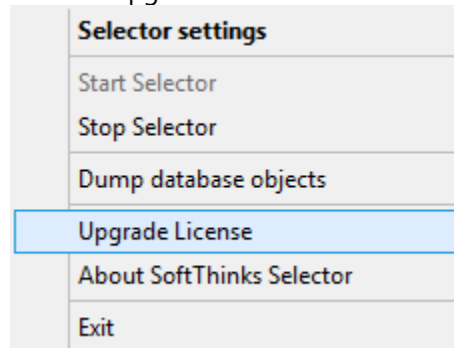
Dumping database objects

This is an internal feature which you should not use, except if asked by our support team.

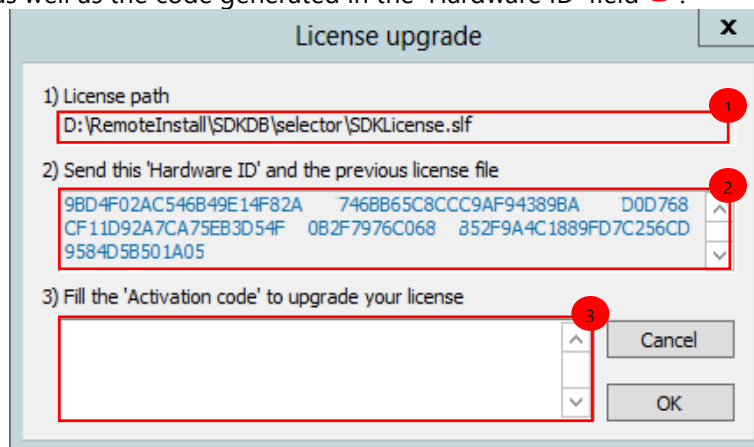
Reactivating the License

Once your license has expired, you can reactivate it by following the instructions below:

1. In the contextual menu appearing, click on "Upgrade license":



2. Send an email to your account manager with the SDKLicense.slf file located in the 'License path' ¹ indicated in the dialog screen below, as well as the code generated in the 'Hardware ID' field ²:



3. Enter the code which will be sent to you in the 'Activation code' field ³.

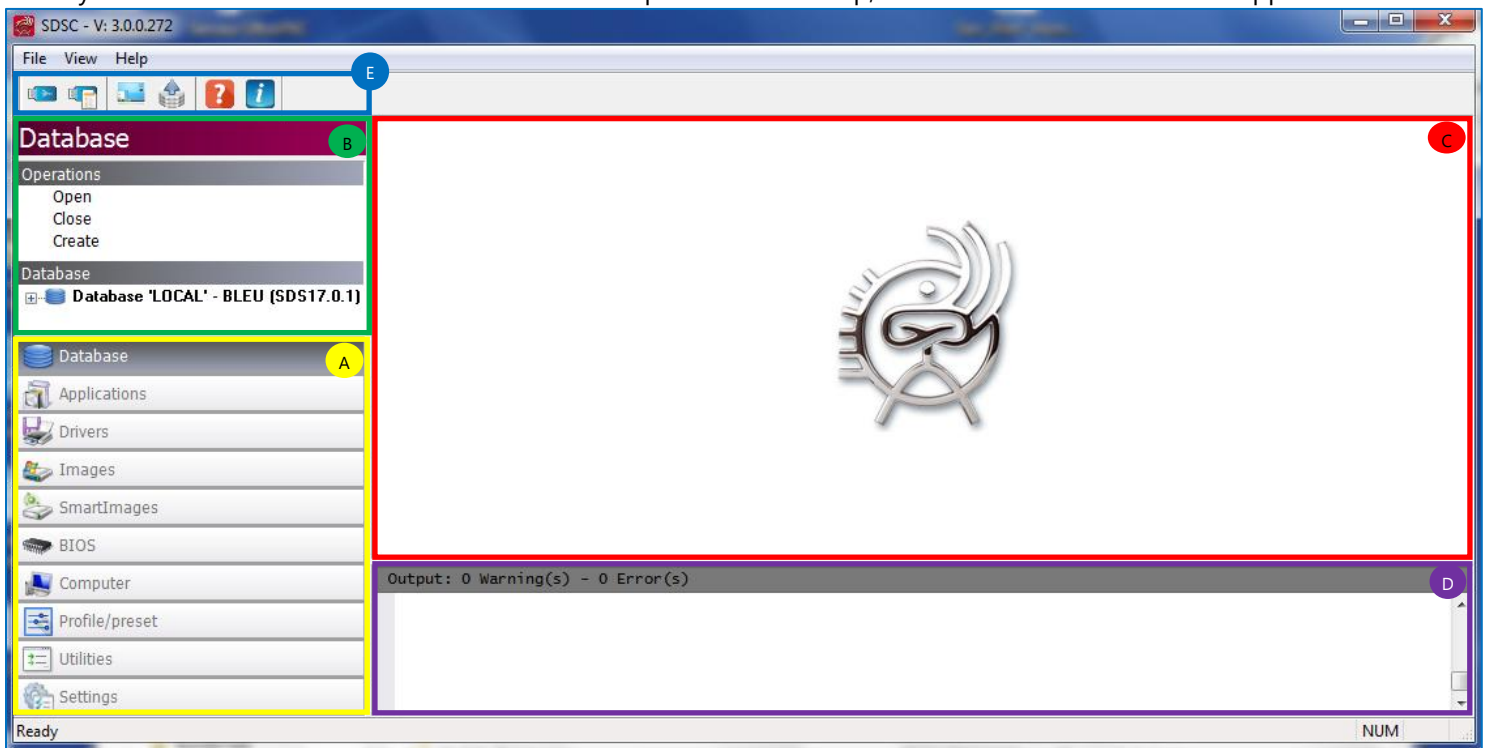
Managing SDS database and components through SDS Console (SDSC)

The SDS console is installed by default with SDS installer on SDS server, and you can also install it with a dedicated installer on other systems.

The SDS console allows you to administer and configure your SDS database, including the images, drivers, applications, and offers some useful tools.



- Multithreaded Interface – Accomplish other tasks while waiting for slow processes to complete.
- Visible Logging Console – View logs in real-time and track processes as they occur.
- Workflow-based Configurations – Each process uses a consistent workflow so no dependent steps can be omitted.

When you double-click on the “SDS Console” shortcut put on the desktop, the SDS Console interface will appear:



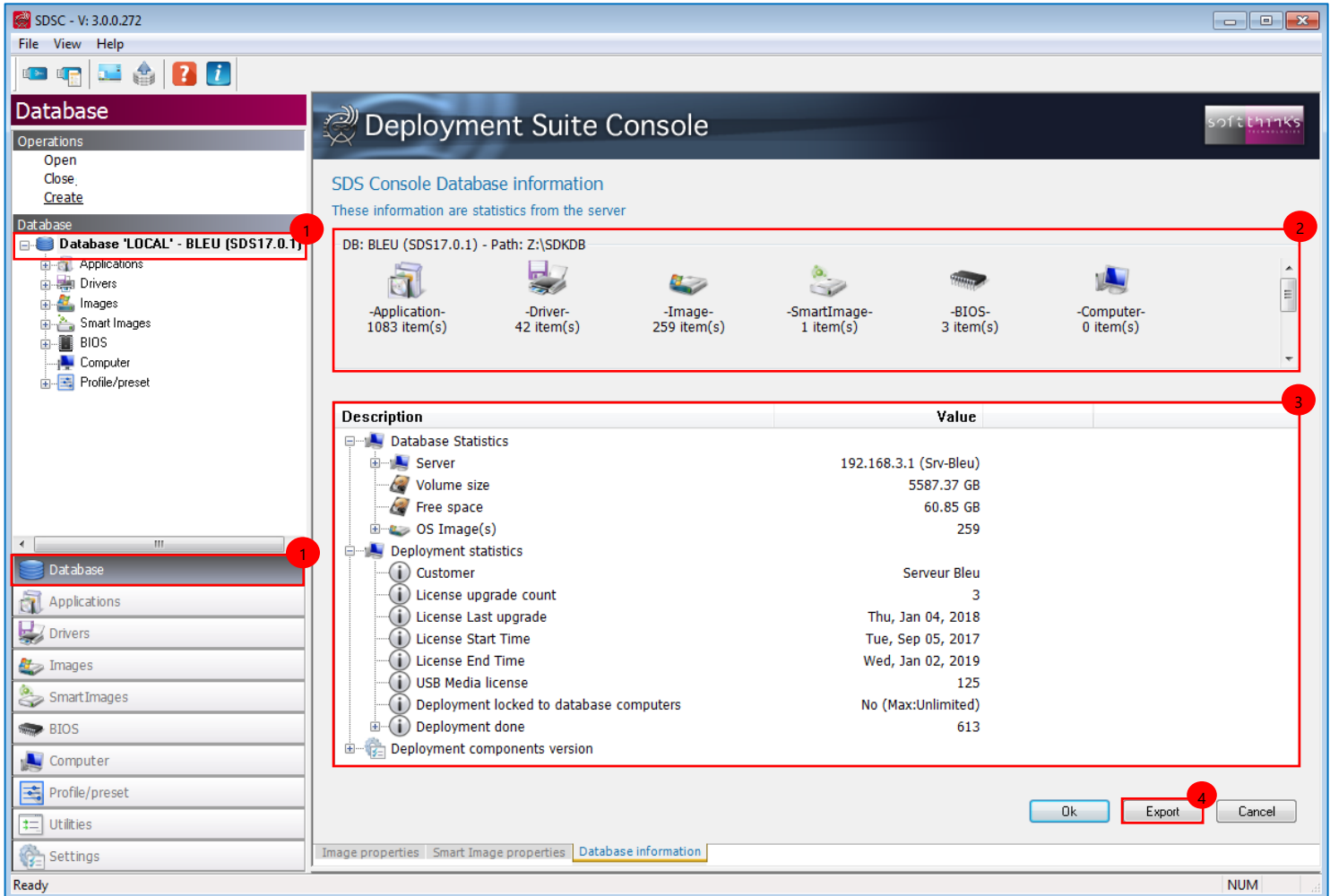
This user interface is split into different areas:

- The main menu (A) on the bottom left which allows you to select a set of tools to use. Each tool is tied to a specific task, such as Database, Applications, Drivers, Images, SmartImages, BIOS, Computer, Profile/Preset, Utilities or other Settings. Click on a tool to select it and bring up more options.
- The sub menu (B) above is dynamically updated depending on the item chosen in the main menu and will offer you the operations that can be performed with this element (“Open”, “Close” and “Create” for the Database as shown in the screenshot above). Select an option here to open a workflow tab in the main window.
- The main window or Operations Workflow Screen (C) on the right. Each operation in use receives a separate tab on this screen allowing multiple tasks to be completed simultaneously. Once a Tool Operation or Object has been selected, a screen opens to allow the System Administrator to perform other actions through a workflow

- The output area  on the bottom right where all status messages will be logged. The information contained here can be printed, exported, copied to the clipboard or cleared. Right click in the window for all possible options.
- The toolbar 

Database

When you select “Database” ¹ (from the tab or from the submenu tree-view), you will get its statistics, meaning how many applications, drivers, images, smart images, BIOS components, Computer, and profiles/presets are stored in the database ², as well as other information about the server itself, the deployments made and the SDS application components versions ³:



The « Export » button ⁴ allows you to export this information into an HTML or XML file.

Hint – SDS allows more than one database to be open during a session.

You can display the repartition of the images per OS by expanding the "OS Image(s)" node:

Description	Value
Database Statistics	
Server	192.168.3.1 (Srv-Bleu)
Volume size	5587.37 GB
Free space	60.85 GB
OS Image(s)	259
Windows 7	3
Windows 7 64	31
Windows 8	4
Windows 8 64	71
Windows 10	8
Windows 10 64	137
MacOS X	4
Deployment statistics	
Customer	Serveur Bleu
License upgrade count	3

Scroll down to display all Deployment statistics which include License information and all the deployments done per OS with their average deployment time:

Description	Value
Deployment statistics	
Customer	Serveur Bleu
License upgrade count	3
License Last upgrade	Thu, Jan 04, 2018
License Start Time	Tue, Sep 05, 2017
License End Time	Wed, Jan 02, 2019
USB Media license	125
Deployment locked to database computers	No (Max:Unlimited)
Deployment done	613
Windows 7	3 00h17m59s
Windows 7 64	41 00h07m54s
Windows 8	9 00h09m04s
Windows 8 64	33 00h18m28s
Windows 10	4 00h05m57s
Windows 10 64	486 00h17m27s
MacOS X	4 00h29m43s
Deployment components version	

If you expand "Deployment components version", you will obtain the list of all the components with their version number when applicable and their CRC:

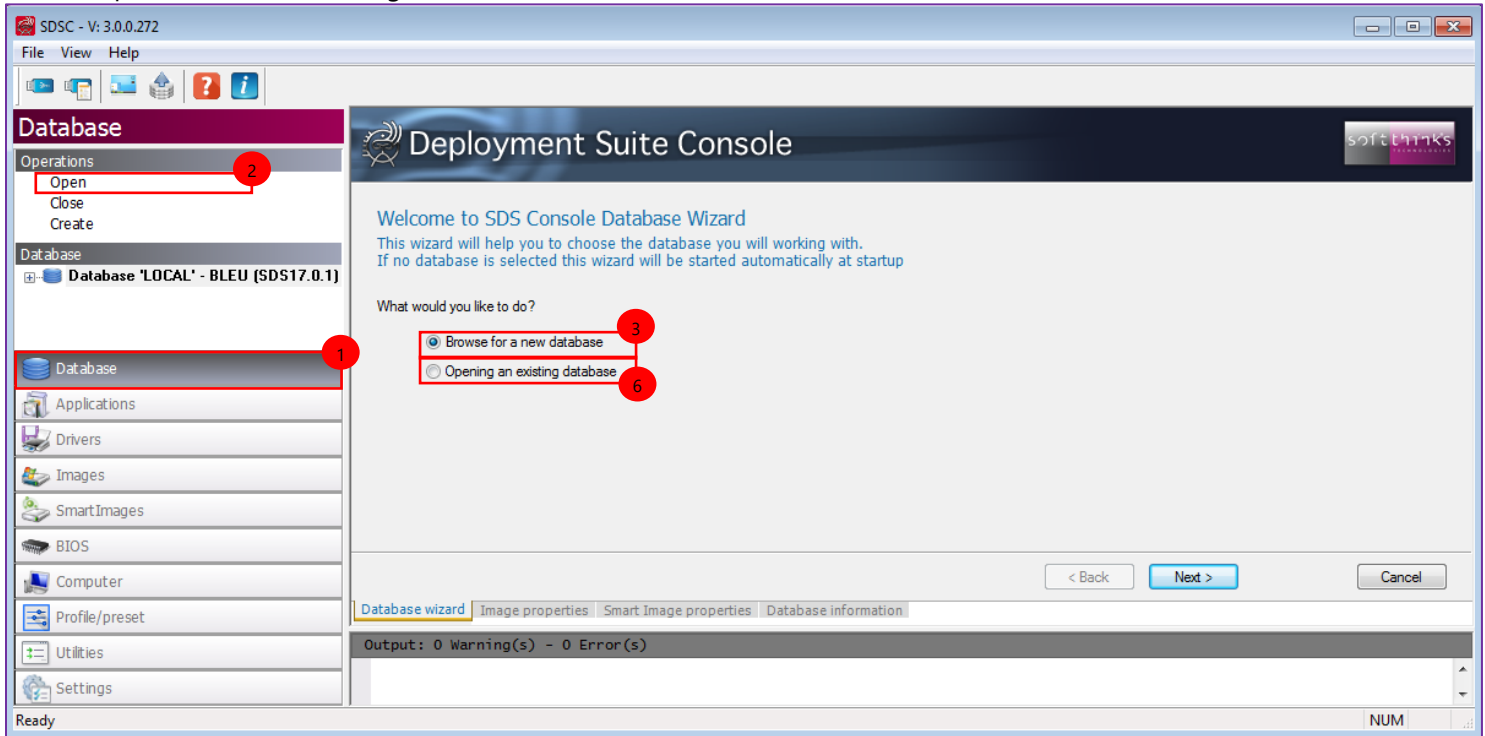
Description	Value
Deployment components version	
DEPLOY64\BATCH.ini	- 1bed0f1c
DEPLOY64\BurnInTest\2d.bitcfg	- b9eb9ead
DEPLOY64\BurnInTest\BITCertificateTemplate.html	- 9e789ea5
DEPLOY64\BurnInTest\BITErrorClassification.txt	- ba97cbd5
DEPLOY64\BurnInTest\Battery_Capacity_Plugin.exe	1.0.0.3 820d0f3b
DEPLOY64\BurnInTest\BurnInTest.url	- ebc1d687
DEPLOY64\BurnInTest\D3DCompiler_43.dll	9.29.952.3111 5201927b
DEPLOY64\BurnInTest\D3DX9_43.dll	9.29.952.3111 4374aa0f
DEPLOY64\BurnInTest\DirectIo32.sys	- 3b617ef3
DEPLOY64\BurnInTest\DirectIo64.sys	- c6169032
DEPLOY64\BurnInTest\Endpoint.exe	8.0.1001.0 fff93fde

Opening a database (“Open” operation)

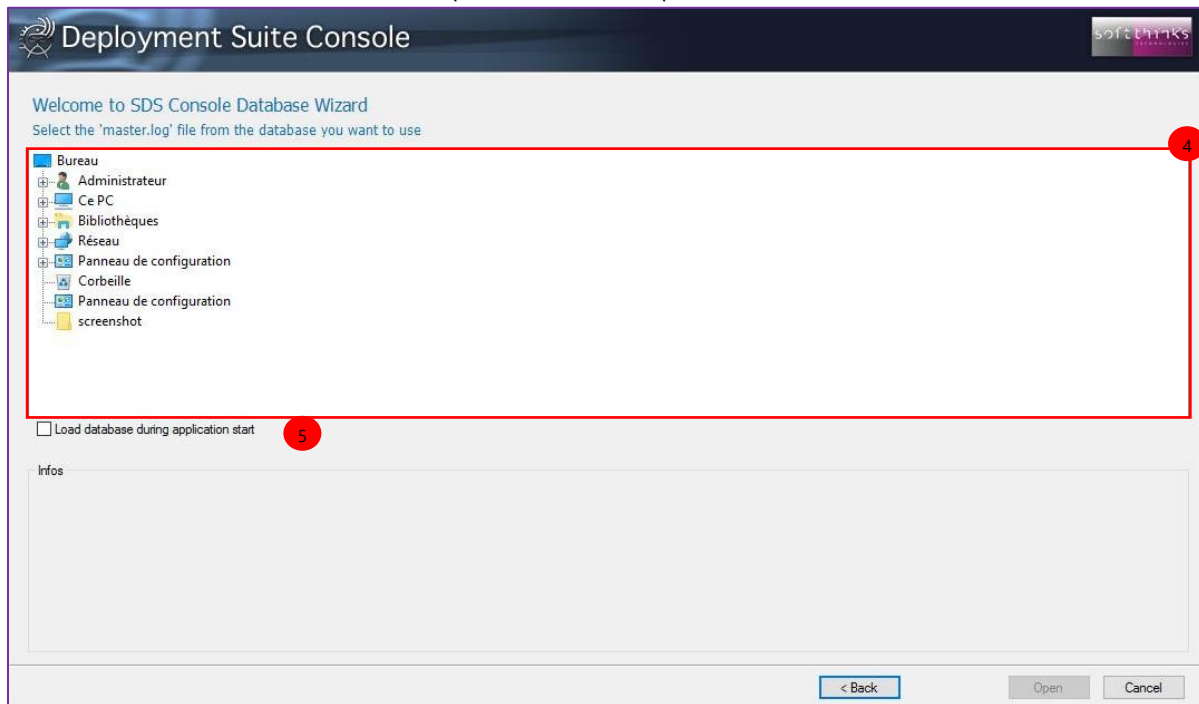
After having installed and configured SDS, the first step will consist of opening the database created during the installation.

Browse for a new database

1. Click on « Database » tab ¹, then on the « Open » operation ², and select the « Browse for a new database » option ³ before clicking on the « Next > » button:



2. Browse for the MASTER.LOG file in the D:\REMOTEINSTALL\SDKDB installation folder in the tree-view ⁴:

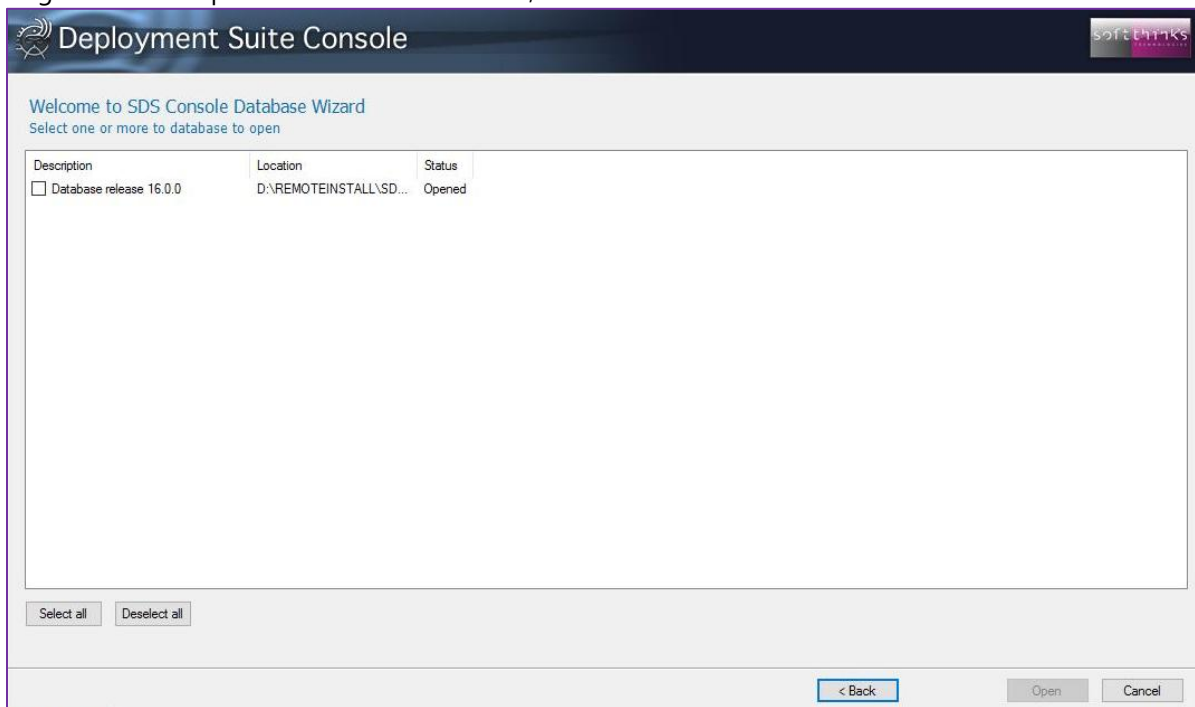


3. Check the « Load database during application start » option ⁵ to automatically open this database during the console startup, and then click on the « Open » button.

Note: Only databases that have not previously been opened by this installation of SDS should be opened with this option. Afterward, the location will be remembered in the history kept by SDS and will appear in the Open an Existing Database list.

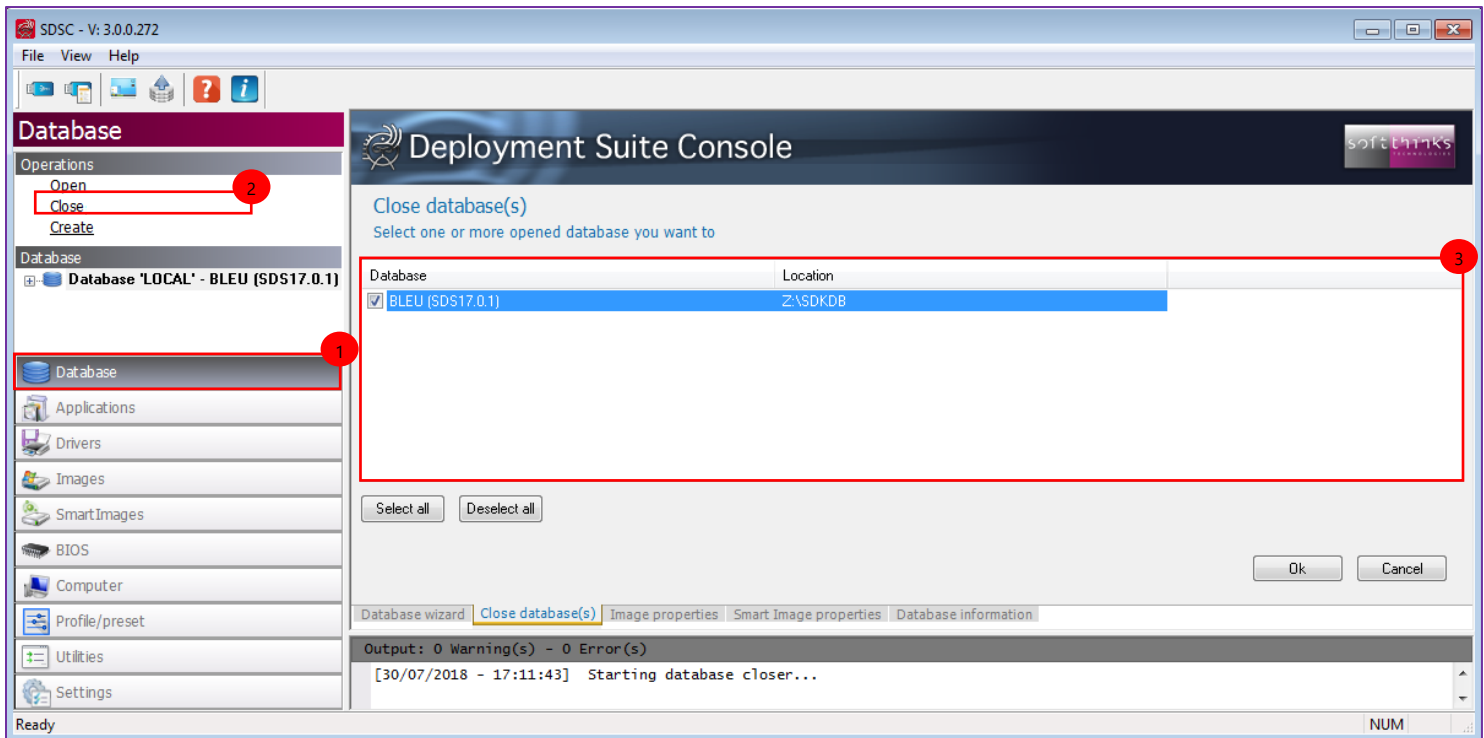
Open an Existing Database

If you want to open a database that has been previously opened by this installation of SDS, use the “Opening an existing database » option **6** in the first screen, and select the database in the list shown:



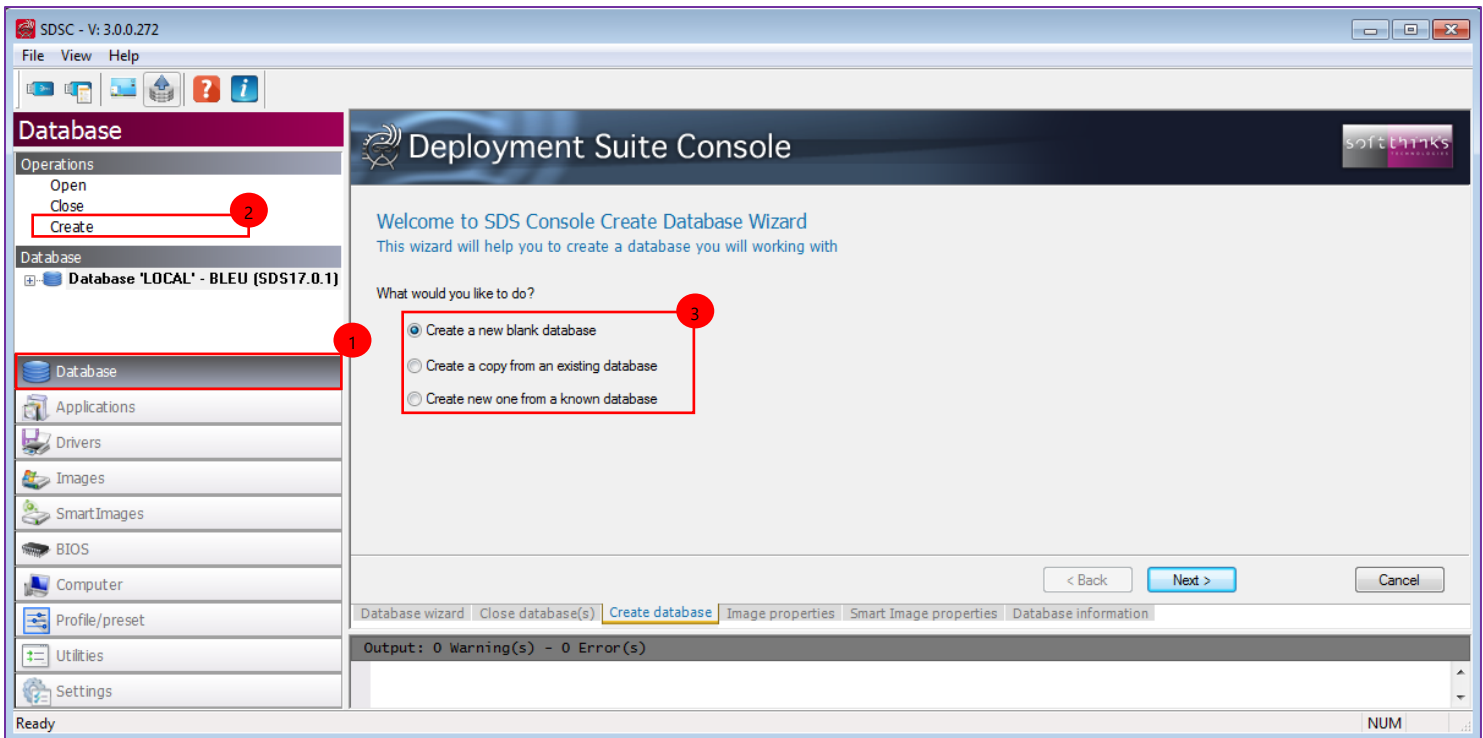
Closing a database ("Close" operation):

In order to close a database, click on the "Database" tab ¹, then on the "Close" operation ², and select the database you wish to close ³:



Creating a database (“Create” operation):

To create a database, click on the « Database » tab ¹, then on the « Create » operation ², and select one of the options offered ³:

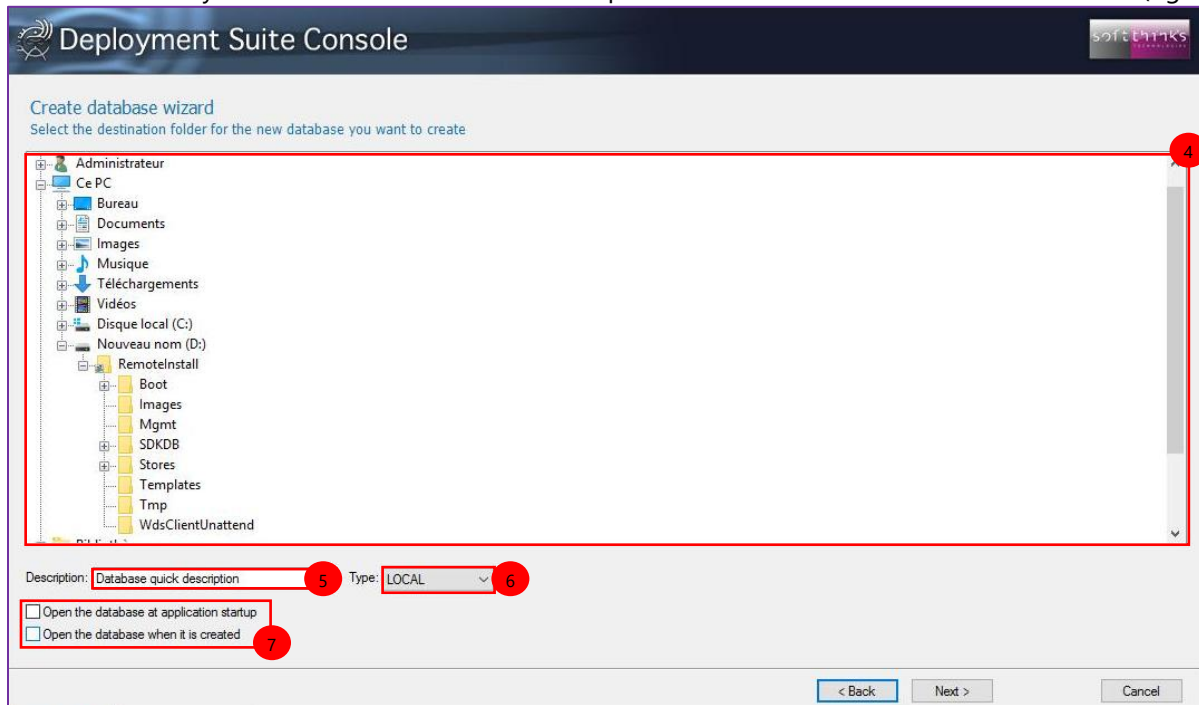


There are several ways to create a database for use with SDS:

- **Create a new blank database:** Only use this feature if you are starting completely fresh – there is no need to do this if you have converted a database from the previous release of SDS.
- **Create a copy from an existing database:** This allows the System Administrator to browse for an existing database and copy it to this instance of SDS.
- **Create new one from a known database:** This allows the System Administrator to make a copy of a database from an entry in the database history, and copy it as a new database to work with. This only works for databases which have previously been opened by SDS.

Creating a blank database

1. After having selected "Create a new blank database" and clicked on "Next >", select the "root location" where you would like to create your database in the tree-view ⁴ presented in the Create Database Wizard tab (right pane):



2. Specify a description ⁵ for the database in order to identify it.
3. Indicate the type of database ⁶. This can either be Local or Server.
4. Two options exist for how the database can be opened ⁷: during launch of the application or after creation of the database. The database will automatically be created in a subdirectory called SDKDB in the location you choose. For example, you can map a drive letter to a network share which will hold the database (in this example, X:) and SDS will create the necessary files and folder structures under X:\SDKDB.

Hint – Large databases take a long time to load. If you are pointing to a server database this may increase the load time due to network traffic and connection speed. It may be desirable to turn off the option "Open the database at application startup" in these situations.

5. When the database is created successfully, the new database will be shown (See [Database](#) screenshot) in the "Database" portion of the interface (left side, Database object view) when it is loaded.

Applications

You can explore the applications you have added or imported by clicking on the “Applications” tab ¹, or directly on the “Applications” object in the tree-view ²:

The screenshot shows the Deployment Suite Console interface. On the left, the 'Applications' tab is selected in the tree-view. The main area displays 'SDS Console Application properties' with a table of applications. A red box highlights the table, and another red box highlights the 'Details' section below it. A red box also highlights the 'Next >' button at the bottom right.

Description	Language	OS
3Dmark	Multi	Multi
7zipx64	Multi	Multi
7zipx86	Multi	Windows XP - Windows 7 - Windows 8
amd	Multi	Windows 7 - Windows 8
applications	Multi	Multi
CheckDPK	Multi	Windows 8 - Windows 8 64
chrome	Multi	Windows 7 64
Cumulative Update for Windows 10 (KB3081436)	Multi	Windows 10
Cumulative Update for Windows 10 for x64-based Systems (KB3081436)	Multi	Windows 10 64
DRIVER-PACK: Latitude 10 - ST2e	Multi	Windows 8
Filezilla	Multi	Multi

Details

- Path: Z:\SDKDB\APPS\MUL\APP000880
- Priority: 50
- Size: 204.07 MB
- Importation date: 2015/06/24 - 13:45:46
- Reboot: No

Next > Cancel

Database wizard | Close database(s) | Create database | Image properties | Smart Image properties | Application properties | Database information

Output: 0 Warning(s) - 0 Error(s)

When you select an application in the list ³, you will see all of its details below ⁴, including its path that you can open by clicking on the link ⁵.

Click on the “Next >” button ⁶, or double click on the application in the list, to edit its properties:

Deployment Suite Console

SDS Console Application properties

Application information

Application(s)	Command line
amd-catalyst-omega-14.12-with-dotnet45-win8.1-32bit.exe	

Basic options

Description	amd
Article code	
Date	24/06/2015
Size (MB)	204.07
Priority	50
Language	Multi
Supported OS	<input type="checkbox"/> (Specific OS)
Specific OS	Windows 7- Windows 8

Advanced options

< Back Save Cancel

- **Description:** Name of the selected application that you want to display during the applications selection (by default this is filled with the name of the folder containing the application). You can change this name to whatever you want.
- **Article code:** Unique identifier used to identify the application component / the part number used in the SPL file to designate the application. (This is not commonly used.)
- **Date:** Can be the date when the application is added into the database (so the current date by default) or the release date of the application.
- **Size:** Size of the application calculated from the file size.
- **Priority:** Allows you to install applications in a specific order (between 0 for the highest priority to 99 for the lowest one).
- **Language:** Language of the application (“Multi” to allow the application to be used for multiple languages, or else the name of the language supported).
- **Supported OS:** Either “Multi OS” (by default) to allow the application to work on all platforms, or else specific OS. When you uncheck “Multi OS”, you can check all the OS supported in the dropdown list appearing in Specific OS line below:

Supported OS

Specific OS

Advanced options

Specific OS

- ☒ Windows 7
- ☐ Windows 7 64
- ☐ Linux
- ☐ Windows 2000
- ☐ Windows XP
- ☐ Windows XP Pro

Note: Make sure to uncheck Windows 7 if it is not going to be included as a supported OS as it is checked by default when you uncheck “Multi OS”.

Scroll down to edit the "Advanced options":

Advanced options	
Type	Undefined
Class	Communication devices_system components
File version	1
Delay 1 (sec)	0
Delay 2 (sec)	0
Always install	<input type="checkbox"/> (No)
Audit install	<input type="checkbox"/> (No)
CIS install	<input type="checkbox"/> (No)
End user Install	<input checked="" type="checkbox"/> (Yes)
Wait child install	<input type="checkbox"/> (No)
Copy to CD/DVD	<input checked="" type="checkbox"/> (Yes)
QFE	<input type="checkbox"/> (No)
Reboot 1	<input type="checkbox"/> (No)
Reboot 2	<input type="checkbox"/> (No)
Delete application	<input type="checkbox"/> (No)
Use all PNPs	<input type="checkbox"/> (No)

Supported OS
These are possible operating system allowed to start the component

< Back Save Cancel

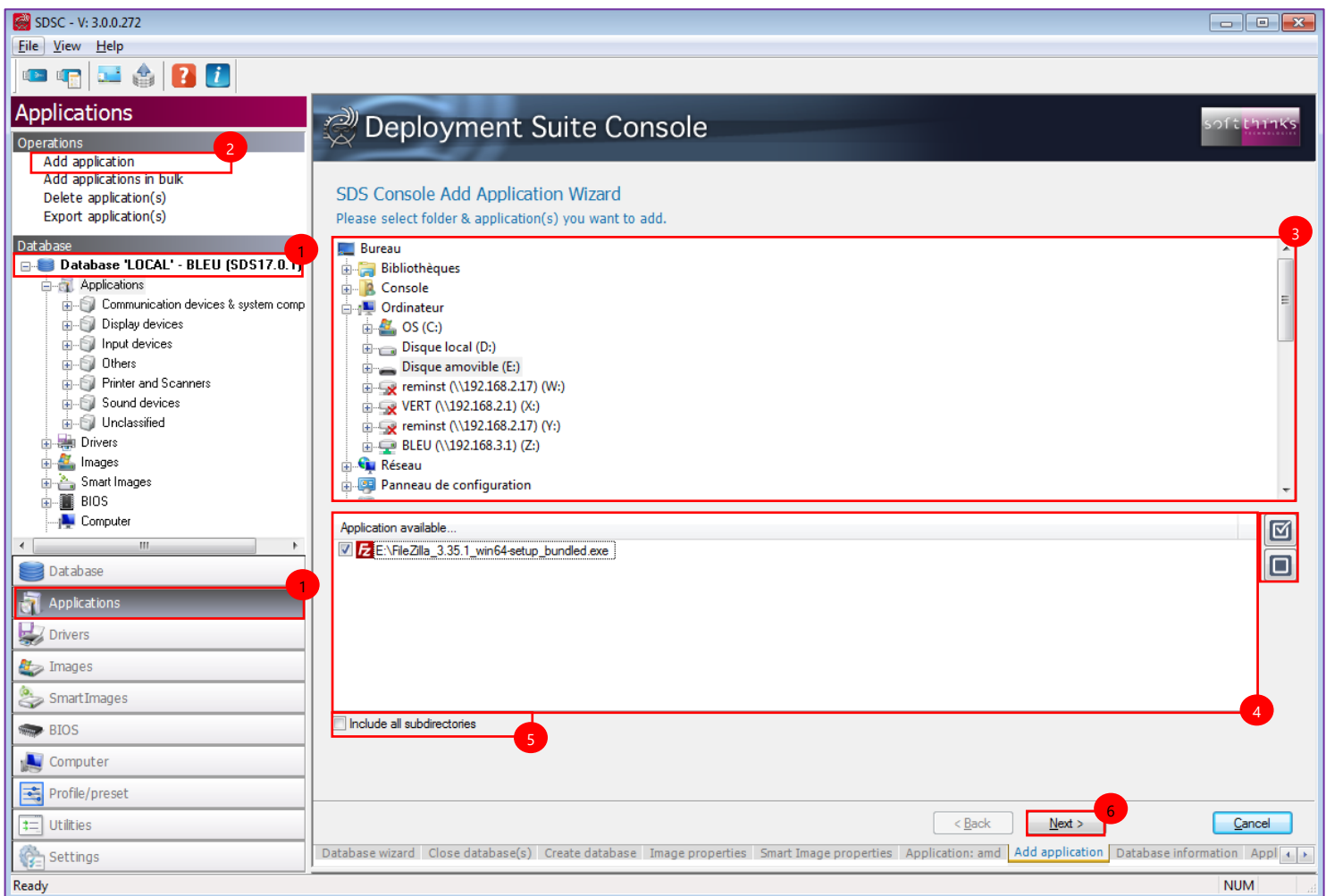
- **Type:** Application package type (Undefined by default). Can be "Undefined", "Classic", "Driver", "Bundle", "Microsoft KB". The list of categories can be modified in [Application settings](#).
- **Class:** Application class in which the application could be classified (Undefined by default). Can be "Undefined", "Communication devices & system components", "Input devices", "Printer and Scanners", "Display devices", "Sound devices", "Others". This list can be modified in [Application settings](#).
- **File version:** Used to denote the version of the application package (1 by default)
- **Delay 1 (sec):** Delay in seconds before the application will execute (0 by default). This is useful for padding the application startup.
- **Delay 2 (sec):** Delay in seconds after executing the application and continuing to the next one (0 by default). This is useful for padding the application termination if some processes are slow to complete after the application exits.
- **Always install:** Always install this application and automatically include in all downloads ("No" by default).
- **Audit install:** Turn on to install the application in audit mode otherwise it will be performed during mini-setup ("No" by default).
- **CIS install:** Application can be installed for Custom Image Solutions style images/downloads ("No" by default).
- **End user install:** Application is displayed in the Apps and Drivers Recovery interface ("Yes" by default).
- **Wait for child install:** Prevents ASEXEC from executing the parent process and proceeding if there are still child processes active. This is required for some installer engines that use child processes ("No" by default).
- **Copy to CD:** Copy the application to the Apps and Drivers Recovery CD. Choose this option if the application will be delivered to customer with original installation media ("Yes" by default).
- **QFE:** If the application being installed is a QuickFixEngineering application (aka Hotfix), use this option ("No" by default). This option adds 1000 added to the Priority value (normally 0-99) ensuring that QFEs are grouped at the very end of application installation order. All QFEs are installed in the same grouping ordered by priority after all standard applications have been installed.
- **Reboot 1:** Force a reboot after the application is installed by ASEXEC during factory installation or full system recovery ("No" by default)
- **Reboot 2:** Force a reboot after the application is installed using Apps and Drivers Recovery interface ("No" by default)
- **Delete applications:** Delete the application package once installed ("No" by default)
- **Use all PNPs:** Tie an application to hardware device(s) ("No" by default). If the specified hardware is not present, the application will not be installed.

Click on the "Save" button 9 to save your modifications.

Adding an application ("Add application" operation)

Adding an application into the SDS database allows you to selectively install it onto a system being deployed with SDS. **There should be only 1 application per folder.**

1. Click on « Applications » tab **1** or "Applications" object **1** in the Database tree-view
2. Click on « Add application » operation **2**
3. Select the folder containing the application to add in the browser **3**
4. Select the application installer **4** in the list. This list may contain several files, for example, if the application is a two-part install, there may be additional executables in the list which may be selected. You can select / unselect all elements thanks to the 2 buttons on the right of this list
5. Check the "Include all subdirectories" option **6** if there are subfolders inside your source folder that are required by the application
6. Click on the "Next >" button



7. Specify the command line arguments to install your application silently (check the installation instructions and read-me files for the applications to find the application specific Silent Install switches) ⁷ and fill the other fields described previously ⁸ (for each of them you have a description at the bottom) before clicking on the “Next >” button ⁹:

Deployment Suite Console

SDS Console Add Application Wizard

Application information

Application(s)	Command line
E:\FileZilla_3.35.1_win64-setup_bundled.exe	/silent /install

Basic options

Description	Filezilla
Article code	
Date	31/07/2018
Size (MB)	4622.75
Priority	50
Language	Multi
Supported OS	<input checked="" type="checkbox"/> Multi OS

Advanced options

Description
Name of the selected application(s)

< Back **Next >** Cancel

8. The console will copy the application folder contents:

Deployment Suite Console

SDS Console Add Application Wizard

Please wait the end of the process.

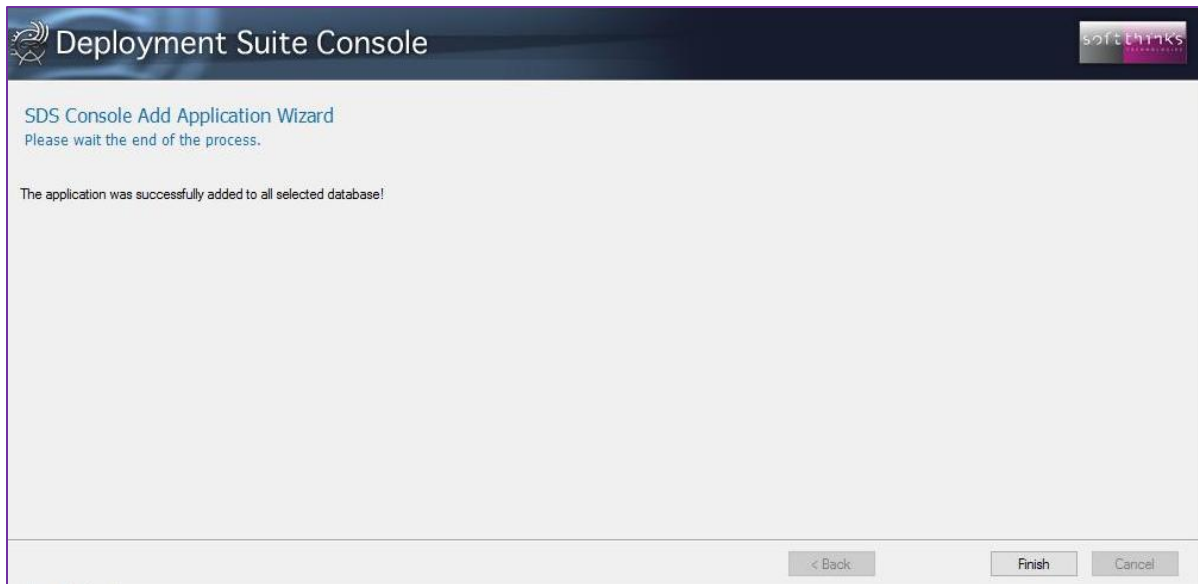
Adding application 'Filezilla' to database 'BLEU (SDS17.0.1)' in 'Z:\SDKDB' folder

Copying file 'E:\FileZilla_3.35.1_win64-setup_bundled.exe' to database...

Progress bar: [Green bar]

< Back Finish Cancel

9. A message will indicate you that the application has successfully been added to the database at the end of the process:



SDS allows to copy bundles to the system with deployment through a profile according to computer PNPs. When a profile with bundles is used, if the driver PNP detection is switched off, the bundle will be forced to be copied according to the profile. This will also allow using a same profile and choosing if the bundle must be downloaded or not.

New setting added to selector.ini (profile) in the [Bundle] section to allow forcing PNP bundle detection:

[Bundle]

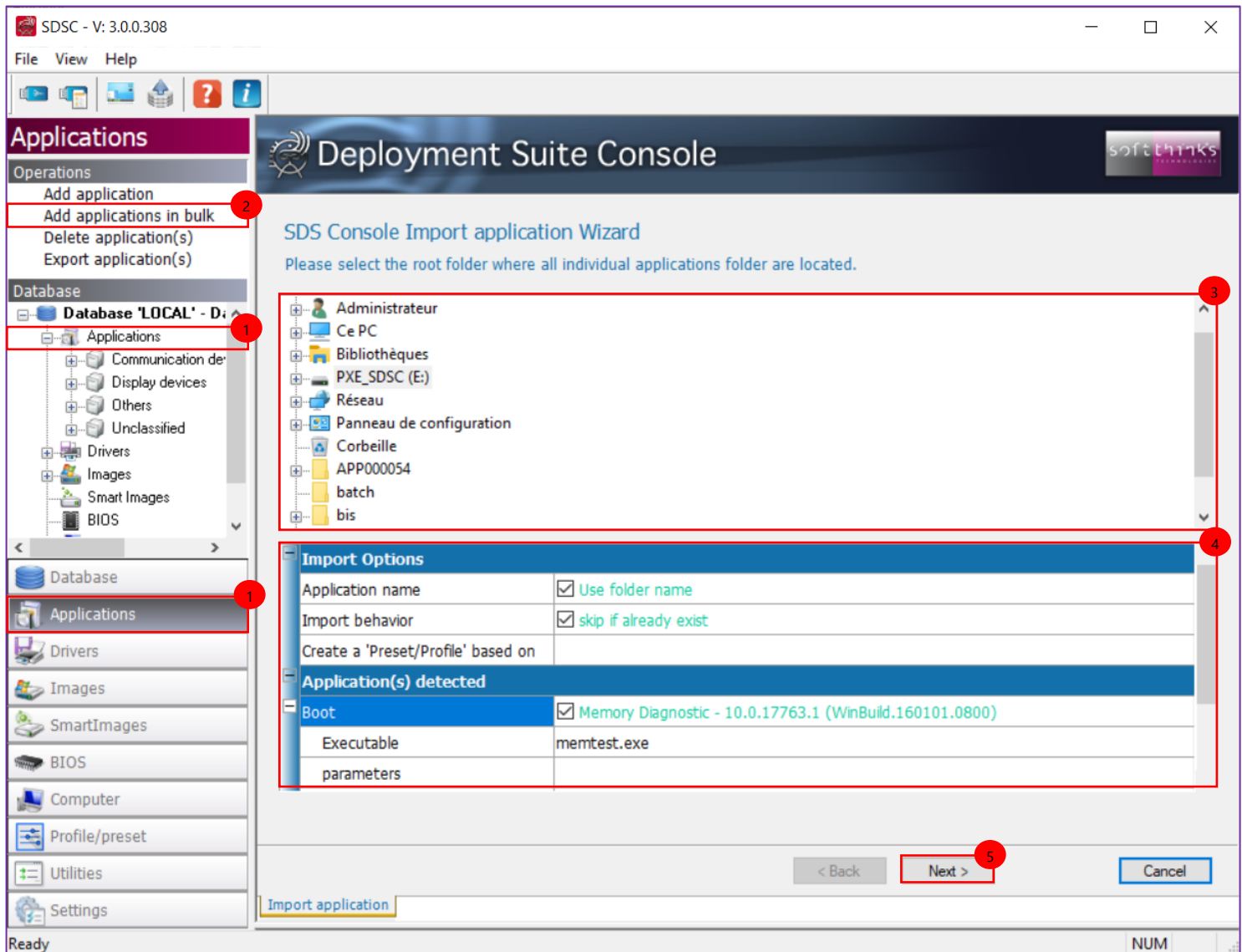
NoPNPOverSel=0 -> let bundle detection occurring to copy only matching bundle

NoPNPOverSel=1 -> block PNP detection and force bundle section to be copied to the User Partition

Adding several applications ("Add applications in bulk" operation)

You can also add all of the drivers in at one time.

1. Click on "Applications" tab or "Applications" item in the database tree-view 1
2. Click on the "Add applications in bulk" operation 2
3. Select the root folder where all individual applications folders are located 3
4. Specify the import options 4
5. Click on the "Next >" button 5

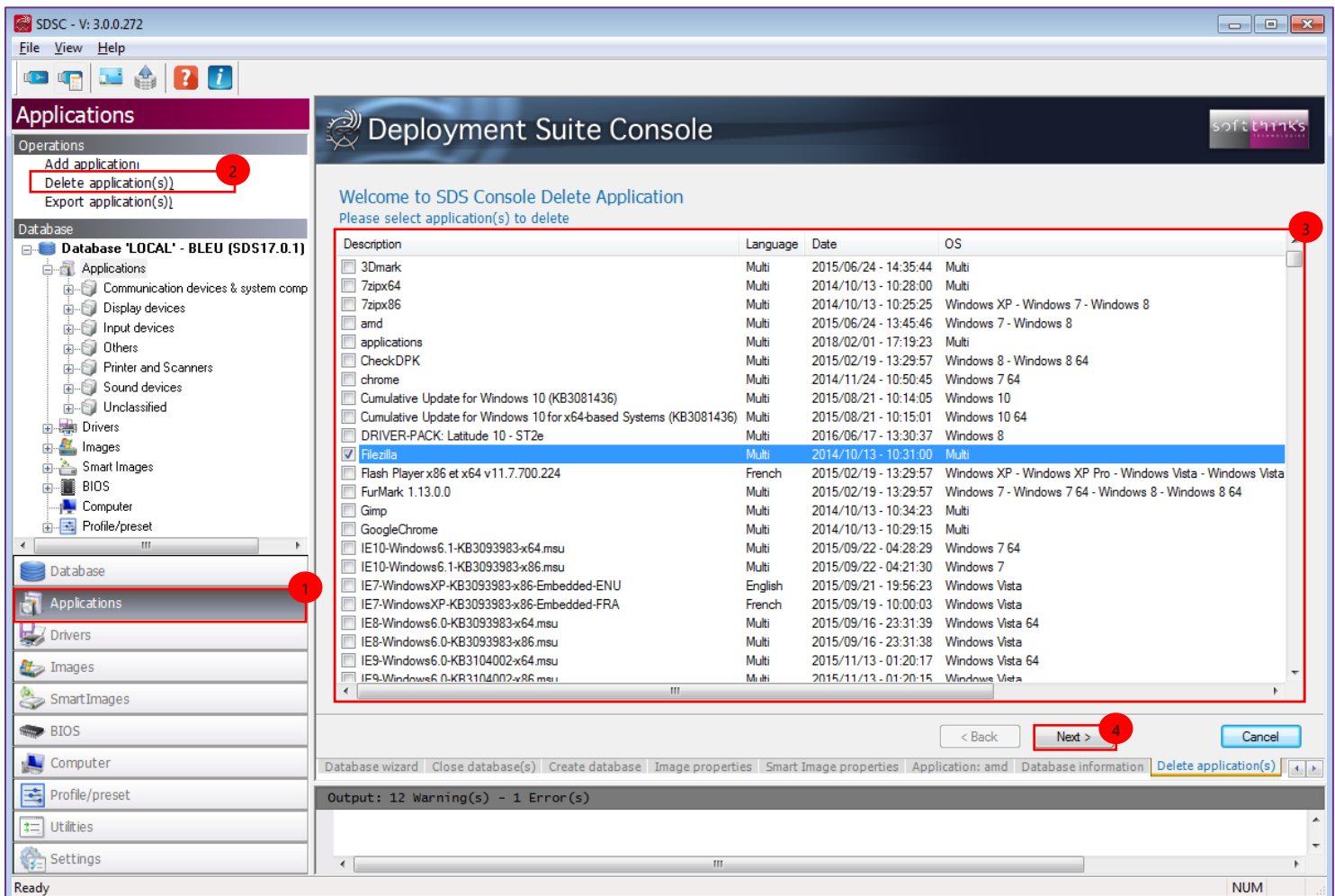


6. The wizard informs you once all the driver files have been copied into SDS Database

Deleting application(s) ("Delete application(s)" operation)

In order to delete one or more applications,

1. Click on "Applications" tab 1
2. Click on "Delete application(s)" operation 2
3. Select the application(s) you want to remove from the database in the list on the right 3. If you don't see an application recently added, press F5 to refresh the list contents.
4. Click on the "Next >" button 4



5. The wizard will confirm you that your applications have been deleted once the process has completed.

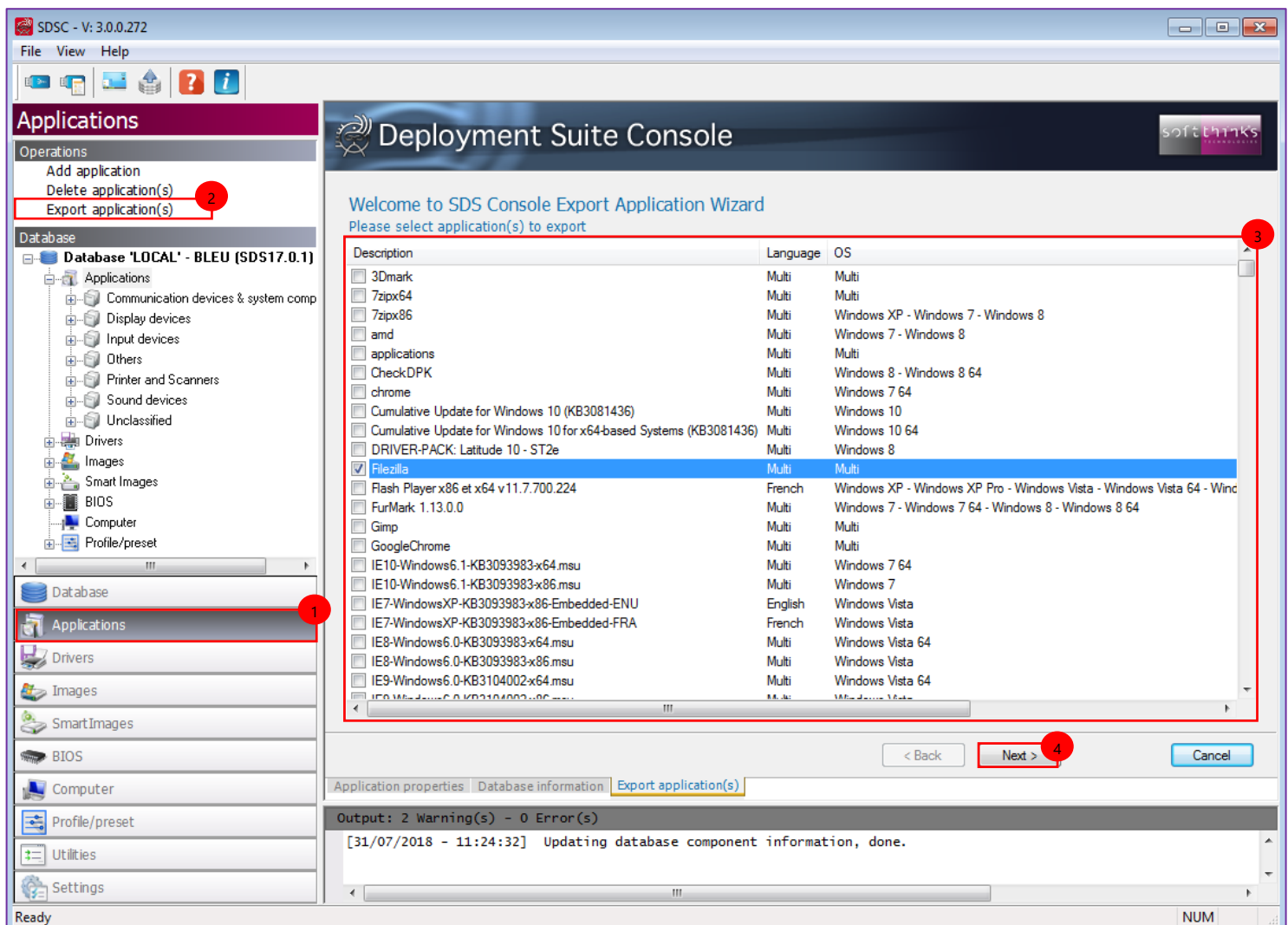
Note: Deletion is permanent. There is no method to undo a delete. Be careful when selecting applications for deletion and review them before continuing.

Exporting applications ("Export application(s)" operation)

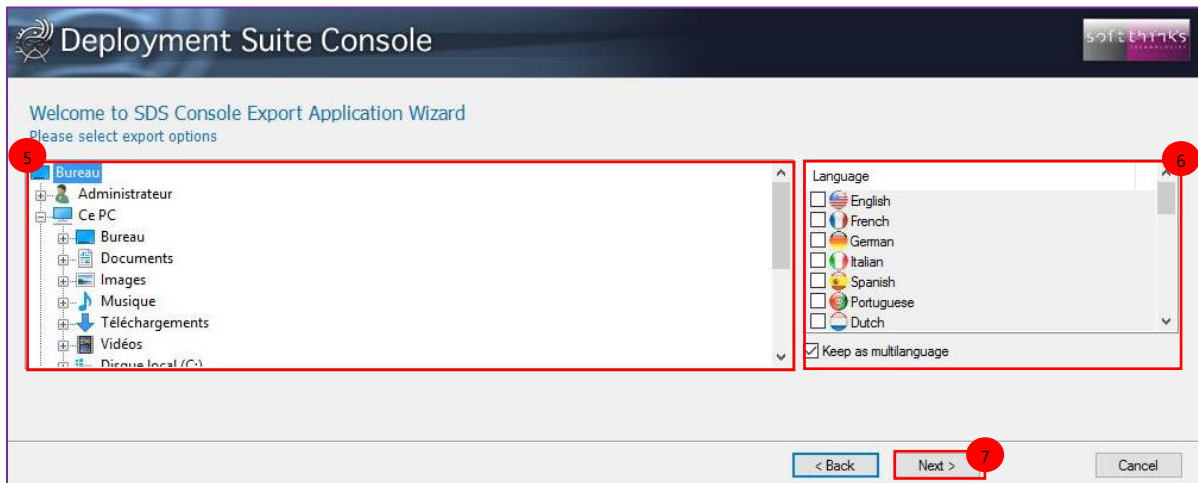
In order to copy applications from the current server database to another server database, you have the ability to export applications.

If you need to copy applications to another database on the same server we strongly recommend you use drag & drop between the 2 databases you have opened.

1. Click on "Applications" tab 1
2. Click on "Export application(s)" operation 2
3. Select the applications you want to export from the list 3. If you don't see an application recently added, press F5 to refresh the list contents.
4. Click on the "Next >" button 4

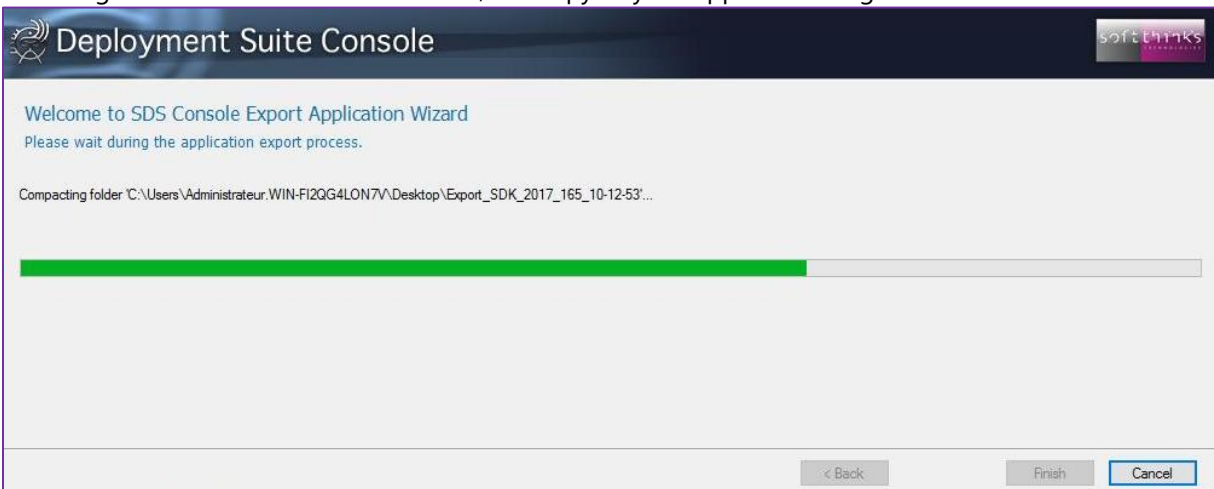


5. Specify the target folder ⁵ where the selected application will have to be exported in a ZIP file
6. Specify the language ⁶ or check the option "Keep it as Multilanguage"



Note: Please note that in order to avoid corruption during copy USB keys are not allowed as a target and don't appear in the tree-view.

7. After having clicked on "Next >" button ⁷, the copy of your application begins:

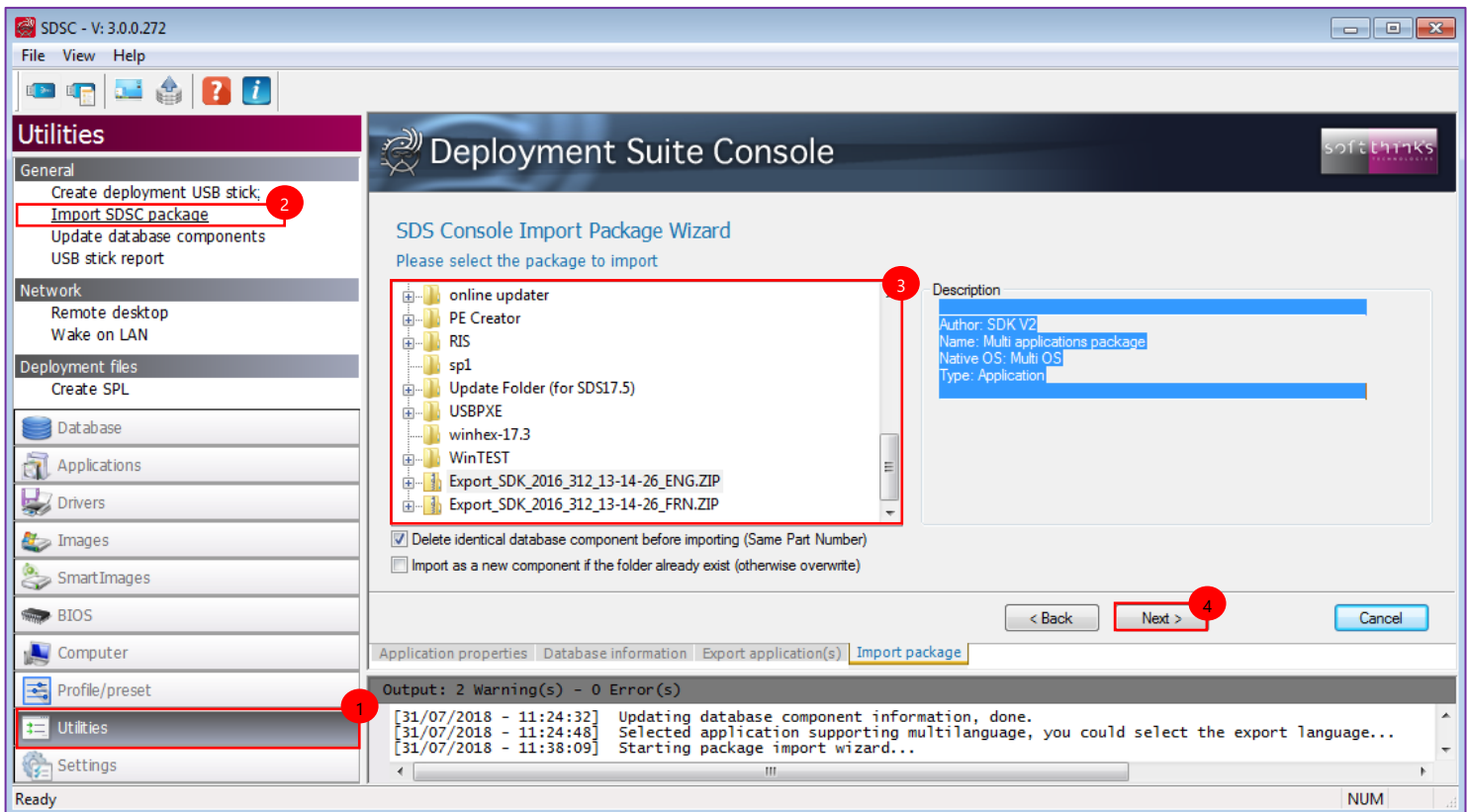


8. The wizard alerts you when the copy is completed

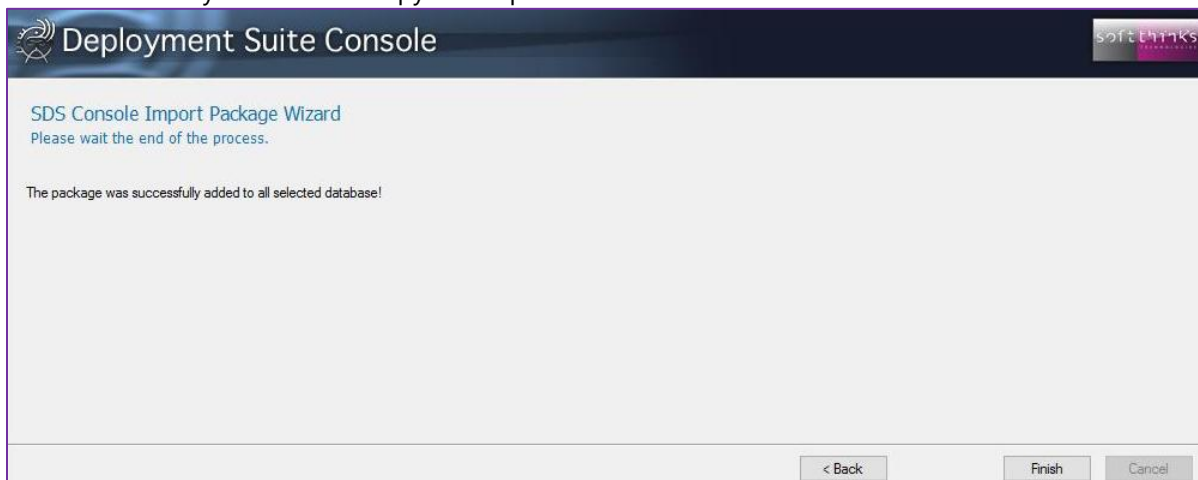
Importing application(s) ("Utilities\Import SDSC Package")

To import an application package that was previously created,

1. Click on « Utilities » tab **1**
2. Click on « Import SDSC Package » operation **2**
3. Select the application package you want to import **3**
4. Click on the "Next >" button **4**



5. The wizard will alert you when the copy is completed:



Drivers

In the same way as for Applications, you can explore the drivers you have added or imported by clicking on the "Drivers" tab ¹, or directly on the "Drivers" object in the tree-view ²:

Deployment Suite Console

SDS Console Driver properties
Please select driver for information or edition capabilities

Description	Language	OS	Signed	Article code	Importation date
Dell Wireless 1515 Wireless-N Adapter - Version: 06/14/2012.10.0.0.67	Multi	Windows 7 64 - Windows ...	Yes	111111111111111111	2014/09/30 15:50:36
ALPS Integrated Bluetooth Device - Version: 06/21/2006.6.2.9200.16420	Multi	Windows 7 64 - Windows ...	Yes		2014/09/30 16:57:26
Qualcomm Atheros AR8132 PCI-E Fast Ethernet Controller (NDIS 6.30) - ...	Multi	Windows 7 64 - Windows ...	Yes		2014/09/30 17:07:51
Intel(R) 82579LM Gigabit Network Connection - Version: 12/21/2010.11...	Multi	Windows 7 - Windows 7 64	Yes		2014/11/25 11:25:45
Realtek PCIe FE Family Controller - Version: 06/10/2011.7.046.0610.2011	Multi	Windows 7 64 - Windows ...	Yes		2014/11/25 13:58:59
Intel(R) 82579V Gigabit Network Connection - Version: 12/21/2010.11.8...	Multi	Windows 7 64	Yes		2014/11/25 14:27:08
Realtek PCIe FE Family Controller - Version: 04/21/2011.7.044.0421.2011	Multi	Windows 7	Yes		2014/11/25 14:54:54
Realtek PCIe FE Family Controller - Version: 04/21/2011.7.044.0421.2011	Multi	Windows 7 64	Yes		2014/11/25 14:55:40
RRealtek PCIe FE Family Controller - Version: 11/19/2014.8.037.1119.2...	Multi	Windows 8 64	No		2015/02/16 14:22:00
A tester - Realtek PCIe FE Family Controller - Version: 03/11/2016.10.00...	Multi	Windows 10 64	Yes		2016/06/02 09:55:59
ASIX AX88178 USB2.0 to Gigabit Ethernet Adapter - Version: 11/24/20...	Multi	Windows 8 64 - Windows ...	Yes		2016/06/07 14:25:51
Bluetooth AVRCP Device - Version: 06/21/2012.8.0.0000.0200	Multi	Windows 7 64 - Windows ...	Yes		2014/09/30 16:45:09
Standard PS/2 Port Mouse - Version: 06/21/2006.6.1.7600.16385	Multi	Windows 7 64 - Windows ...	No		2014/10/01 09:10:59
Realtek PCIe CardReader - Version: 06/13/2012.6.1.8400.28121	Multi	Windows 7 64 - Windows ...	Yes		2014/09/30 17:08:53
Intel(R) Desktop/Workstation/Server Express Chipset SATA AHCI Contr...	Multi	Windows 7 64 - Windows ...	Yes		2014/09/30 17:22:41
IDE Channel - Version: 06/21/2006.6.2.9200.16384	Multi	Windows 7 64 - Windows ...	Yes		2014/09/30 17:05:39
Intel(R) C600 series chipset SATA AHCI Controller - Version: 09/03/...	Multi	Windows 7 64	No		2015/05/20 14:47:48
Intel(R) 8 Series/C220 Chipset Family SATA AHCI Controller - Version: 0...	Multi	Windows 7 64 - Windows ...	No		2015/08/27 13:29:06
AMD SATA Controller - Version: 03/29/2015.1.2.001.0402	Multi	Multi	Yes		2017/07/20 10:47:29
AMD-RAID Bottom Device - Version: 11/08/2016.8.1.0.00026	Multi	Multi	Yes		2017/07/20 11:22:52
AMD-RAID Controller [storport] - Version: 11/08/2016.8.1.0.00026	Multi	Multi	Yes		2017/07/20 11:23:08
MICROSTORE - AMD-RAID Bottom Device - Version: 11/08/2016.8.1.0...	Multi	Multi	Yes		2017/08/11 11:38:42

Details

- Path: Z:\SDKDB\DRVNETMUL\NET000000 ⁵
- Manufacturer: (Standard system devices)NTamd64
- PNP available: 3818 item(s)
- Importation date: 2014/09/30 15:50:36
- Deactivated: Partially

Next > ⁶ **Cancel**

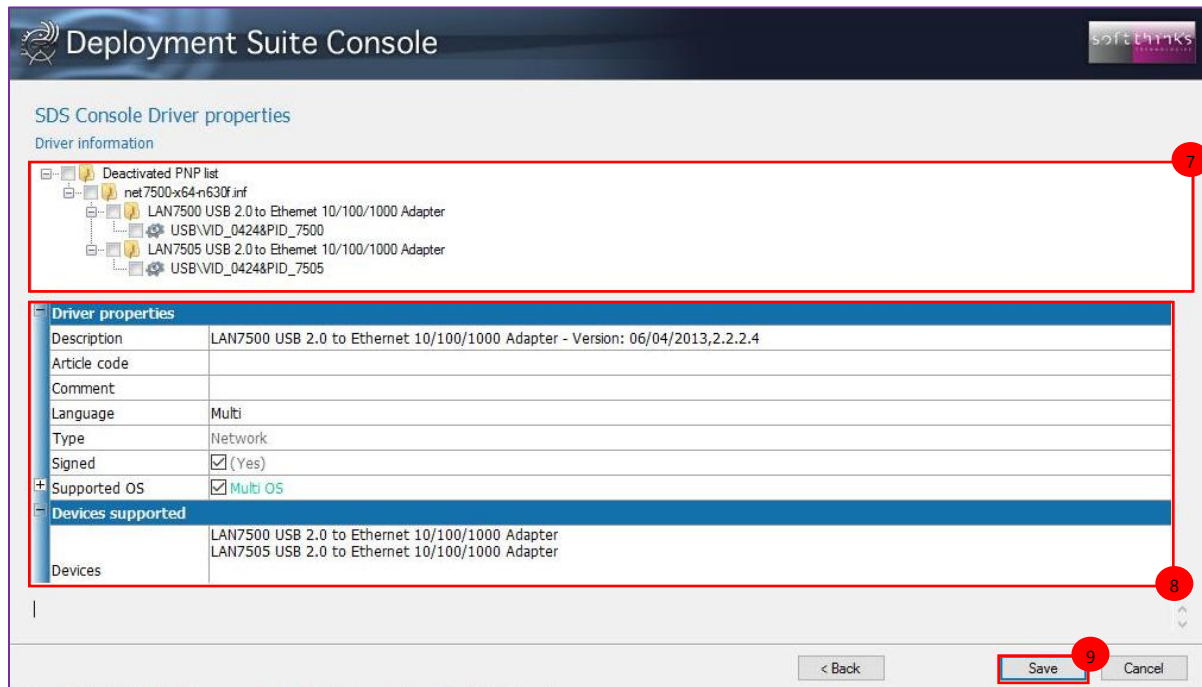
Driver properties | Application properties | Database information | Computer: <Owner Last Name> | Delete computer(s)

Output: 17 Warning(s) - 0 Error(s)

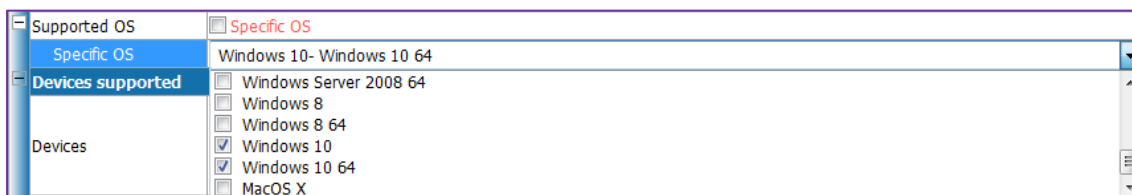
```
[16/08/2018 - 15:55:23] Warning: An image object from folder 'Z:\SDKDB\RIS\RIS_IM990029' was modified outside this SDK ins-
[16/08/2018 - 15:55:23] Warning: An image object from folder 'Z:\SDKDB\RIS\RIS_IM990029' was modified outside this SDK ins-
[16/08/2018 - 16:41:00] Warning: the database was modified outside this SDK instance -> Refreshing the interface!
[16/08/2018 - 16:42:37] Warning: the database was modified outside this SDK instance -> Refreshing the interface!
[16/08/2018 - 16:54:17] Warning: the database was modified outside this SDK instance -> Refreshing the interface!
[16/08/2018 - 17:03:22] Warning: the database was modified outside this SDK instance -> Refreshing the interface!
```

When you select a driver in the list ³, you will see all of its details below ⁴, including its path that you can open by clicking on the link ⁵.

Click on the “Next >” button ⁶, or double click on the driver in the list, to eventually uncheck some PNPs ⁷ in order to avoid the download of this driver during deployment in automatic mode, and edit its properties ⁸:



- **Description:** A text description of the driver that will be displayed in the database and by the Apps and Drivers Recovery interface. You can modify this as needed.
- **Article Code:** The part number used in SPL files to designate the driver (Not commonly used). This code should be unique regarding the database items in order to identify this component.
- **Comment:** Additional field to provide info on the driver.
- **Language:** Language supported by the driver. Select “Multi” for multilanguage driver.
- **Type:** The class of the driver (mass storage, network, video, etc) from a list created in the Settings tool.
- **Signed:** Check this box if the driver is digitally signed. Note: If the driver is not already signed, checking this box will not sign it.
- **Supported OS:** Select “Multi OS” to allow the driver to be used with any OS, or else “Specific OS” and check the OS supported in the drop-down list below:



- **Devices Supported:** Shows the description of the devices from the INF file.

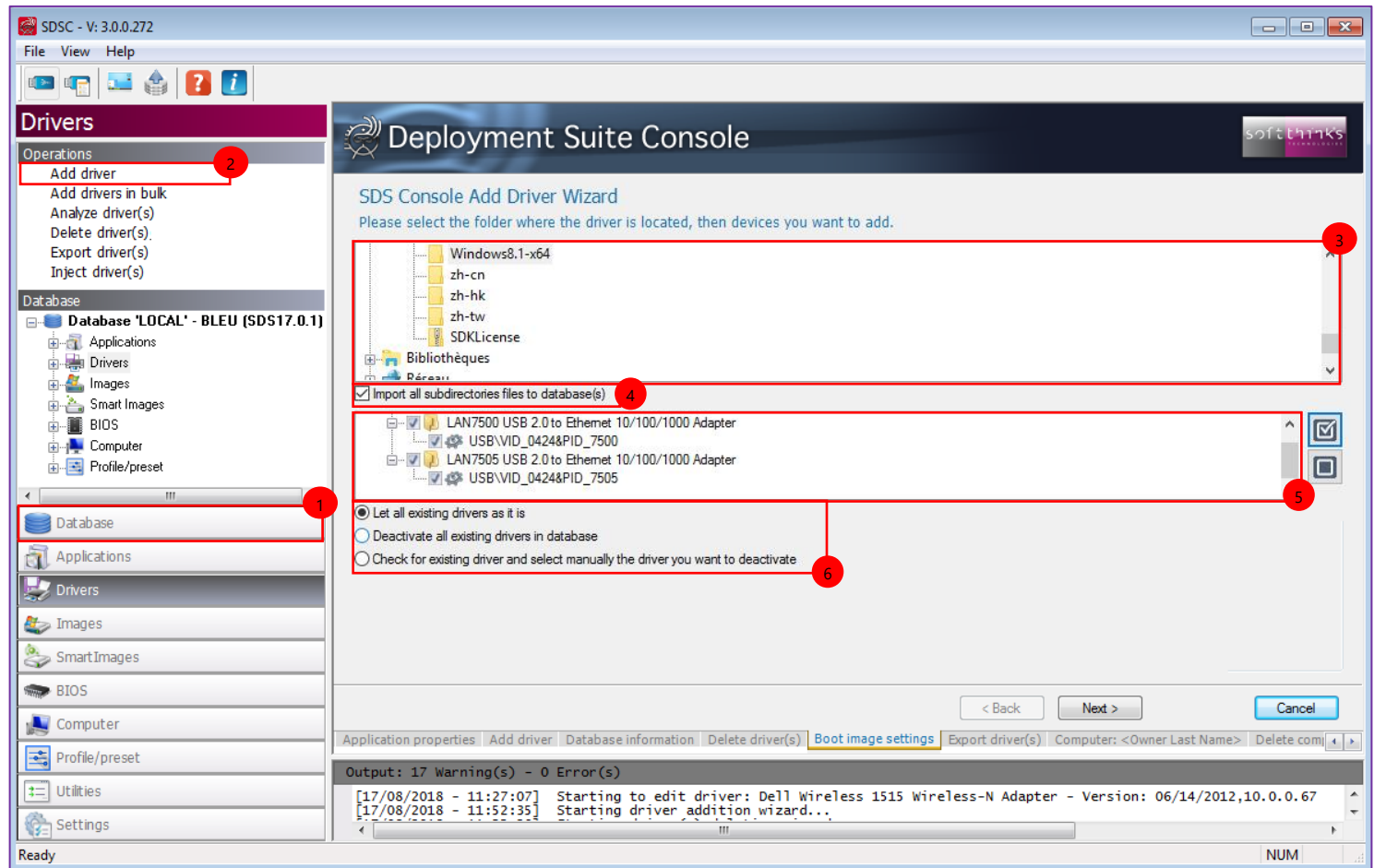
Click on the “Save” button ⁹ to save your modifications.

Adding a driver ("Add driver" operation)

To add a driver to the database, for example a network driver required to boot on a specific platform, you first need a folder containing the driver INF, CAT and other associated files for the driver. If the driver is packaged in a compressed format, it must be expanded first.

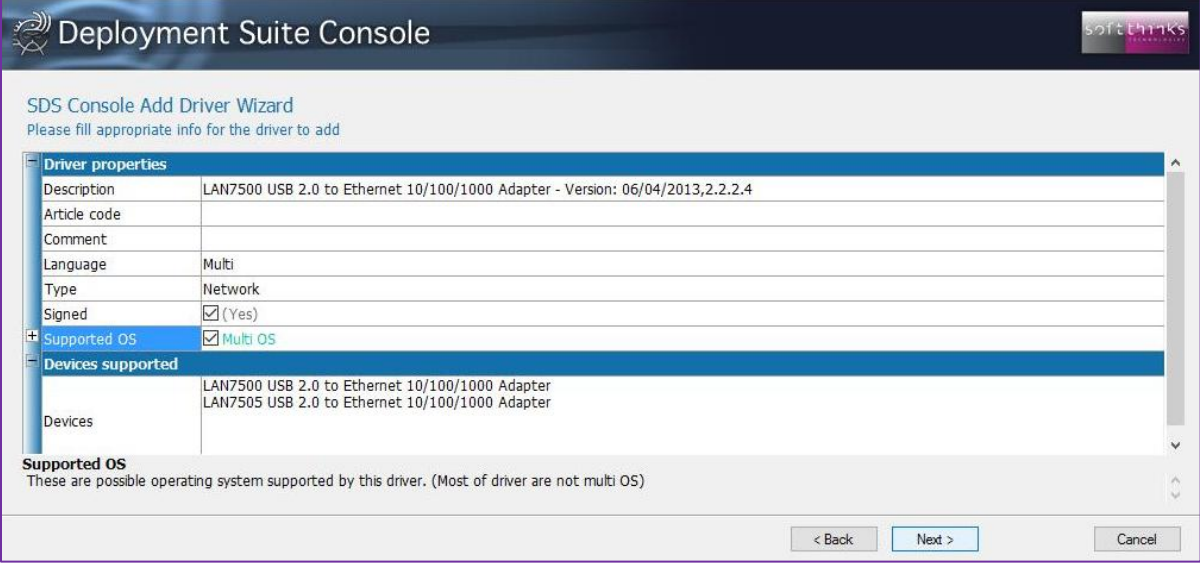
If you need to add several drivers at a one time, you should use the operation ["Add drivers in bulk"](#) instead.

1. Click on the "Drivers" tab or the "Drivers" item in the Database tree-view
2. Click on the "Add driver" operation



3. Select the folder where the driver you want to add is located
4. Check the option "Include Subdirectories" if the source folder contains subdirectories that are required to install the driver properly. Some vendors create their driver packages with the INF file in the root directory and binaries under a subfolder based on the compatible OS name of the driver.
5. Select the individual PnP IDs to associate to the driver (or the topmost value to include all of the IDs)
6. Choose what you want to do with existing drivers matching the selected PnP IDs:
 - **Let all existing drivers as it is:** This option adds this driver and keeps any existing drivers using the same PnPIDs.
 - **Deactivate all existing drivers in database:** The new driver supersedes the existing drivers with the same PnP IDs.
 - **Check for existing driver and manually select the driver you want to deactivate:** This option allows the Administrator to selectively replace the driver on a PnP ID basis.

7. Review and update the Driver Properties before clicking on "Next >":



Deployment Suite Console

SDS Console Add Driver Wizard
Please fill appropriate info for the driver to add

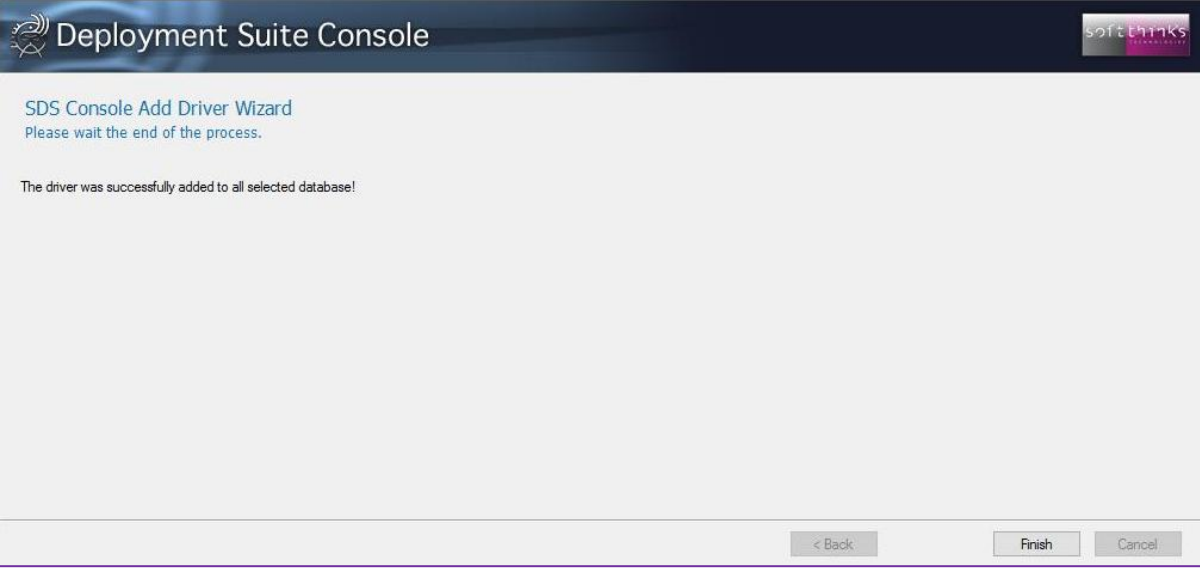
Driver properties	
Description	LAN7500 USB 2.0 to Ethernet 10/100/1000 Adapter - Version: 06/04/2013,2.2.2.4
Article code	
Comment	
Language	Multi
Type	Network
Signed	<input checked="" type="checkbox"/> (Yes)
Supported OS	<input checked="" type="checkbox"/> Multi OS

Devices supported	
Devices	LAN7500 USB 2.0 to Ethernet 10/100/1000 Adapter LAN7505 USB 2.0 to Ethernet 10/100/1000 Adapter

Supported OS
These are possible operating system supported by this driver. (Most of driver are not multi OS)

< Back Next > Cancel

8. The wizard alerts you once all the driver files have been copied into SDS Database:



Deployment Suite Console

SDS Console Add Driver Wizard
Please wait the end of the process.

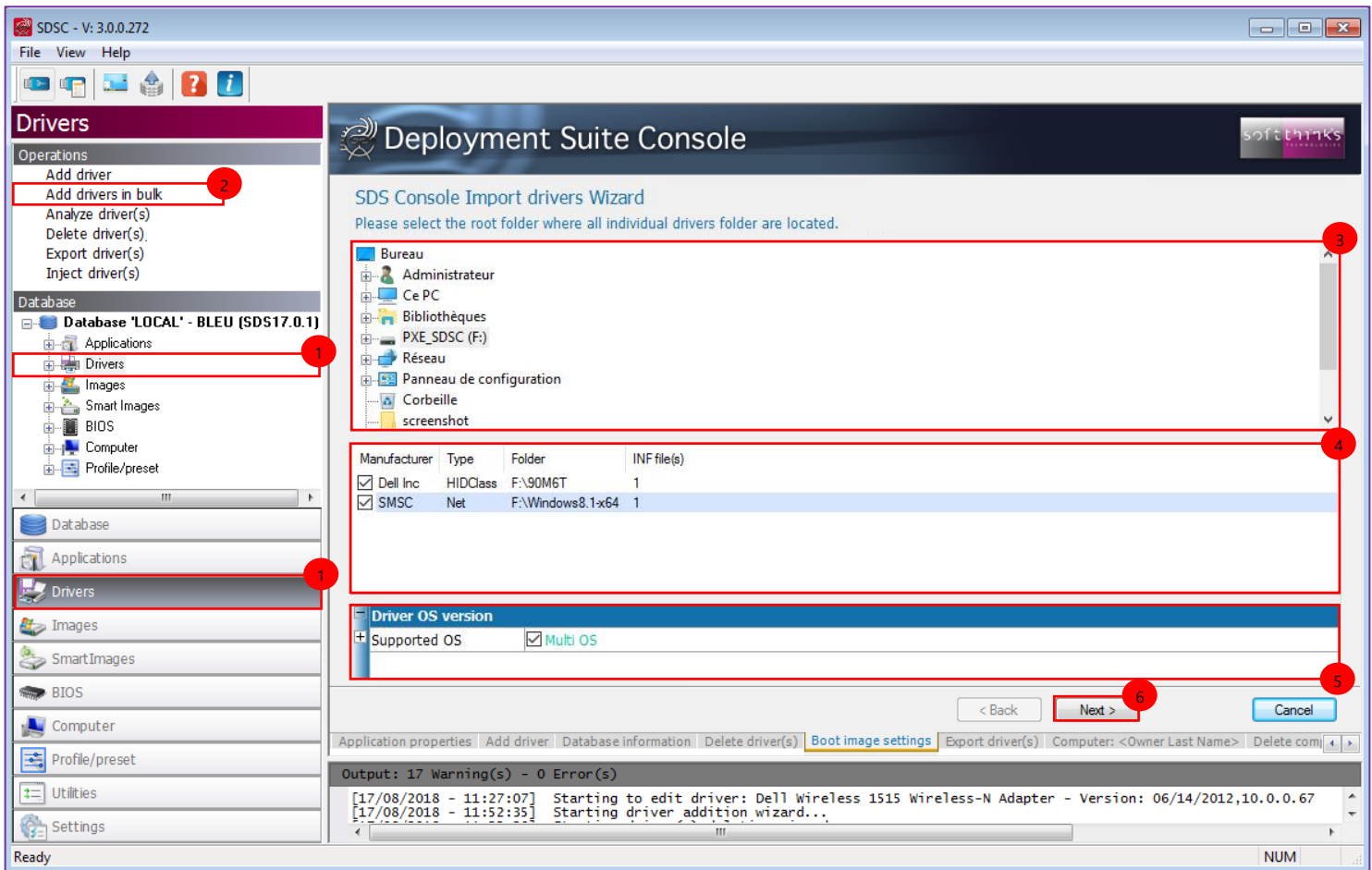
The driver was successfully added to all selected database!

< Back Finish Cancel

Adding several drivers ("Add drivers in bulk" operation)

You can also add all of the drivers in at one time.

7. Click on "Drivers" tab or "Drivers" item in the database tree-view ¹
8. Click on the "Add drivers in bulk" operation ²
9. Select the root folder where all individual drivers folders are located ³
10. Select which ones you want to import ⁴
11. Specify the driver OS version ⁵
12. Click on the "Next >" button ⁶



13. The wizard alerts you once all the driver files have been copied into SDS Database

Adding Driver Packs

Driver packs are recent addition to our software that will deploy a small database of drivers that matches the model of the unit. This will prevent any driver version mismatch issues.

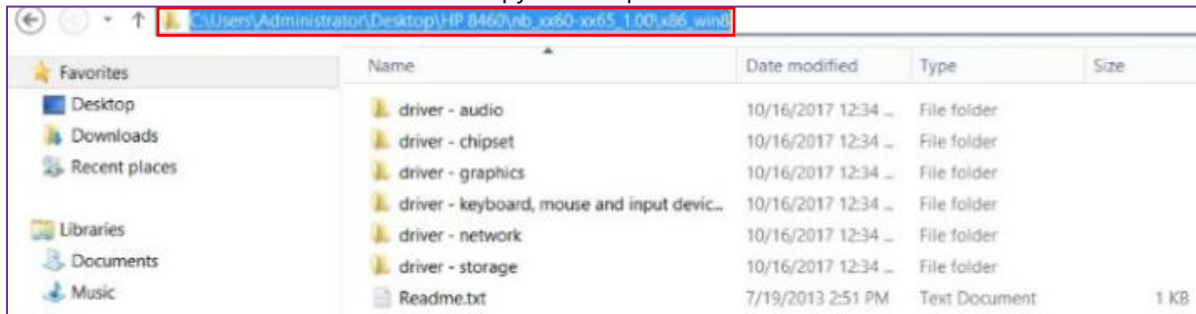
Driver packs are setup as special application in the system. During the deployment process, once the system reaches the point of doing driver injection, it will check to see if there is a driver pack that matches the model. If there is, it will use the driver pack rather than the normal driver database.

Certain Manufacturers provide driver packs for their computers. Dell, HP and Lenovo do for sure and these can be reached by clicking on the following links:

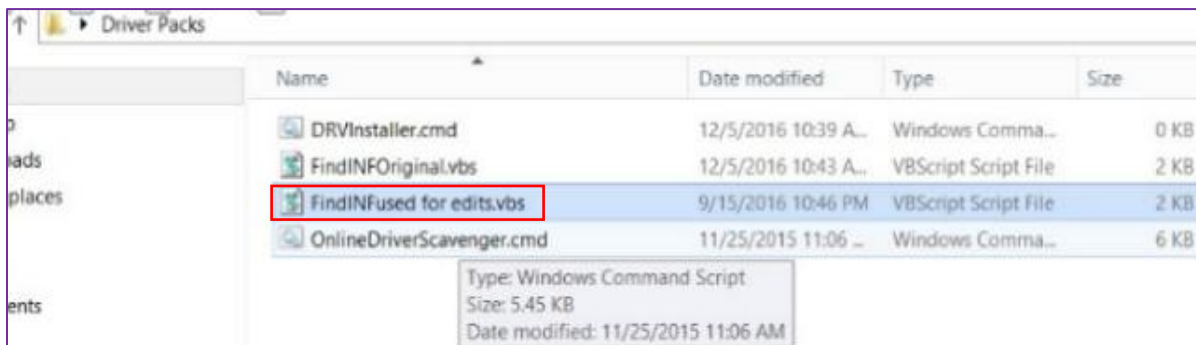
- **Dell** : <http://en.community.dell.com/techcenter/enterprise-client/w/wiki/2065.dell-command-deploy-driver-packs-for-enterprise-client-os-deployment>
- **HP** : http://ftp.hp.com/pub/caps-softpaq/cmit/HP_Driverpack_Matrix_x86.html (32 Bit)
http://ftp.hp.com/pub/caps-softpaq/cmit/HP_Driverpack_Matrix_x64.html (64 Bit)
- **Lenovo** : <https://support.lenovo.com/us/en/documents/ht074984>

Here are the steps to add driver packs to the SDS database:

1. Find the model of computer that you are looking for and download that driver to a folder on your server.
2. Extract the Driver Pack to a folder and then copy the full path of that folder:



3. You will be given a driver pack folder with files that are needed for creating driver packs. Open that folder and right click on FindINFused for edits.vbs and select EDIT:



4. Paste the address that you copied for the Extracted Driver Pack Folder into the First line of FindINFused for edits.vbs that says Const startDir = "...:

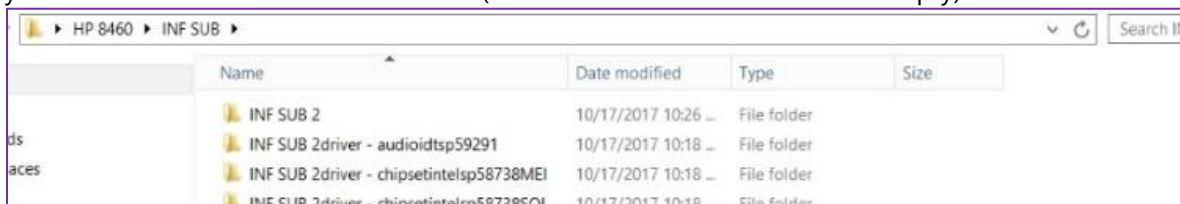
```
Const startDir = "C:\Users\Administrator\Desktop\HP_8460\nb_xx60-xx64_1.00\x86_win8"
Const endDir = ""
Set oFSO = CreateObject("Scripting.FileSystemObject")
```

5. In the folder that you extracted your Driver Pack, create a folder called INF SUB and then inside there, create a folder called INF SUB 2. Then copy the path of INF SUB 2 and paste it into the Second line of FindINFused for edits.vbs that says Const endDir = "...:

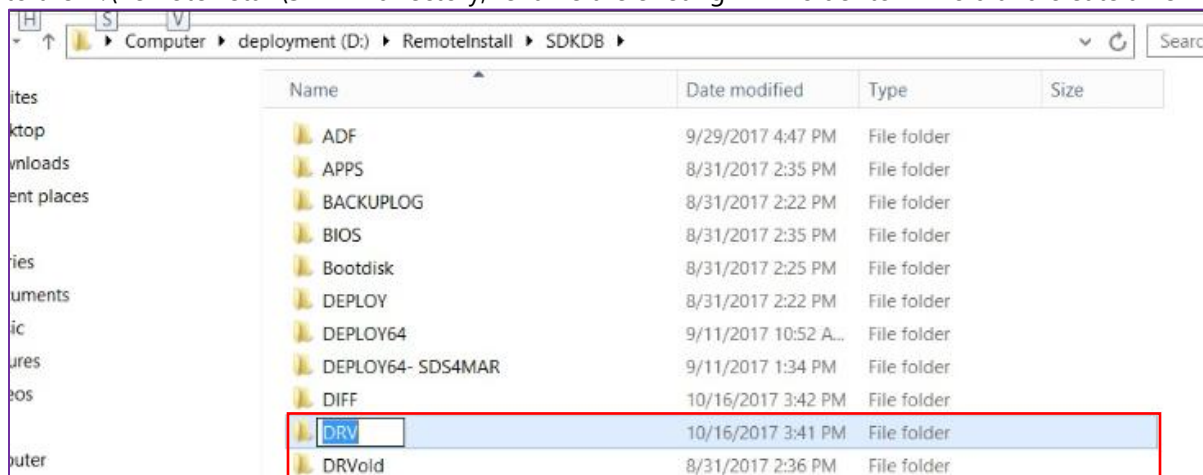
```
Const startDir = "C:\Users\Administrator\Desktop\HP_8460\nb_xx60-xx64_1.00\x86_win8"
Const endDir = "C:\Users\Administrator\Desktop\HP_8460\INF_SUB\INF_USB_2"
Set oFSO = CreateObject("Scripting.FileSystemObject")
```

6. Save and Close the FindINFused for edits.vbs file then double-click on it to run it.

7. Verify that the files are in the folder INF SUB. (The INF SUB 2 Folder will remain empty):

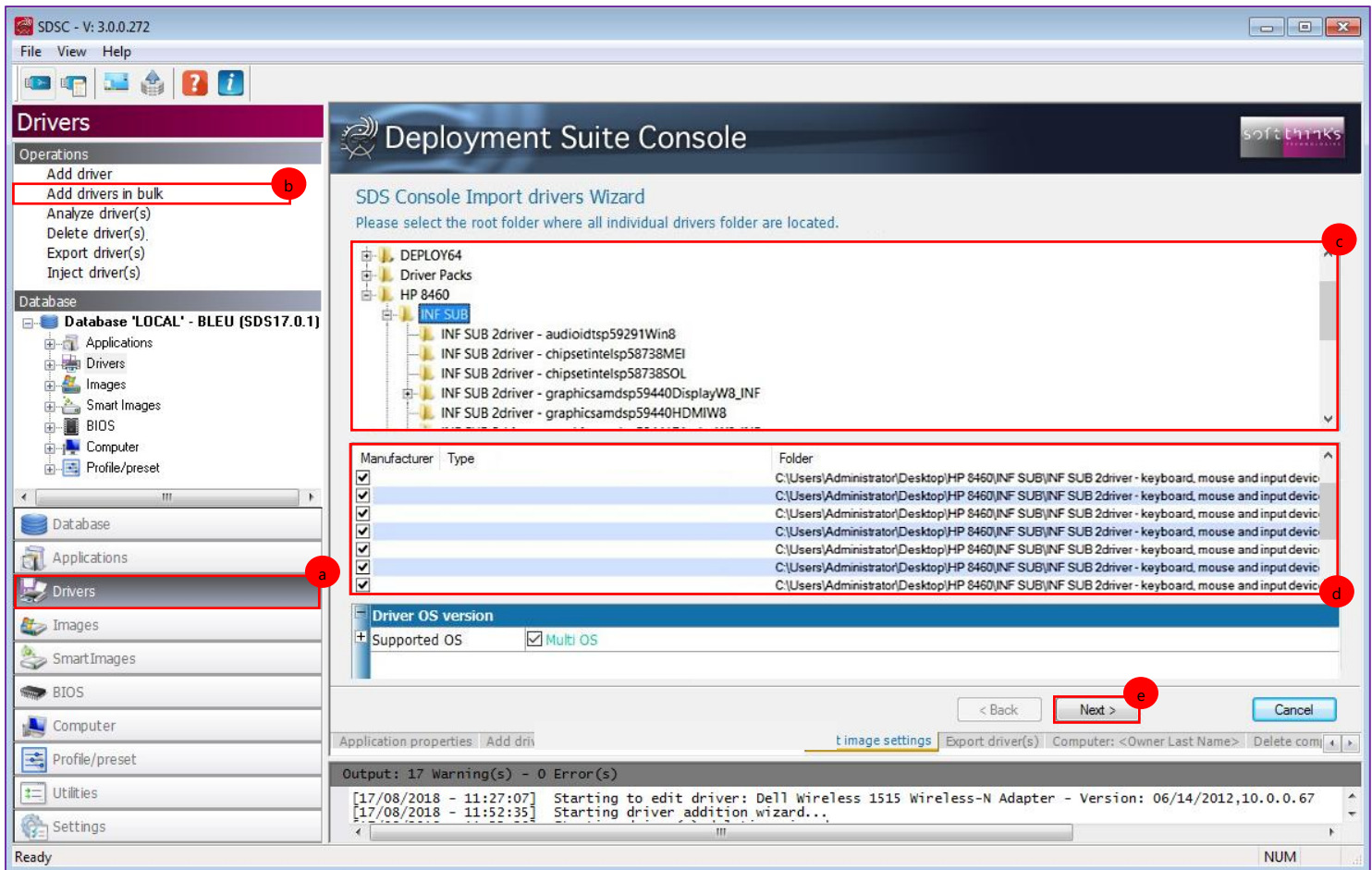


8. Go to the D:\RemoteInstall\SDKDB directory, rename the existing DRV folder to DRVold and create a new DRV folder:



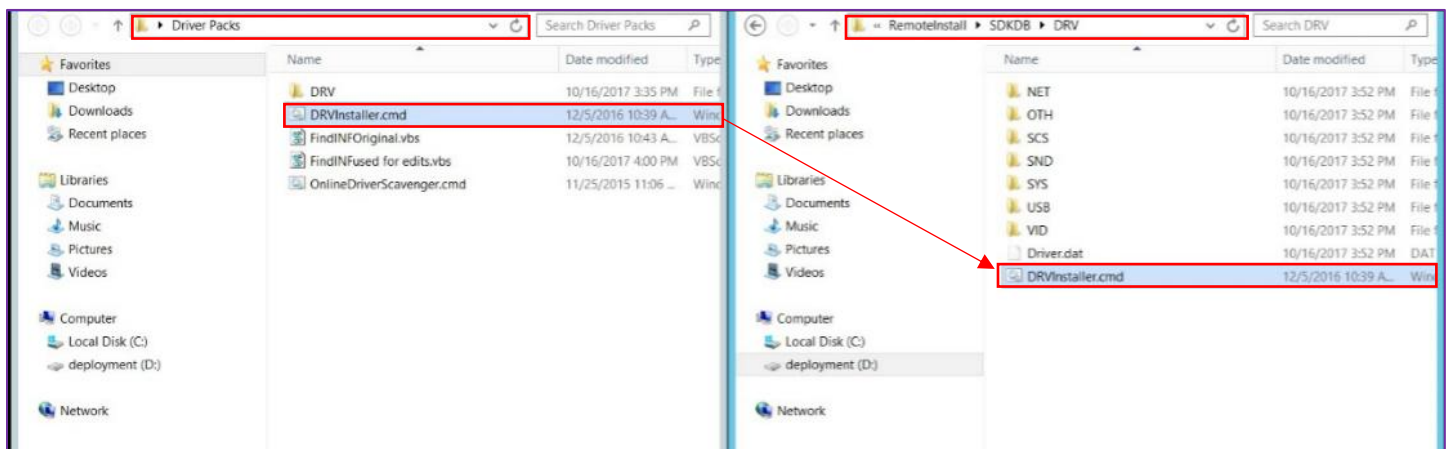
9. Open the SDS Management Console.

- Click on "Drivers" tab a
- Click on the "Add drivers in Bulk" operation b
- Browse to the INF SUB folder that you created and click on it c
- Make sure all of the boxes are checked in the lower right screen d
- Click on the "Next>" button e

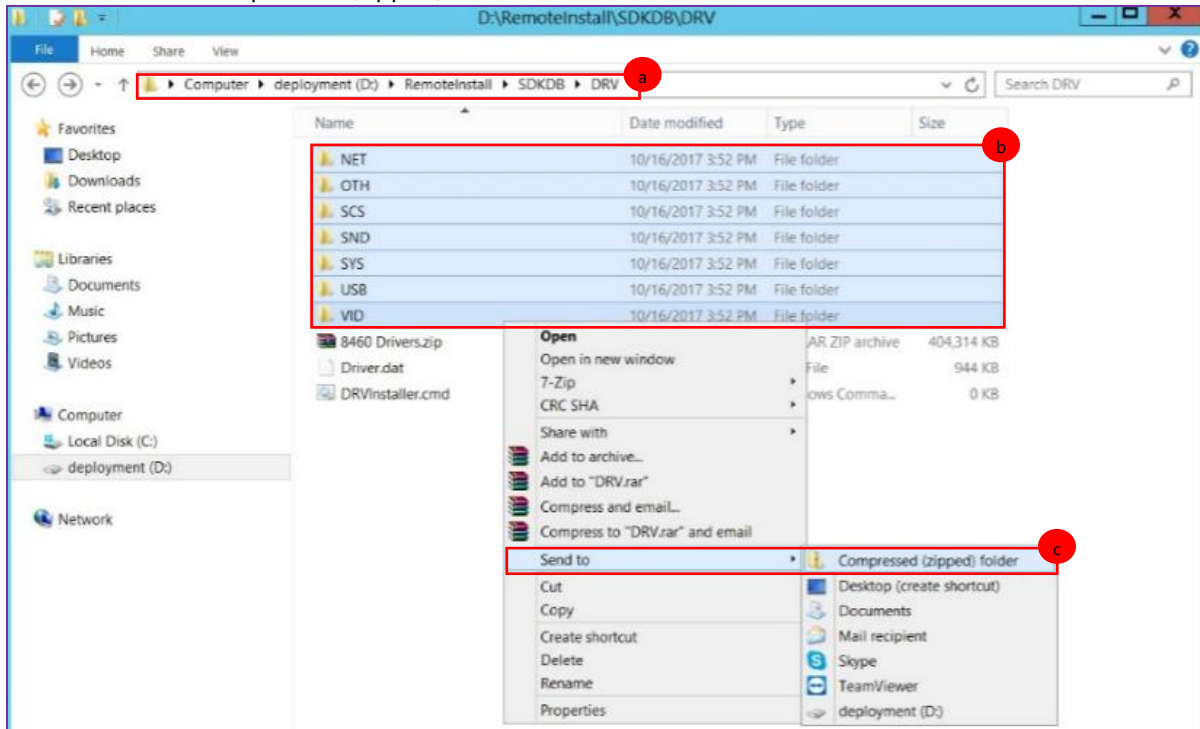


10. When the process is complete click the Finish Button in the lower right corner.

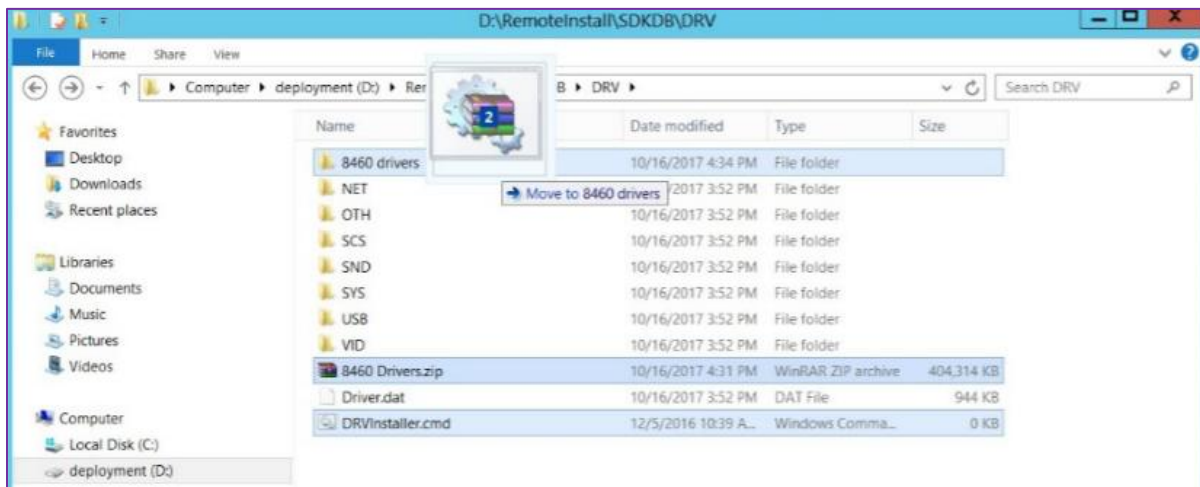
11. Copy the DRVInstaller.cmd file from the Driver Packs folder to the RemoteInstall\SDKDB\DRV folder:



12. Select all of the folders in the RemoteInstall\SDKDB\DRV folder ^a. Right click on them while they are highlighted ^b and select "Send to Compressed (zipped)" folder ^c:

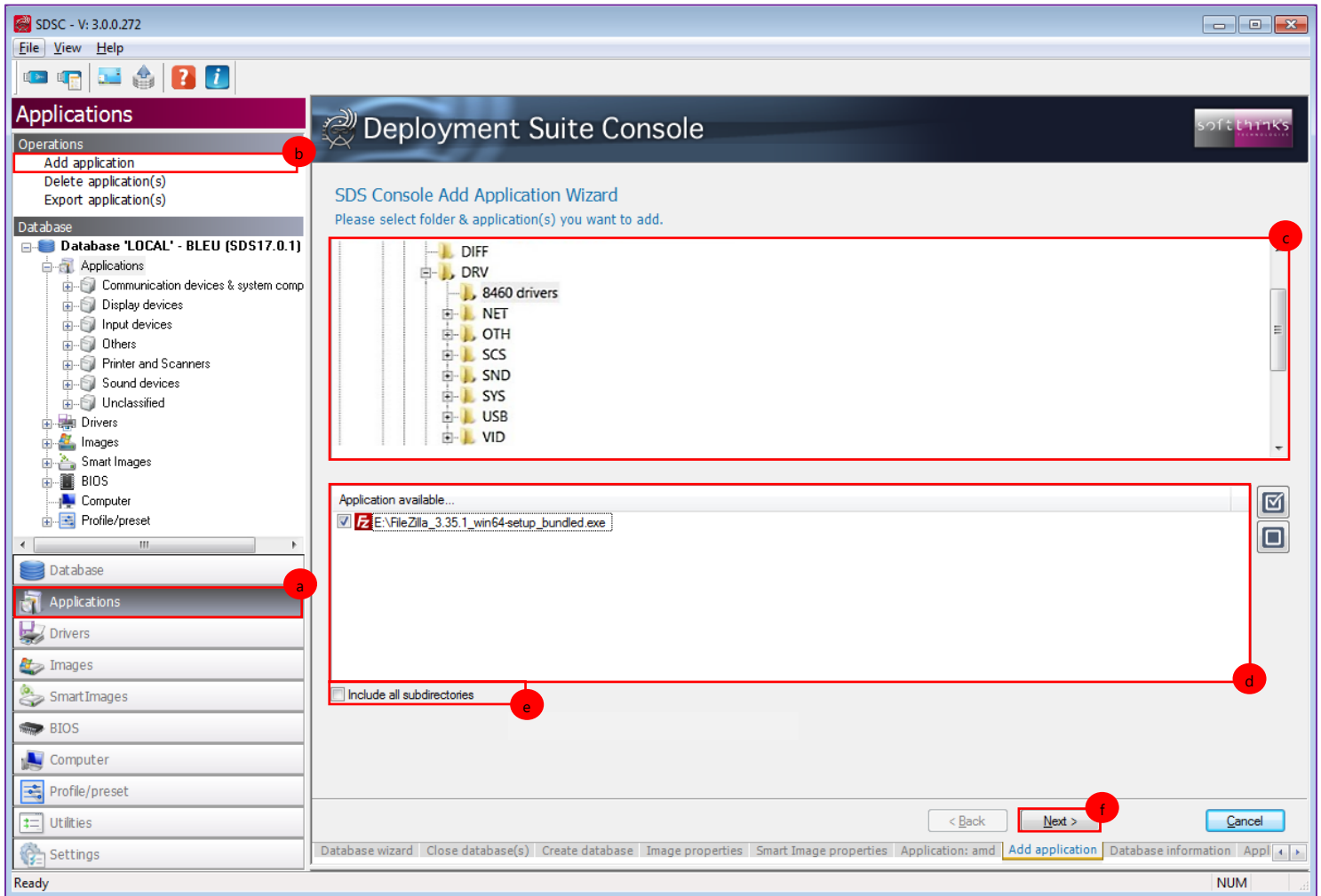


13. Create a new folder in the DRV Folder (name it whatever you like) and move the compressed file and the DRVInstaller.cmd file to it:



14. Go back to the SDS Console

- a. Click on the "Applications" tab a
- b. Click on the "Add Application" operation b
- c. Browse to and select the folder you created in the DRV folder c
- d. Put a check in the box next to the DRVInstaller.cmd d
- e. Make sure the box next to "Include all subdirectories" is checked as well e
- f. Click on the "Next >" button f



15. The naming convention for the Driver Packs is "Manufacturer – Model – Operating System". The manufacturer and Operating system are for you. The model is what is used by the system to find and install the driver pack.
- Type the name in the "Description" field **a**
 - Uncheck the box that says "Multi OS" next to "Supported OS" **b**, and then in "Specific OS" select the Operating systems that the driver pack is for (Windows 7 is selected by default and will need to be unchecked if it is not needed)
 - Set the Type to "Driver" **c**
 - Set the Class to "Unclassified" **d**
 - Click on the "Next >" button **e**

Deployment Suite Console

SDS Console Add Application Wizard

Application information

Application(s)	Command line
DRVInstaller.cmd	

Basic options

Description	HP - HP EliteBook 8460p - Windows 8 and 10 a
Article code	
Date	16/10/2017
Size (MB)	394.84
Priority	50
Language	Multi
Supported OS	<input type="checkbox"/> specific OS b
Specific OS	Windows 8 64- Windows 10 64

Advanced options

Type	Driver c
Class	Unclassified d
File version	1
Delay 1 (sec)	0
Delay 2 (sec)	0

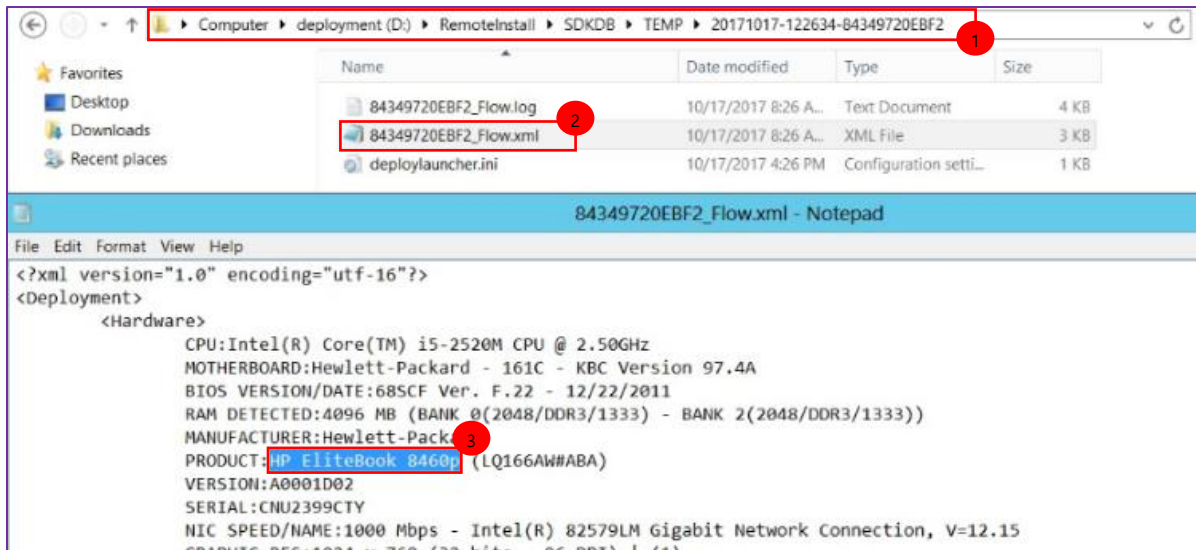
Class

Application class in which an application could be classified

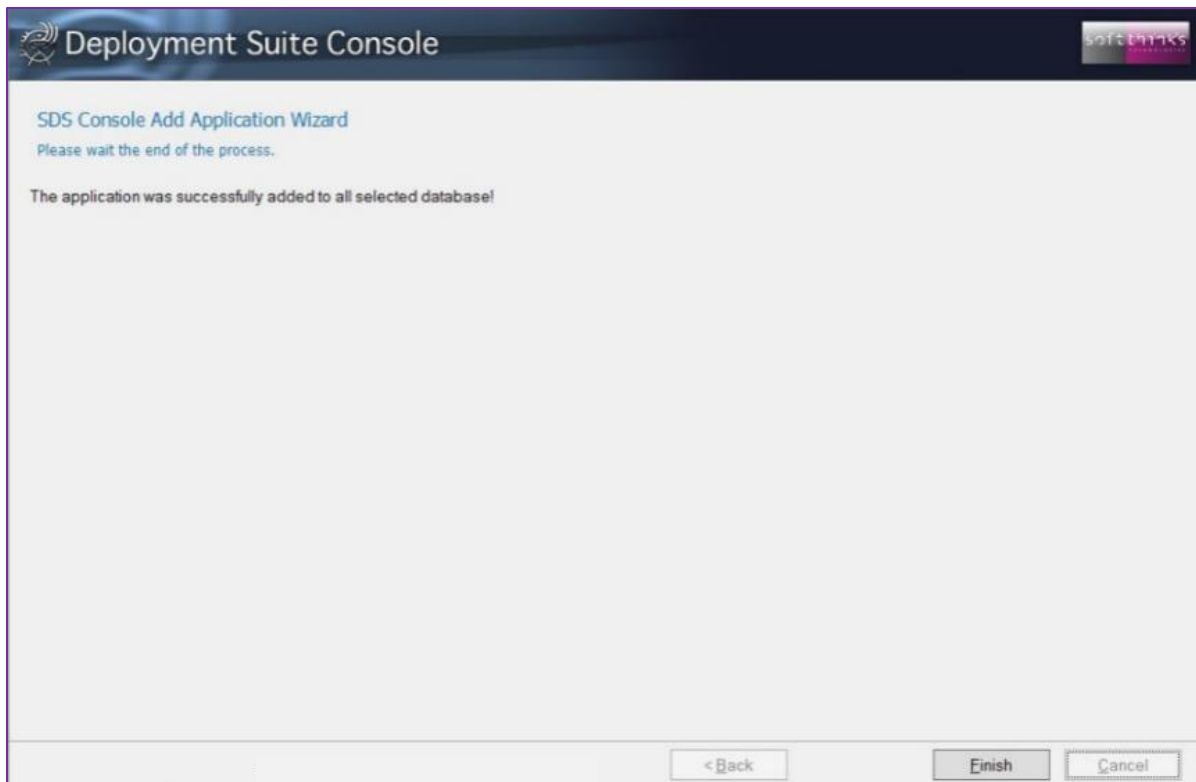
< Back **e** Next > Cancel

Note: In order to get the correct name, you will need to boot the model of the computer for which you are creating the Driver Pack

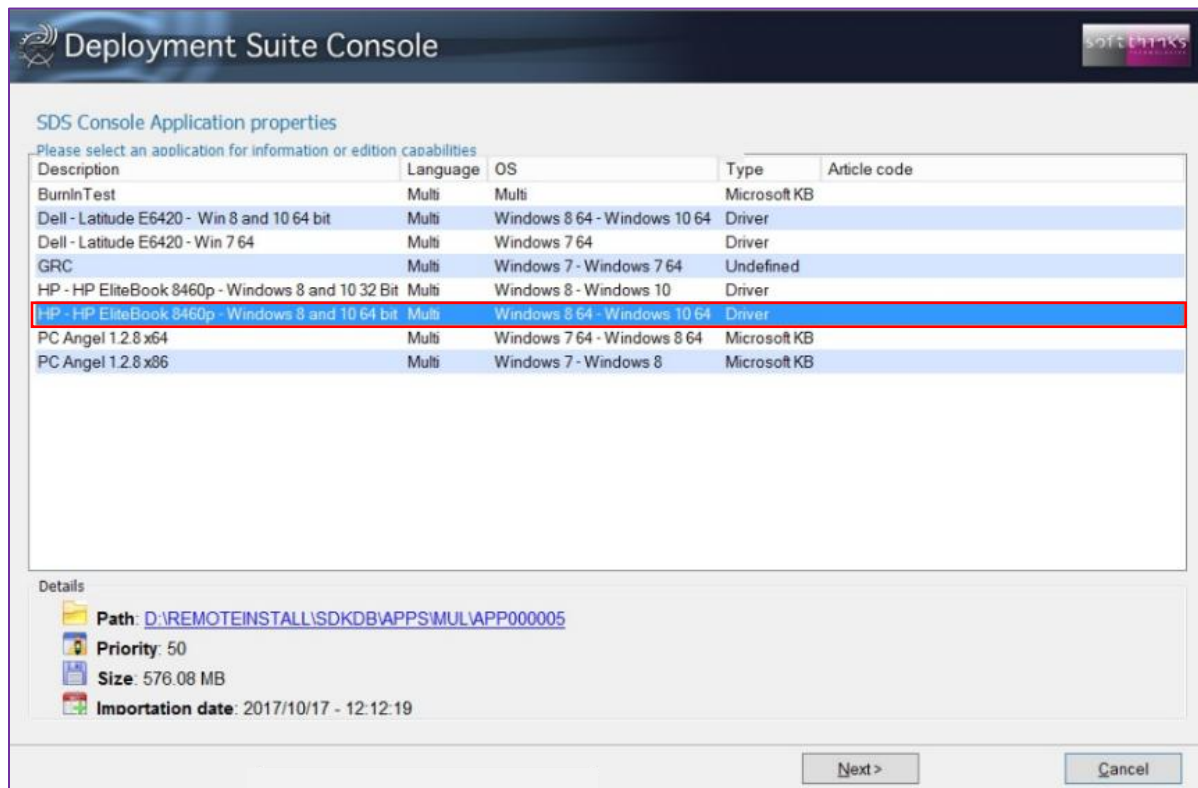
- Go to SDKDB\Temp and open the Temp folder for that computer ^a
- Select the file ending with _Flow.xml ^b and right click to edit it
- Go to the line that says "PRODUCT:" and copy the model name of the computer ^c
- Paste that name in the Middle part of the description (for this example, it would be HP – HP Elitebook 8460p – Windows 8 and 10 64 bit.):



- Click Finish when the driver pack is finished being created:



17. The new driver pack will be listed in your Applications:



Note: if the model name and the OS match, the Driver Pack will be selected automatically by the system. It does not have to be manually selected by the technician.

Deleting drivers ("Delete Driver(s)" operation)

In order to delete one or more drivers,

1. Click on the "Drivers" tab ¹, or on the "Drivers" item in the Database tree-view ¹
2. Click on the "Delete driver(s)" operation ²
3. Select the driver(s) you want to remove from the database in the list on the right ³. If you don't see a driver you recently added, press F5 to refresh the list contents.
4. Click on the "Next >" button ⁴

The screenshot shows the 'SDSC - V: 3.0.0.272' window with the 'Deployment Suite Console' title. The 'Drivers' tab is selected in the left sidebar. The 'Delete driver(s)' operation is highlighted in the 'Operations' list. The main area displays a table of drivers with columns: Description, Language, OS, Signed, and Importation date. The 'Dell Wireless 1515 Wireless-N Adapter' is selected. The 'Next >' button is highlighted at the bottom right.

Description	Language	OS	Signed	Importation date
Atester - Realtek PCIe FE Family Controller - Version: 03/11/2016,10.008.0311.2016	Multi	Windows 10 64	Yes	2016/06/02 09:55:59
ACPI Module Device - Version: 06/21/2006,6.2.9200.16384	Multi	Windows 7 64 - Windows 8 64	Yes	2014/09/30 17:20:11
ALPS Integrated Bluetooth Device - Version: 06/21/2006,6.2.9200.16420	Multi	Windows 7 64 - Windows 8 64	Yes	2014/09/30 16:57:26
AMD High Definition Audio Device - Version: 06/29/2012,8.0.0.8806	Multi	Windows 7 64 - Windows 8 64	Yes	2014/09/30 16:21:38
AMD Radeon HD 6850 - Version: 07/04/2012, 8.981.0.0000	Multi	Windows 7 64 - Windows 8 64	Yes	2014/09/30 16:23:15
AMD SATA Controller - Version: 03/29/2015,1.2.001.0402	Multi	Multi	Yes	2017/07/20 10:47:29
AMD-RAID Bottom Device - Version: 11/08/2016,8.1.0.00026	Multi	Multi	Yes	2017/07/20 11:22:52
AMD-RAID Controller [storport] - Version: 11/08/2016,8.1.0.00026	Multi	Multi	Yes	2017/07/20 11:23:08
ASIX AX88178 USB2.0 to Gigabit Ethernet Adapter - Version: 11/24/2010, 1.14.3.8	Multi	Windows 8 64 - Windows 10 64	Yes	2016/06/07 14:25:51
ATI High Definition Audio Device - Version: 04/06/2010,7.11.0.7705	Multi	Windows 7 64 - Windows 8 64	Yes	2014/09/30 16:23:55
Bluetooth Audio Device - Version: 06/21/2012,8.0.0000.0200	Multi	Windows 7 64 - Windows 8 64	Yes	2014/09/30 16:44:37
Bluetooth AVRCP Device - Version: 06/21/2012,8.0.0000.0200	Multi	Windows 7 64 - Windows 8 64	Yes	2014/09/30 16:45:09
Conexant HD Audio - Version: 03/10/2011,8.50.4.0	Multi	Windows 7 64 - Windows 8 64	Yes	2014/09/30 16:54:35
Dell Wireless 1515 Wireless-N Adapter - Version: 06/14/2012,10.0.0.67	Multi	Windows 7 64 - Windows 8 - Win...	Yes	2014/09/30 15:50:36
IDE Channel - Version: 06/21/2006,6.2.9200.16384	Multi	Windows 7 64 - Windows 8 64	Yes	2014/09/30 17:05:39
Intel(R) C600 series chipset SATA AHCI Controller - Version: 09/03/2013,3.8.0.1...	Multi	Windows 7 64	No	2015/05/20 14:47:48
Intel USB - Version: 08/26/2011, 9.3.0.1011	Multi	Windows 7 64 - Windows 8 64	Yes	2014/09/30 17:23:01
Intel(R) 5 Series/3400 Series Chipset Family USB Enhanced Host Controller - 3B34 - ...	Multi	Windows 7 64 - Windows 8 64	Yes	2014/09/30 17:05:18
Intel(R) 6 Series/C200 Series Chipset Family SMBus Controller - 1C22 - Version: 09/1...	Multi	Windows 7 - Windows 7 64	Yes	2014/11/25 11:26:21
Intel(R) 6 Series/C200 Series Chipset Family SMBus Controller - 1C22 - Version: 09/1...	Multi	Windows 7 64	Yes	2014/11/25 14:26:32
Intel(R) 6 Series/C200 Series Chipset Family USB Enhanced Host Controller - 1C26 - ...	Multi	Windows 7 64 - Windows 8 64	Yes	2014/09/30 16:56:11
Intel(R) 8 Series/C220 Chipset Family SATA AHCI Controller - Version: 07/25/2014,1...	Multi	Windows 7 64 - Windows 8 64 - ...	No	2015/08/27 13:29:06
Intel(R) 82579LM Gigabit Network Connection - Version: 12/21/2010,11.8.84.0	Multi	Windows 7 - Windows 7 64	Yes	2014/11/25 11:25:45
Intel(R) 82579V Gigabit Network Connection - Version: 12/21/2010,11.8.84.0	Multi	Windows 7 64	Yes	2014/11/25 14:27:08
Intel(R) Desktop/Workstation/Server Express Chipset SATA AHCI Controller - Version...	Multi	Windows 7 64 - Windows 8 64	Yes	2014/09/30 17:22:41
Intel(R) Management Engine Interface - Version: 07/07/2015,11.0.0.1157	Multi	Multi	No	2015/08/27 12:33:15
Intel(R) Management Engine Interface - Version: 10/19/2010,7.0.0.1144	Multi	Windows 7 64	Yes	2014/11/25 14:24:46
Microsoft Trusted Audio Drivers - Version: 07/13/2009,6.1.7600.16385	Multi	Windows 7 - Windows 7 64	Yes	2014/11/25 11:27:39
MICROSTORE - AMD-RAID Bottom Device - Version: 11/08/2016,8.1.0.00026	Multi	Multi	Yes	2017/08/11 11:38:42
MICROSTORE - AMD-RAID Controller [storport] - Version: 11/08/2016,8.1.0.00026	Multi	Multi	Yes	2017/08/11 11:39:03

Output: 17 Warning(s) - 0 Error(s)

```

[17/08/2018 - 10:58:25] Starting application properties wizard...
[17/08/2018 - 10:58:25] Displaying applications by Categories: '1083' items
[17/08/2018 - 10:58:26] Starting driver properties wizard...
[17/08/2018 - 10:58:26] Displaying drivers by Categories: '42' items
[17/08/2018 - 11:27:07] Starting to edit driver: Dell Wireless 1515 Wireless-N Adapter - Version: 06/14/2012,10.0.0.67
[17/08/2018 - 11:27:35] Starting driver addition wizard...
  
```

5. The wizard will inform you once the drivers will have been removed from the database.

Note: Deletion is permanent. There is no method to undo a delete. Be careful when selecting drivers for deletion and review them.

Exporting a driver ("Export Driver(s)" operation)

In order to export one or more drivers:

1. Click on the "Drivers" tab ¹, or on the "Drivers" item in the Database tree-view ¹
2. Click on the "Export driver(s)" operation ²
3. Select the driver(s) you want to export in the list on the right ³. If you don't see a driver you recently added, press F5 to refresh the list contents.
4. Click on "Next >" button ⁴

Deployment Suite Console

Welcome to SDS Console Export Driver Wizard
Please select driver(s) to export

Description	Language	OS
<input checked="" type="checkbox"/> A tester - Realtek PCIe FE Family Controller - Version: 03/11/2016,10.008.0311.2016	Multi	Windows 10 64
<input type="checkbox"/> ACPI Module Device - Version: 06/21/2006,6.2.9200.16384	Multi	Windows 7 64 - Windows 8 64
<input type="checkbox"/> ALPS Integrated Bluetooth Device - Version: 06/21/2006,6.2.9200.16420	Multi	Windows 7 64 - Windows 8 64
<input type="checkbox"/> AMD High Definition Audio Device - Version: 06/29/2012,8.0.0.8806	Multi	Windows 7 64 - Windows 8 64
<input type="checkbox"/> AMD Radeon HD 6850 - Version: 07/04/2012, 8.981.0.0000	Multi	Windows 7 64 - Windows 8 64
<input type="checkbox"/> AMD SATA Controller - Version: 03/29/2015,1.2.001.0402	Multi	Multi
<input type="checkbox"/> AMD-RAID Bottom Device - Version: 11/08/2016,8.1.0.00026	Multi	Multi
<input type="checkbox"/> AMD-RAID Controller [storport] - Version: 11/08/2016,8.1.0.00026	Multi	Multi
<input type="checkbox"/> ASIX AX88178 USB2.0 to Gigabit Ethernet Adapter - Version: 11/24/2010, 1.14.3.8	Multi	Windows 8 64 - Windows 10 64
<input type="checkbox"/> ATI High Definition Audio Device - Version: 04/06/2010,7.11.0.7705	Multi	Windows 7 64 - Windows 8 64
<input type="checkbox"/> Bluetooth Audio Device - Version: 06/21/2012,8.0.0000.0200	Multi	Windows 7 64 - Windows 8 64
<input type="checkbox"/> Bluetooth AVRCP Device - Version: 06/21/2012,8.0.0000.0200	Multi	Windows 7 64 - Windows 8 64
<input type="checkbox"/> Conexant HD Audio - Version: 03/10/2011,8.50.4.0	Multi	Windows 7 64 - Windows 8 64
<input checked="" type="checkbox"/> Dell Wireless 1515 Wireless-N Adapter - Version: 06/14/2012,10.0.0.67	Multi	Windows 7 64 - Windows 8 - Windows 8 64
<input type="checkbox"/> IDE Channel - Version: 06/21/2006,6.2.9200.16384	Multi	Windows 7 64 - Windows 8 64
<input type="checkbox"/> Intel(R) C600 series chipset SATA AHCI Controller - Version: 09/03/2013,3.8.0.1108	Multi	Windows 7 64
<input type="checkbox"/> Intel USB - Version: 08/26/2011, 9.3.0.1011	Multi	Windows 7 64 - Windows 8 64
<input type="checkbox"/> Intel(R) 5 Series/3400 Series Chipset Family USB Enhanced Host Controller - 3B34 - Version: 08/20/2009, 9.1.1.1020	Multi	Windows 7 64 - Windows 8 64
<input type="checkbox"/> Intel(R) 6 Series/C200 Series Chipset Family SMBus Controller - 1C22 - Version: 09/10/2010, 9.2.0.1011	Multi	Windows 7 - Windows 7 64
<input type="checkbox"/> Intel(R) 6 Series/C200 Series Chipset Family SMBus Controller - 1C22 - Version: 09/10/2010, 9.2.0.1011	Multi	Windows 7 64
<input type="checkbox"/> Intel(R) 6 Series/C200 Series Chipset Family USB Enhanced Host Controller - 1C26 - Version: 12/21/2010, 9.2.0.1021	Multi	Windows 7 64 - Windows 8 64
<input type="checkbox"/> Intel(R) 8 Series/C220 Series Chipset Family SATA AHCI Controller - Version: 07/25/2014,13.2.4.1000	Multi	Windows 7 64 - Windows 8 64 - Windows 8 64
<input checked="" type="checkbox"/> Intel(R) 82579LM Gigabit Network Connection - Version: 12/21/2010,11.8.84.0	Multi	Windows 7 - Windows 7 64
<input type="checkbox"/> Intel(R) 82579V Gigabit Network Connection - Version: 12/21/2010,11.8.84.0	Multi	Windows 7 64
<input type="checkbox"/> Intel(R) Desktop/Workstation/Server Express Chipset SATA AHCI Controller - Version: 07/09/2012,11.5.0.1207	Multi	Windows 7 64 - Windows 8 64
<input type="checkbox"/> Intel(R) Management Engine Interface - Version: 07/07/2015,11.0.0.1157	Multi	Multi
<input type="checkbox"/> Intel(R) Management Engine Interface - Version: 10/19/2010,7.0.0.1144	Multi	Windows 7 64
<input type="checkbox"/> Microsoft Trusted Audio Drivers - Version: 07/13/2009,6.1.7600.16385	Multi	Windows 7 - Windows 7 64
<input type="checkbox"/> MICROSTORE - AMD-RAID Bottom Device - Version: 11/08/2016,8.1.0.00026	Multi	Multi
<input type="checkbox"/> MICROSTORE - AMD-RAID Controller [storport] - Version: 11/08/2016,8.1.0.00026	Multi	Multi

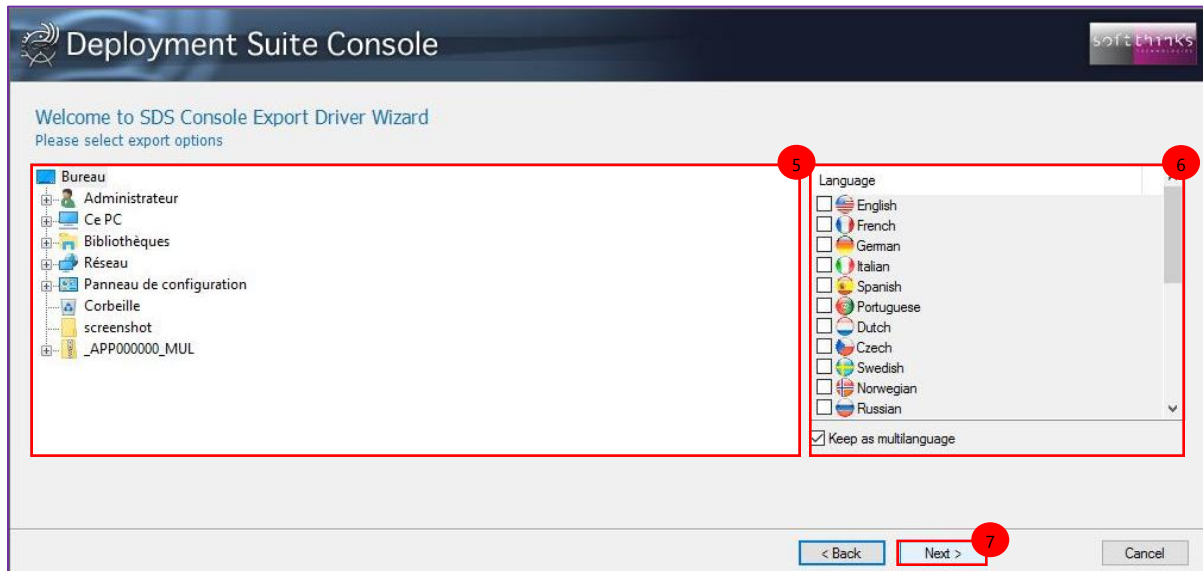
< Back **Next >** Cancel

Application properties | Add driver | Database information | Delete driver(s) | **Export driver(s)** | Computer: <Owner Last Name> | Delete computer(s)

Output: 17 Warning(s) - 0 Error(s)

```
[17/08/2018 - 10:58:26] Starting driver properties wizard...
[17/08/2018 - 10:58:26] Displaying drivers by Categories: 42 items
[17/08/2018 - 11:27:07] Starting to edit driver: Dell wireless 1515 Wireless-N Adapter - Version: 06/14/2012,10.0.0.67
[17/08/2018 - 11:52:35] Starting driver addition wizard...
[17/08/2018 - 11:55:20] Starting driver(s) deletion wizard...
[17/08/2018 - 12:14:00] Starting driver export wizard...
```

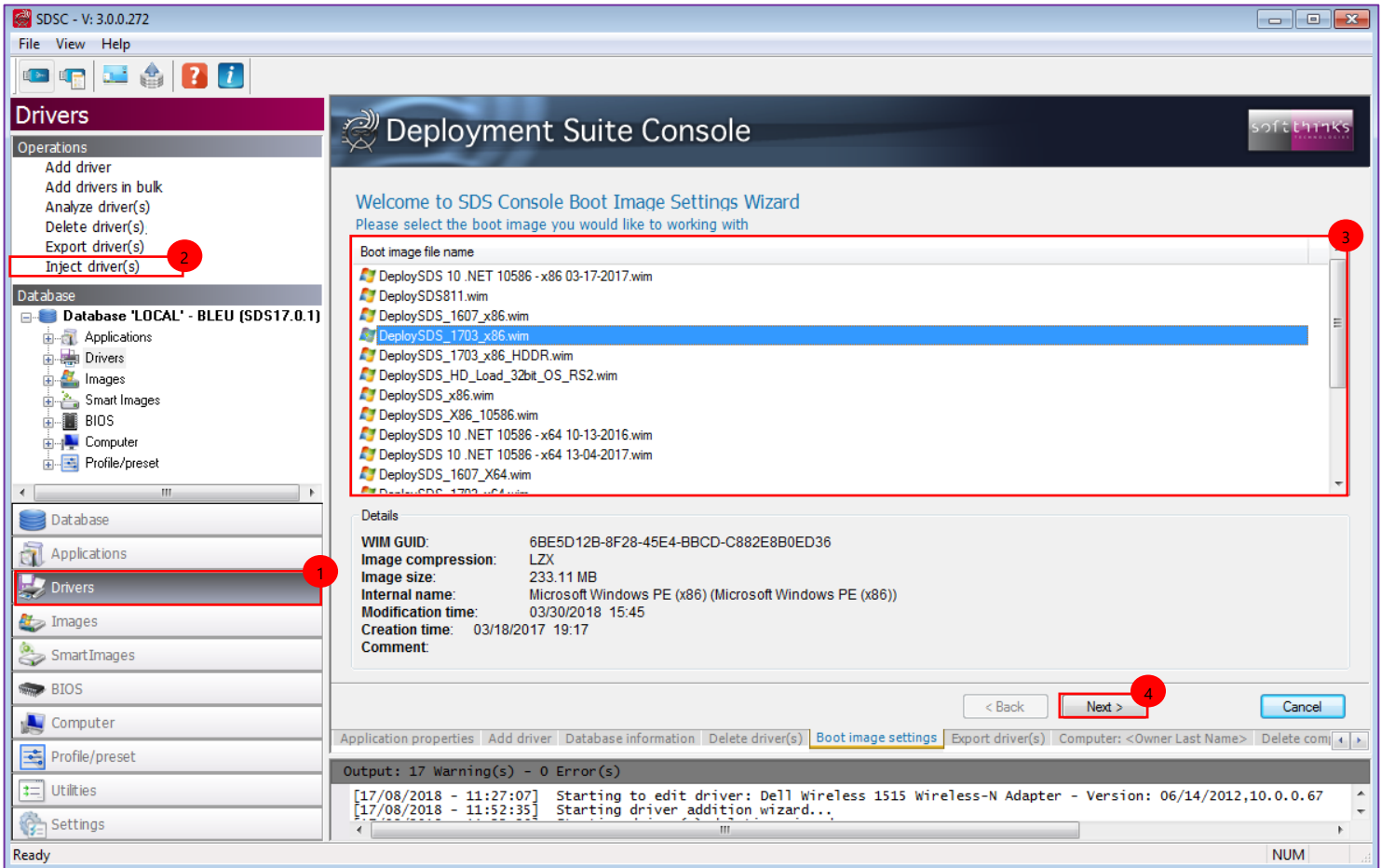
5. Select the destination folder where the ZIP files will be created 5
6. Select the languages supported 6, or check the "Keep as Multilanguage" option to allow the package to work with all languages
7. Click on the "Next" button 7



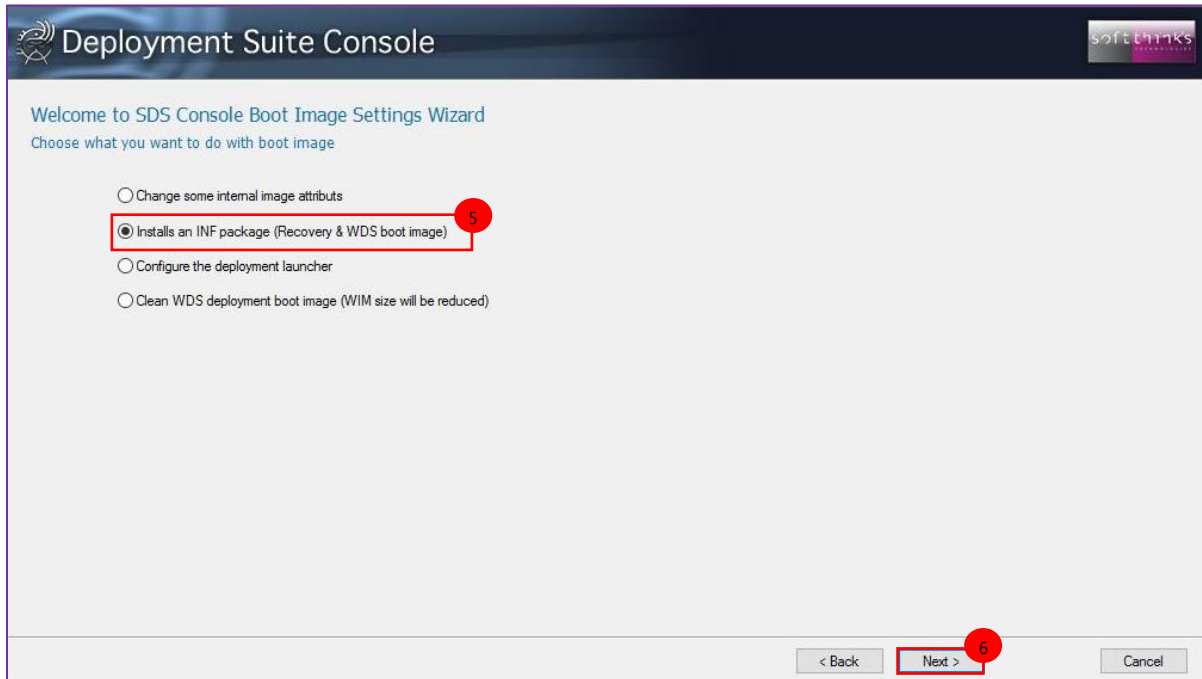
8. The wizard will display a progress screen and then a confirmation screen when the driver(s) are successfully exported.

Injecting drivers ("Inject Driver(s)" operation)

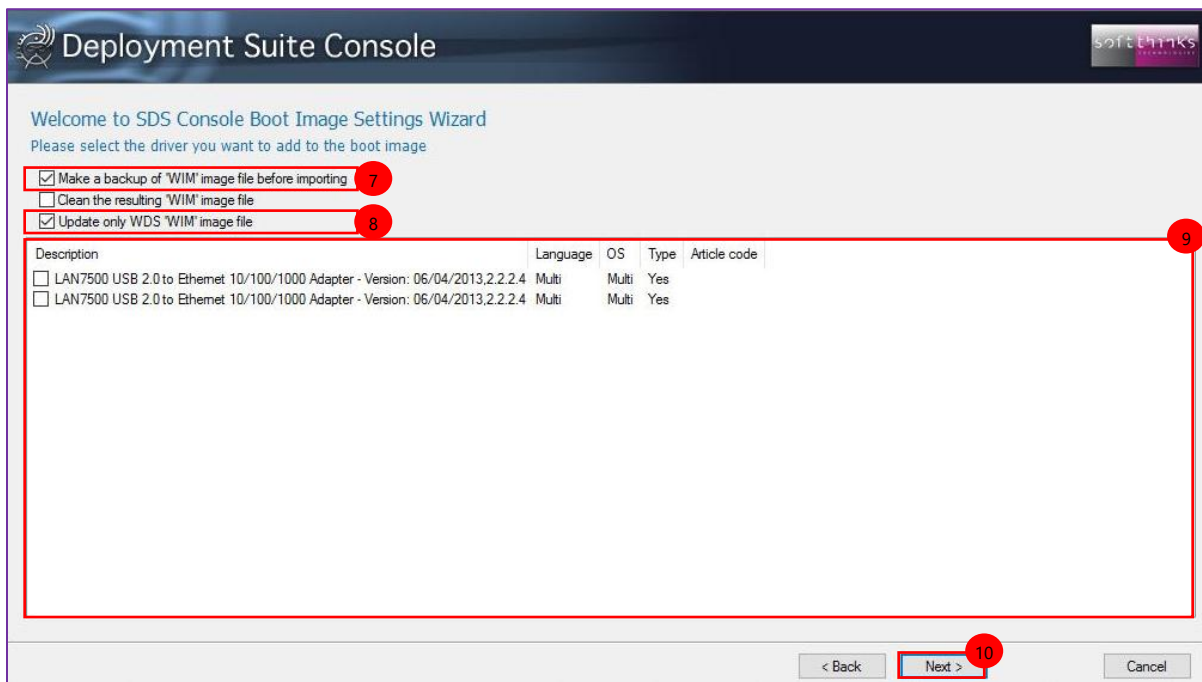
1. Click on "Drivers" tab 1
2. Click on the "Inject driver(s)" operation 2
3. Select the boot image into which you want to inject the driver(s) in the list 3
4. Click on the "Next >" button 4



5. Choose the "Install an INF package (Recovery & WDS boot image)" option 5
6. Click on the "Next >" button 6



7. Check the options "Make a backup of 'WIM' image file before importing" 7
8. Check the option "Update only WDS 'WIM' image file" 8
9. Select the driver(s) to inject 9
10. Click on the "Next >" button 10



11. The wizard will notify you once the process is completed

Analyzing drivers ("Analyze driver(s)" operation)

This tool provides an easy way to identify and remove duplicate drivers, typically drivers that support the same PNP IDs but are of different description or names in the database.

1. Click on the "Drivers" tab or the "Drivers" item in the Database tree-view
2. Click on the "Analyze driver(s)" operation
3. Select the options to fine tune the analysis (driver type, driver PNP, ignore OS, ignore deactivated PNP)
4. Click on the "Analyze" button

The screenshot shows the 'SDS Console Analyze Drivers Wizard' interface. On the left, the 'Drivers' tab is selected in the 'Database' tree-view. The 'Operations' list includes 'Analyze driver(s)', which is highlighted. The 'Type' dropdown is set to 'All', and the 'PNP' checkbox is checked. The 'Ignore OS' and 'Ignore deactivated PNP' checkboxes are also visible. The 'Analyze' button is located at the bottom right. The main window displays a list of drivers, including 'ALPS Integrated Bluetooth Device', 'AMD High Definition Audio Device', 'ATI High Definition Audio Device', 'HDAUDIO\FUNC_018VEN_1002&DEV_AA01&SUBSYS_00AA0100&REV_1000', 'WDMAUDIO_COPYFILESONLYID', 'SW\{EEC12DB6-AD9C-4168-8658-B03DAEF417FE}', 'HDAUDIO\FUNC_018VEN_1002&DEV_AA01&SUBSYS_00AA0100&REV_1001', 'HDAUDIO\FUNC_018VEN_1002&DEV_791A&SUBSYS_00791A00&REV_1000', 'HDAUDIO\FUNC_018VEN_1002&DEV_793C&SUBSYS_00793C00&REV_1000', 'PNP in more (3)', 'HDAUDIO\FUNC_018VEN_1002&DEV_AA09', 'HDAUDIO\FUNC_018VEN_1002&DEV_AA11', 'HDAUDIO\FUNC_018VEN_1002&DEV_AA19', 'PNP in less (5)', 'HDAUDIO\FUNC_018VEN_1002&DEV_AA01&SUBSYS_00AA0100&REV_1003', 'HDAUDIO\FUNC_018VEN_1002&DEV_AA01&SUBSYS_104D6800&REV_1002', 'HDAUDIO\FUNC_018VEN_1002&DEV_AA01&SUBSYS_104D6900&REV_1002', 'HDAUDIO\FUNC_018VEN_1002&DEV_AA01&SUBSYS_104D6A00&REV_1002', 'HDAUDIO\FUNC_018VEN_1002&DEV_AA01&SUBSYS_104D6B00&REV_1002', 'Bluetooth Audio Device', 'Conexant HD Audio', 'NVIDIA High Definition Audio', 'Microsoft Trusted Audio Drivers', 'AMD-RAID Bottom Device', 'AMD-RAID Controller [storport]', 'ATI High Definition Audio Device', 'Bluetooth Audio Device', 'Conexant HD Audio', 'Dell Wireless 1515 Wireless-N Adapter', and 'Intel USB'. The 'Output' section at the bottom shows '17 Warning(s) - 0 Error(s)' and 'Driver thread analysis started...'. The status bar at the bottom indicates 'Ready'.

The drivers are listed ⁵ while they are parsed and the progress bar ⁶ shows the current status (also in the tab ⁷ to follow it when you switch between views). You can stop the analysis at any moment by clicking on the « Cancel » button ⁸.

Deployment Suite Console

SDS Console Analysing Drivers Wizard

Please select options to fine tune analysing process

Type: Sound/Multimedia PNP ☐ Ignore OS ☐ Ignore deactivated PNP Analyse

Realtek High Definition audio - Version: 11/20/2012, (871 PNP - Windows 7 64 - SND\MUL\SND000002)

Realtek High Definition Audio - Version: 11/20/2012, (7941 PNP - Windows 7 64 - SND\MUL\SND000003)

Intel(R) Display Audio - Version: 09/09/2014, 6.16.00.3154 (16 PNP - Windows 10 64 - SND\MUL\SND000005)

Realtek High Definition Audio - Version: 08/22/2013, (2439 PNP - Windows 7 64 - SND\MUL\SND000007)

Realtek High Definition Audio - Version: 11/20/2012, (871 PNP - Windows 7 64 - SND\MUL\SND000002)

Realtek High Definition Audio - Version: 11/20/2012, (1941 PNP - Windows 7 64 - SND\MUL\SND000003)

Realtek High Definition Audio - Version: 07/08/2014, 6.0.1.7288 (3083 PNP - Windows 7 64 - SND\MUL\SND000012)

PNP identical

PNP in more

PNP in less

HDAUDIO\FUNC_01&VEN_10EC&DEV_0269&SUBSYS_144DC738

HDAUDIO\FUNC_01&VEN_10EC&DEV_0892&SUBSYS_18495892

Realtek High Definition Audio - Version: 02/02/2016, 6.0.1.7737 (5460 PNP - Windows 10 64 - SND\MUL\SND000010)

Intel(R) Display Audio - Version: 03/31/2015, 6.16.00.3174 (12 PNP - Windows 7 64 - SND\MUL\SND000011)

Realtek High Definition Audio - Version: 07/08/2014, 6.0.1.7288 (3083 PNP - Windows 7 64 - SND\MUL\SND000012)

Intel(R) Display Audio - Version: 03/31/2015, 6.16.00.3174 (12 PNP - Windows 7 64 - SND\MUL\SND000017)

Intel(R) Display Audio - Version: 03/31/2015, 6.16.00.3174 (12 PNP - Windows 7 64 - SND\MUL\SND000018)

More recent driver that support less PNP than an older

This one support more than 3000 PNP but does not support 2 of the SND000007.

ANALYSING STILL IN PROGRESS

Cancel

Driver properties **Analyse Drivers** **< Back** **Next >** **Cancel**

Deployment Suite Console

SDS Console Analysing Drivers Wizard

Please select options to fine tune analysing process

Type: Video PNP ☐ Ignore OS ☐ Ignore deactivated PNP Analyse

NVIDIA GeForce GT 555M - Version: 08/07/2015, 10.18.13.5382 (87 PNP - Windows 7 64 - VID\MUL\VID000007)

NVIDIA GeForce GT 555M - Version: 08/07/2015, 10.18.13.5382 (87 PNP - Windows 7 64 - VID\MUL\VID000008)

NVIDIA GeForce GT 555M - Version: 08/07/2015, 10.18.13.5382 (87 PNP - Windows 8 64 - VID\MUL\VID000021)

NVIDIA GeForce GT 555M - Version: 10/23/2013, 9.18.13.3165 (53 PNP - Windows 7 64 - VID\MUL\VID000002)

NVIDIA GeForce GT 555M - Version: 10/23/2013, 9.18.13.3165 (54 PNP - Windows 7 64 - VID\MUL\VID000005)

NVIDIA GeForce GTX 460M - Version: 01/09/2015, 9.18.13.4725 (82 PNP - Windows 8 64 - VID\MUL\VID000048)

NVIDIA GeForce GT 555M - Version: 08/07/2015, 10.18.13.5382 (87 PNP - Windows 8 64 - VID\MUL\VID000021)

NVIDIA GeForce GTX 460M - Version: 01/09/2015, 9.18.13.4725 (82 PNP - Windows 8 64 - VID\MUL\VID000049)

PNP identical

PNP in less

PNP in more

NVIDIA GeForce GTX 460M - Version: 01/09/2015, 9.18.13.4725 (82 PNP - Windows 8 64 - VID\MUL\VID000049)

NVIDIA GeForce GT 555M - Version: 08/07/2015, 10.18.13.5382 (87 PNP - Windows 8 64 - VID\MUL\VID000021)

NVIDIA GeForce GTX 460M - Version: 01/09/2015, 9.18.13.4725 (82 PNP - Windows 8 64 - VID\MUL\VID000048)

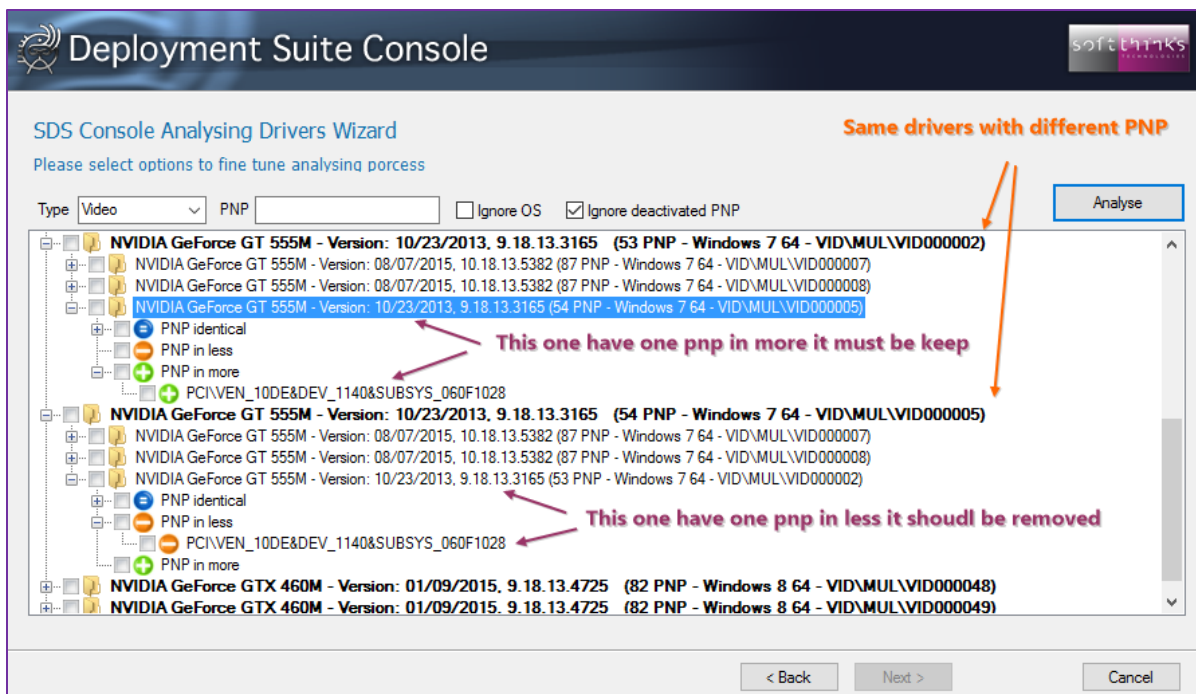
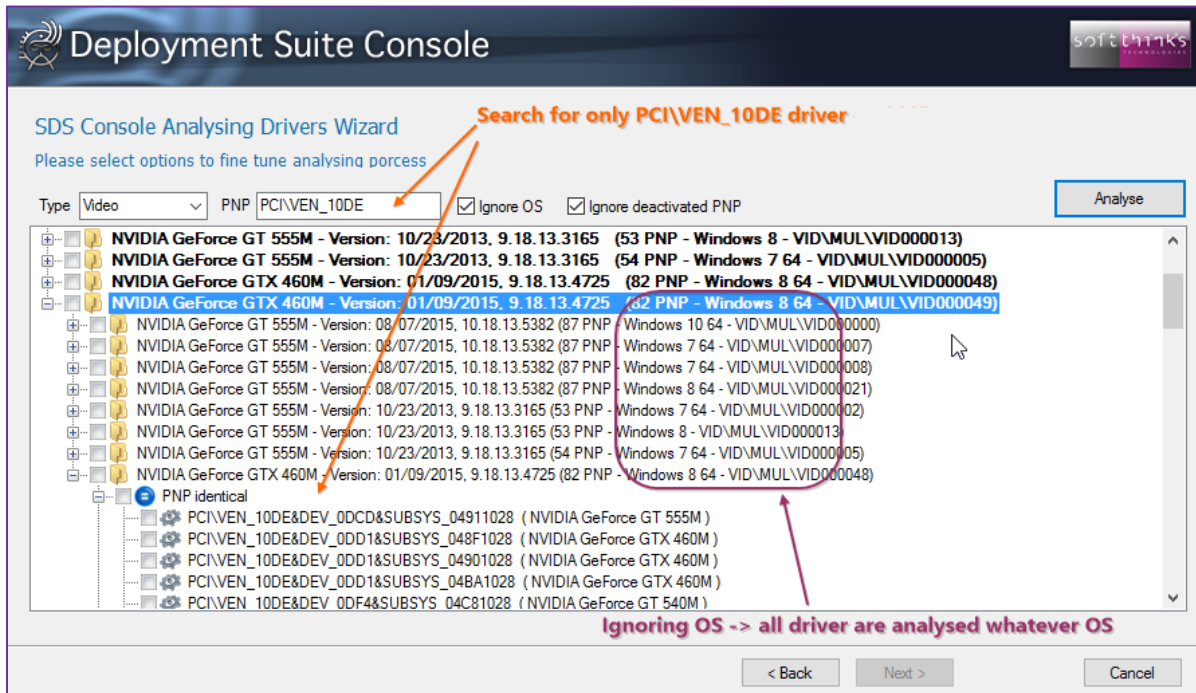
PNP identical

PNP in less

PNP in more

Exactly same PNP nothing more nothing less one must be removed

< Back **Next >** **Cancel**



Deployment Suite Console

SDS Console Analysing Drivers Wizard

Please select options to fine tune analysing porcess

Type: Video PNP ☒ Ignore OS ☐ Ignore deactivated PNP Analyse

- AMD Radeon R7 M270 - Version: 06/22/2015, 15.200.1045.0000 (12 PNP - Windows 8 - VID\MUL\VID000012)
- AMD Radeon R7 M270 - Version: 06/22/2015, 15.200.1045.0000 (13 PNP - Windows 8 64 - VID\MUL\VID000019)
- Intel(R) HD Graphics - Version: 02/14/2012, 8.15.10.2653 (13 PNP - Windows 10 64 - VID\MUL\VID000056)
- Intel(R) HD Graphics - Version: 03/23/2016, 10.18.14.4414 (114 PNP - Windows 7 64 - VID\MUL\VID000006)
- Intel(R) HD Graphics - Version: 03/23/2016, 10.18.14.4414 (114 PNP - Windows 7 64 - VID\MUL\VID000009)
- Intel(R) HD Graphics - Version: 03/23/2016, 10.18.14.4414 (114 PNP - Windows 7 64 - VID\MUL\VID000010)
- Intel(R) HD Graphics - Version: 05/25/2016, 20.19.15.4463 (248 PNP - Windows 10 64 - VID\MUL\VID000001)
- Intel(R) HD Graphics - Version: 03/23/2016, 10.18.14.4414 (114 PNP - Windows 7 64 - VID\MUL\VID000006)
- Intel(R) HD Graphics - Version: 03/23/2016, 10.18.14.4414 (114 PNP - Windows 7 64 - VID\MUL\VID000009)
- Intel(R) HD Graphics - Version: 03/23/2016, 10.18.14.4414 (114 PNP - Windows 7 64 - VID\MUL\VID000010)
- Intel(R) HD Graphics - Version: 05/25/2016, 20.19.15.4463 (248 PNP - Windows 10 64 - VID\MUL\VID000054)
- Intel(R) HD Graphics - Version: 08/21/2012, 9.17.10.2843 (54 PNP - Windows 7 - VID\MUL\VID000047)
- Intel(R) HD Graphics - Version: 09/26/2012, 9.17.10.2867 (13 PNP - Windows 7 64 - VID\MUL\VID000003)
- Intel(R) HD Graphics - Version: 09/29/2016, 20.19.15.4531 (32 PNP - Windows 10 64 - VID\MUL\VID000057)
- Intel(R) HD Graphics - Version: 09/29/2016, 20.19.15.4531 (69 PNP - Windows 8 - VID\MUL\VID000011)
- Intel(R) HD Graphics - Version: 09/29/2016, 20.19.15.4531 (69 PNP - Windows 8 64 - VID\MUL\VID000018)
- Intel(R) HD Graphics - Version: 11/26/2013, 10.18.10.3366 (1 PNP - Windows 8 - VID\MUL\VID000035)
- Intel(R) HD Graphics - Version: 11/26/2013, 10.18.10.3366 (1 PNP - Windows 8 - VID\MUL\VID000046)

WARNING VID00054 is the same as VID00001
so remove VID00001 and set properly VID000054 OS !!

Analysing scan deactivated PNP and show the VID00001 -> it is fully commented why !!!!!

It support less of PNP than VID00001 and is multi ptaform we should remove this one VID00006 and activate the more recent one !!

```

OpenCL_Gpu.Copy64 == 11 ; OpenCL Drivers in System32
OpenCL_Gpu.Copy32 == 10, SysWow64

OpenCL_Cpu_System.Copy64 == 11 ; OpenCL Drivers in System32
OpenCL_Cpu_Root.Copy == 16426, Common Files\Intel\OpenCL\bin\
OpenCL_Cpu_Bin_x64.Copy64 == 16426, Common Files\Intel\OpenCL\bin\x64\
OpenCL_Cpu_Bin_Tbb.Copy64 == 16426, Common Files\Intel\OpenCL\bin\x64\tbb
OpenCL_Cpu_System.Copy32 == 10, SysWow64
OpenCL_Cpu_Bin_x86.Copy32 == 16426, Common Files\Intel\OpenCL\bin\x86
OpenCL_Cpu_Bin_Tbb.Copy32 == 16426, Common Files\Intel\OpenCL\bin\x86\tbb
OpenCL_Cpu_Common.Copy == 16426, Common Files\Intel\OpenCL\bin\common

MSDK_w7.copy == 16422, Intel\Media SDK ; Program Files
MSDK_w8.copy == 16422, Intel\Media SDK ; Program Files

; Driver information
;
[Manufacturer]
%Intel% = IntelGfx, NTamd64.6.1, NTamd64.6.2, NTamd64.6.3, NTamd64.10.0
;
; Windows 7 Install - DI Only
;
[IntelGfx.NTamd64.6.1]
; BDW HW
%iBDWULTGT1% == iBDWM_w7, PCI\VEN_8086&DEV_1606&SUBSYS_06BE1028;
%iBDWULTGT2% == iBDWM_w7, PCI\VEN_8086&DEV_1616&SUBSYS_06BE1028;

```

DRIVER IS MULTI platform not 10 x64 only It should be set properly in DB!!

Images

You can explore the Images of your database by clicking on the "Images" tab ¹, or directly on the "Images" object in the Database tree-view ²:

The screenshot shows the Deployment Suite Console interface. On the left, the 'Database' tree-view is expanded to 'Images' (labeled 2). The main panel displays 'SDS Console Images properties' with a table of images (labeled 3). A red box highlights the 'Details' section (labeled 4) for a selected image, showing its path (labeled 5), operating system, size, signature, MD5 checksum, and default image status. The 'Next >' button is labeled 7.

Description	Disk size (MB)	Language	OS	Build
Apple Inc. - Macmini7,1 (Mac-35C5E08120C7EEAF) - Ver:10.12.5	8376.799	English	MacOS X	10.12.5
Dell Inc. - Vostro 2520 - testBCD without Resume	7890.102	French	Windows 8 64	6.2.9200.16384
Apple Inc. - MacBookPro9,2 (Mac-6F01561E16C75D06) - Test titi - Ver:10.8.5	10378.750	English	MacOS X	
Apple Inc. - MacBookPro9,2 (Mac-6F01561E16C75D06) - 29/05/2017 - Ver:10.8.5	10209.973	English	MacOS X	
Dell Inc. - Inspiron 5758 - Cp7 - compact -24/05/2017	24415.837	French	Windows 10 64	10.0.15063.0
Dell Inc. - Inspiron 3847 - 19052017	25219.933	French	Windows 10 64	10.0.15063.0
TEST SBAR - Generic - GPT x86 - install with autounattend - Romain	3012.142	English	Windows 10	10.0.15063.0
TEST SBAR - Generic - MBR x86 - install with autounattend	3045.561	English	Windows 10	10.0.15063.0
TEST SBAR - Generic - GPT x64 - install with autounattend	4109.901	English	Windows 10 64	10.0.15063.0
TEST SBAR - Generic - MBR x64 - install with autounattend	4104.119	English	Windows 10 64	10.0.15063.0
Dell Inc. - Inspiron 13-7353 Redstone 2 Lucky	15288.400	English	Windows 10 64	10.0.15063.0
TOSHIBA - SATELLITE P50-C - test migration - 25042017	45865.996	French	Windows 10 64	10.0.15063.0
Dell Inc. - XPS 11 9P33 - test migration - 19042017	35678.323	French	Windows 10 64	10.0.15063.0
Dell Inc. - XPS 11 9P33 - Creator Update - 14-04-2017	47346.729	French	Windows 10 64	10.0.15063.0
Alienware - Alienware X51 - test migration - 12042017	26883.658	French	Windows 10 64	10.0.15063.0
Dell Inc. - Inspiron 13-5368 - 11042016	23083.465	English	Windows 10 64	10.0.15063.0
LENOVO - 20378 - 11042017	22476.565	French	Windows 10 64	10.0.15063.0
Dell Inc. - Inspiron 5758 - test migration - 11042017	46936.619	French	Windows 10 64	10.0.15063.0
Dell Inc. - Inspiron 13-5368 - test migration - 10042017	39030.980	English	Windows 10 64	10.0.15063.0

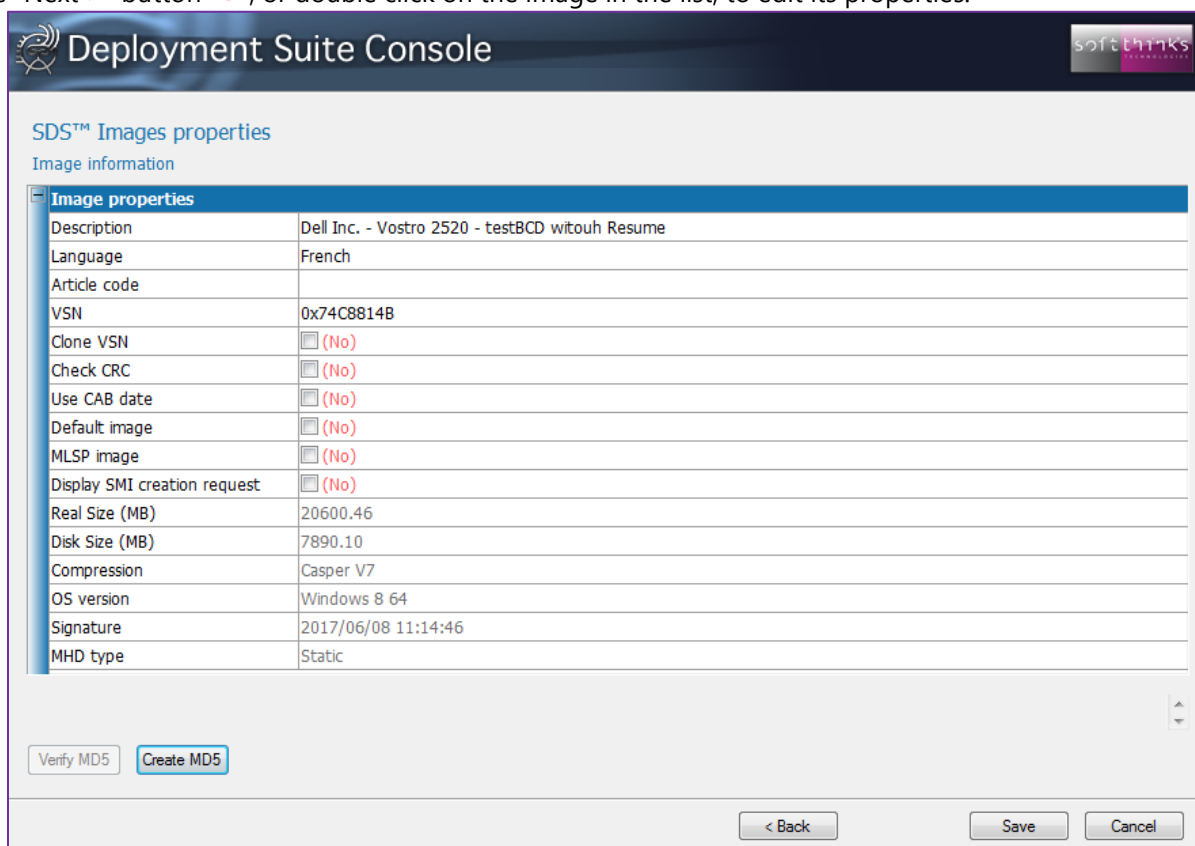
Details:

- Path: Z:\SDKDB\BIS\BIS_IM000020
- Operating System: Windows 8 64 (UEFI)
- OS size: 20600.46 MB
- Signature: 2017/06/08 11:14:46
- MD5 Checksum activated: No
- Default image: No

When you select an image in the list ³, you will see all of its details below ⁴, including its path that you can open by clicking on the link ⁵.

You can export the list of the images by clicking on the button ⁶ and then selecting the output file path and format (CSV or TXT).

Click on the “Next >” button 7, or double click on the image in the list, to edit its properties:



Deployment Suite Console

SDS™ Images properties

Image information

Image properties	
Description	Dell Inc. - Vostro 2520 - testBCD witouh Resume
Language	French
Article code	
VSN	0x74C8814B
Clone VSN	<input type="checkbox"/> (No)
Check CRC	<input type="checkbox"/> (No)
Use CAB date	<input type="checkbox"/> (No)
Default image	<input type="checkbox"/> (No)
MLSP image	<input type="checkbox"/> (No)
Display SMI creation request	<input type="checkbox"/> (No)
Real Size (MB)	20600.46
Disk Size (MB)	7890.10
Compression	Casper V7
OS version	Windows 8 64
Signature	2017/06/08 11:14:46
MHD type	Static

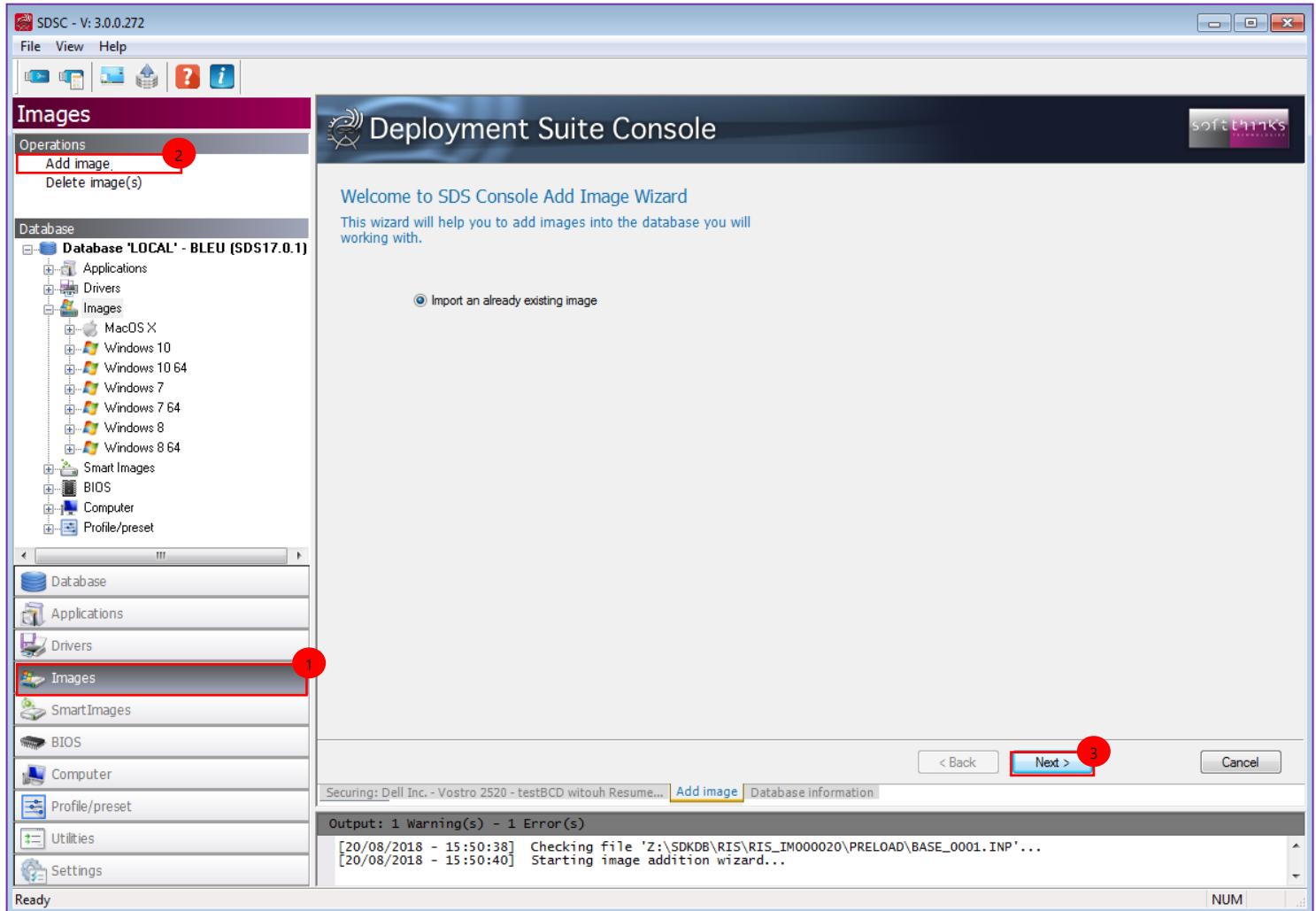
Verify MD5 Create MD5

< Back Save Cancel

Adding an image ("Add image" operation)

(**Note:** Most of the time images will be created directly from the computer with the source image on it through the Welcome Screen and the Image Creation page and not the Console. These instructions are for information purposes only.)

1. Click on the "Images" tab 1
2. Click on the "Add Image" operation 2
3. Click on the "Next >" button 3



4. From the pull-down menu **4**, select the volume letter corresponding to the hard disk that will be imported
5. Select the image format you wish to use **5**:
 - **Vista & new OS images (WIM):** Microsoft's Windows Image format. File based image format compatible with Windows Vista and newer OS. WIM files modified using standard Microsoft OPK Tools and by SDS. This is the format of the WinPE boot image.
 - **XP/2000/2003 images only:** Casper, the SoftThinks standard format used in current releases of SDS, very reliable, robust and time tested. The contents of these files cannot be modified post creation.
 - **VD:** Virtual Disk, a format from SoftThinks which can be used for static images and has very good speed advantages. The contents cannot be modified.
6. Specify if you want to split the image **6**, and if so the size of the chunks

Note: The option for Splitting Image in 650MB chunks is for use with WIM format – if this option is chosen, the WIM file can no longer be modified – a limitation imposed by Microsoft. However, smaller file sizes will reduce the network traffic and allow any type of optical media to be used to create backups. It is recommended that the smaller size be used.
7. Click on the "Next >" button **7**

The screenshot shows the 'Deployment Suite Console' window with the 'Add Image Wizard' active. The title bar reads 'Welcome to SDS Console Add Image Wizard' and 'Please select the disk and compression method to use.' The interface includes several configuration options:

- A text field for 'Disk id: 1 - Model: - Size: 0.00 GB' is highlighted with a red box and a red circle labeled **4**.
- A checkbox labeled 'Splitting image in' is checked, with a dropdown menu showing '650' and 'MB chunk' highlighted with a red box and a red circle labeled **6**.
- Three radio button options for image format are listed: 'Vista & new OS images (WIM)' (selected), 'XP/2000/2003 images only', and 'Vista, new OS images & Linux'. This section is highlighted with a red box and a red circle labeled **5**.
- Two checkboxes are present: 'Include all mounted volumes from the selected disk (SoftThinks Recovery partition will be excluded automatically)' (checked) and 'Force imaging to include the SoftThinks Recovery partition' (unchecked).
- A table with columns 'Letter', 'label', and 'size (MB)' is shown below the checkboxes.
- At the bottom right, the '< Back' button is disabled, the 'Next >' button is highlighted with a red box and a red circle labeled **7**, and the 'Cancel' button is disabled.

8. Enter a description for your image 8
9. Enter an article code (not commonly used) to associate with this image 9
10. Specify the language 10
11. Specify the supported OS 11

Deployment Suite Console

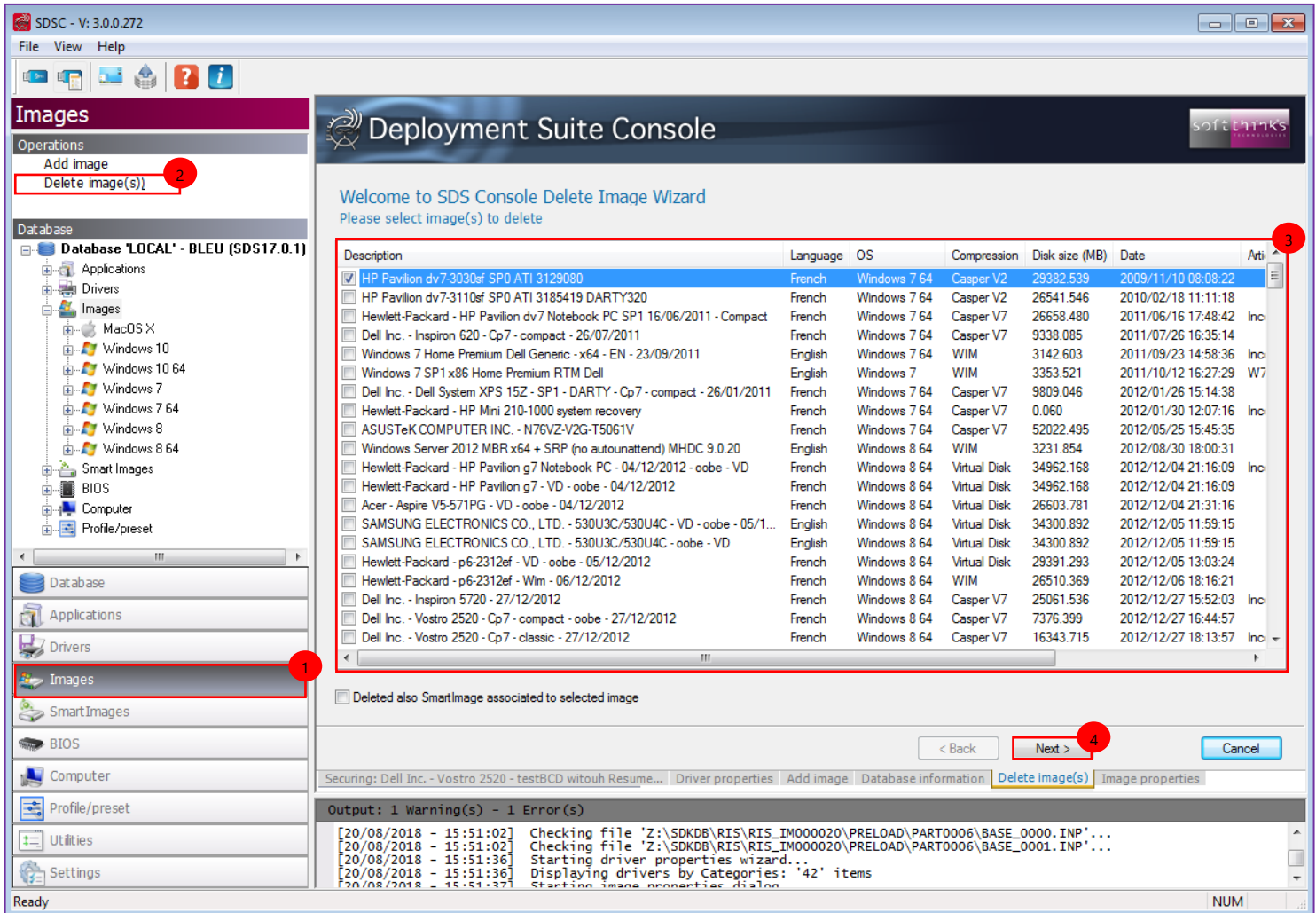
Welcome to SDS Console Add Image Wizard
Please fill appropriate info for the image to add

Image properties	
Description	Image description 8
Article code	9
Language	English 10
specific properties	
Size (MB)	0.00
Compression	WIM
OS version	<input checked="" type="checkbox"/> Windows 7 <input checked="" type="checkbox"/> Windows 7 64 <input checked="" type="checkbox"/> Linux <input checked="" type="checkbox"/> Windows 2000 <input checked="" type="checkbox"/> Windows XP <input checked="" type="checkbox"/> Windows XP Pro 11 <input checked="" type="checkbox"/> Windows XP 64 <input checked="" type="checkbox"/> Windows MCE <input checked="" type="checkbox"/> Windows 2003 <input checked="" type="checkbox"/> Windows 2003 64 <input checked="" type="checkbox"/> Windows Vista <input checked="" type="checkbox"/> Windows Vista 64 <input checked="" type="checkbox"/> Windows Server 2008 <input checked="" type="checkbox"/> Windows Server 2008 64
Signature	

< Back Next > Cancel

Deleting images ("Delete image(s)" operation)

1. Click on the "Images" tab
2. Click on the "Delete image(s)" operation
3. Select the image(s) to remove in the list. If you don't see an image you recently added, press F5 to refresh the list contents.
4. Click on the "Next >" button



Note: Deletion is permanent. There is no method to undo a delete. Be careful when selecting images for deletion and review them.

Smart Images

SmartImages are differential images which reflect the difference between the basic Windows installation on a Generic Master and the fully configured target device. In general, they contain all items that were added on top of the basic Windows installation: PC-specific drivers, bundle software and applications.

SmartImages are fast to set up and can be very useful for installing configurations that change very rarely; i.e. notebooks or PCs with all-in-one motherboards.

To view and edit the SmartImages stored in the database, click on the « SmartImages » tab or on the "SmartImages" item in the Database tree-view ¹.

When you select a Smart Image from the list ², or directly from the tree-view ¹, you can see its details below ³, including the location where it is stored ⁴ on which you can click to directly open this folder.

SDSC - V: 3.0.0.272

File View Help

SmartImages

Operations

Delete SmartImage(s)

Database

Database 'LOCAL' - BLEU (SDS17.0.1)

- Applications
- Drivers
- Images
- Smart Images ¹
 - SmartImage From Dell Inc. - Inspiron 3847 - test migration - 01122015
- BIOS
- Computer
- Profile/preset

Database

Applications

Drivers

Images

SmartImages ¹

BIOS

Computer

Profile/preset

Utilities

Settings

Ready

Deployment Suite Console

SDS Console SmartImage properties

Please select smartimage for information or edition

Description	Language	Image associated	Article code
SmartImage From Dell Inc. - Inspiron 3847 - test migration - 01122015	French	Dell Inc. - Inspiron 3847 - test migration - 01122015	

Details

- Path: Z:\SDKDB\DIFF\FRN\PRD000051 ⁴
- Image linked: Dell Inc. - Inspiron 3847 - test migration - 01122015
- Size: 14826 MB
- Signature: 2015/12/01 22:56:56

Next > ⁵ Cancel


Smart Image properties | Driver properties | Add image | Database information | Delete image(s) | Image properties

Output: 8 Warning(s) - 1 Error(s)


[20/08/2018 - 17:59:02] Displaying smartimage by Categorie: '1' items

NUM

When you selected a SmartImage, click on the "Next >" button 5 (or double-click on it) to edit its properties as its description or to add more details (specific revision ...) and click on the "Save" button to save your modifications:



Deployment Suite Console



SDS™ SmartImages properties

SmartImage information

Description	PNP

- Smart Image Properties

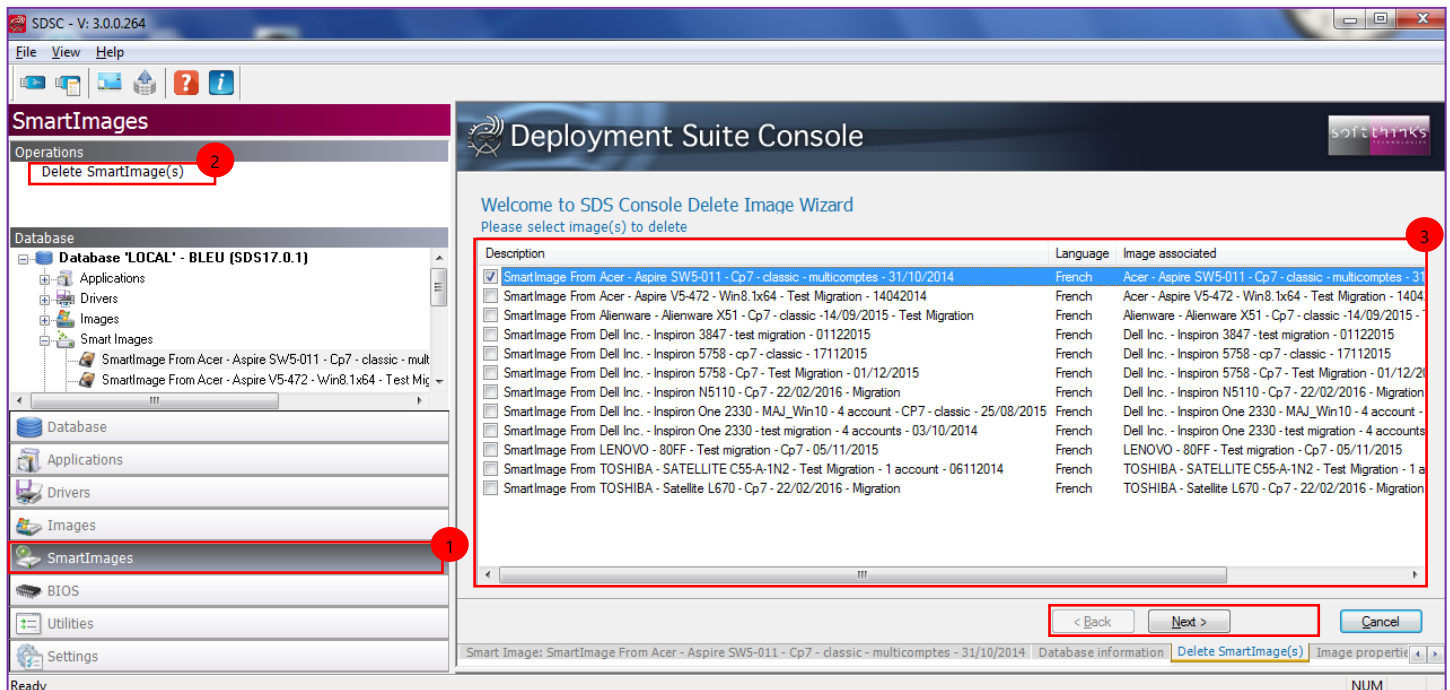
Description	SmartImage From Dell Inc. - Inspiron 3847 - test migration - 01122015
Article code	
Image linked	Dell Inc. - Inspiron 3847 - test migration - 01122015
Size (MB)	14826.00
Language	French
Signature	2015/12/01 22:56:56
Rank	1

Smart Image Properties

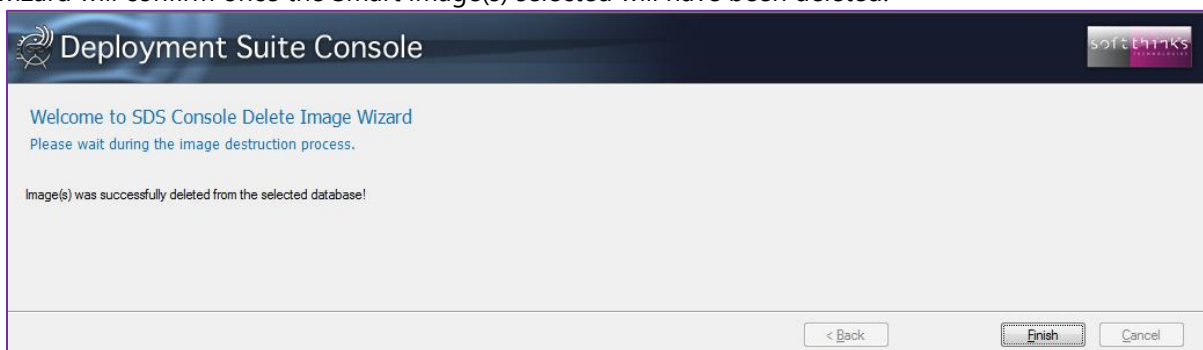
< Back
Save
Cancel

Deleting SmartImage(s)

1. Click on the "SmartImages" tab
2. Click on the "Delete SmartImage(s)" operation
3. Select the images to delete by clicking the check box next to each image to be deleted. If you don't see a SmartImage you recently added, press F5 to refresh the list contents.
4. Click on the "Next >" button



5. The wizard will confirm once the Smart Image(s) selected will have been deleted:



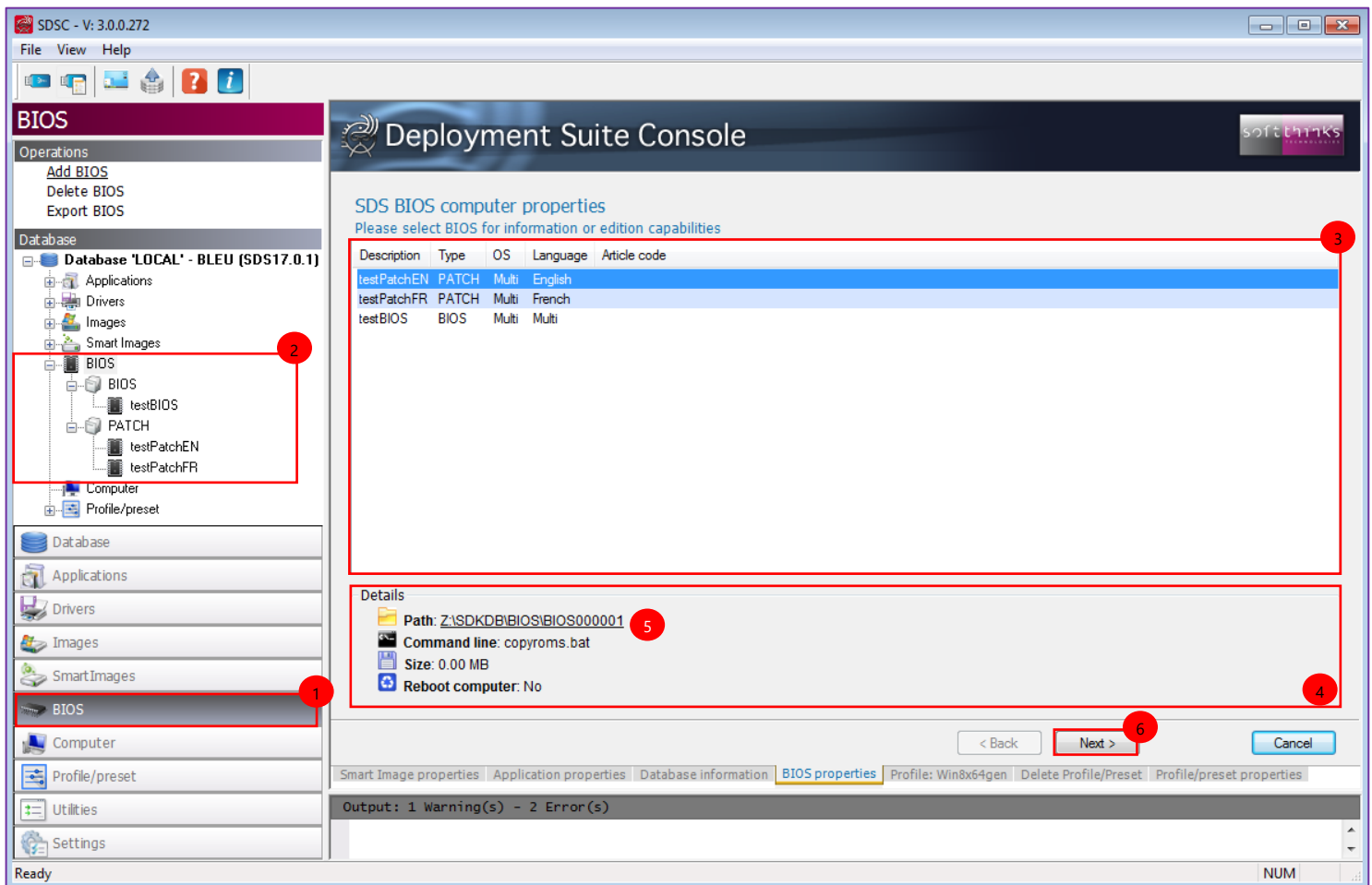
Note: Deletion is permanent. There is no method to undo a delete. Be careful when selecting SmartImages for deletion and review them.

BIOS

BIOS components are like application packages except that they are executed when the system is first booted to the deployment server and Deploy_JukeBox.exe is launched.

If Deploy_JukeBox.exe finds any components that are specified in the <profile>.selector.ini file, those components are executed prior to deployment or factory diagnostics. The BIOS components must be 32-bit applications and must be compatible with the WinPE environment. Any operation that must occur before the beginning of deployment could be done using this feature. It was primarily designed to allow electronic assembly (BIOS flash, DMI flash, firmware updates, and PATCH **SDS18.0**) prior to factory diagnostics and deployment.

You can explore the BIOS Components of your database by clicking on the "BIOS" tab **1**, or directly on the "BIOS" object in the tree-view **2**:



When you select a BIOS Component in the list **3**, you will see all of its details below **4**, including its path that you can open by clicking on the link **5**.

Click on the "Next >" button ⁶, or double click on the application in the list, to edit its properties:

Deployment Suite Console

SDS Console BIOS properties

BIOS information

BIOS settings	
Description	testPatchEN
Command line	copyroms.bat
Type	PATCH
Language	English
Supported OS	<input checked="" type="checkbox"/> (Multi OS)
Specific OS	
Reboot	<input type="checkbox"/> (No)
Priority	50
Article code	
Linking information	
Size (MB)	0.00

BIOS settings
These are settings from the ini file database for the selected item

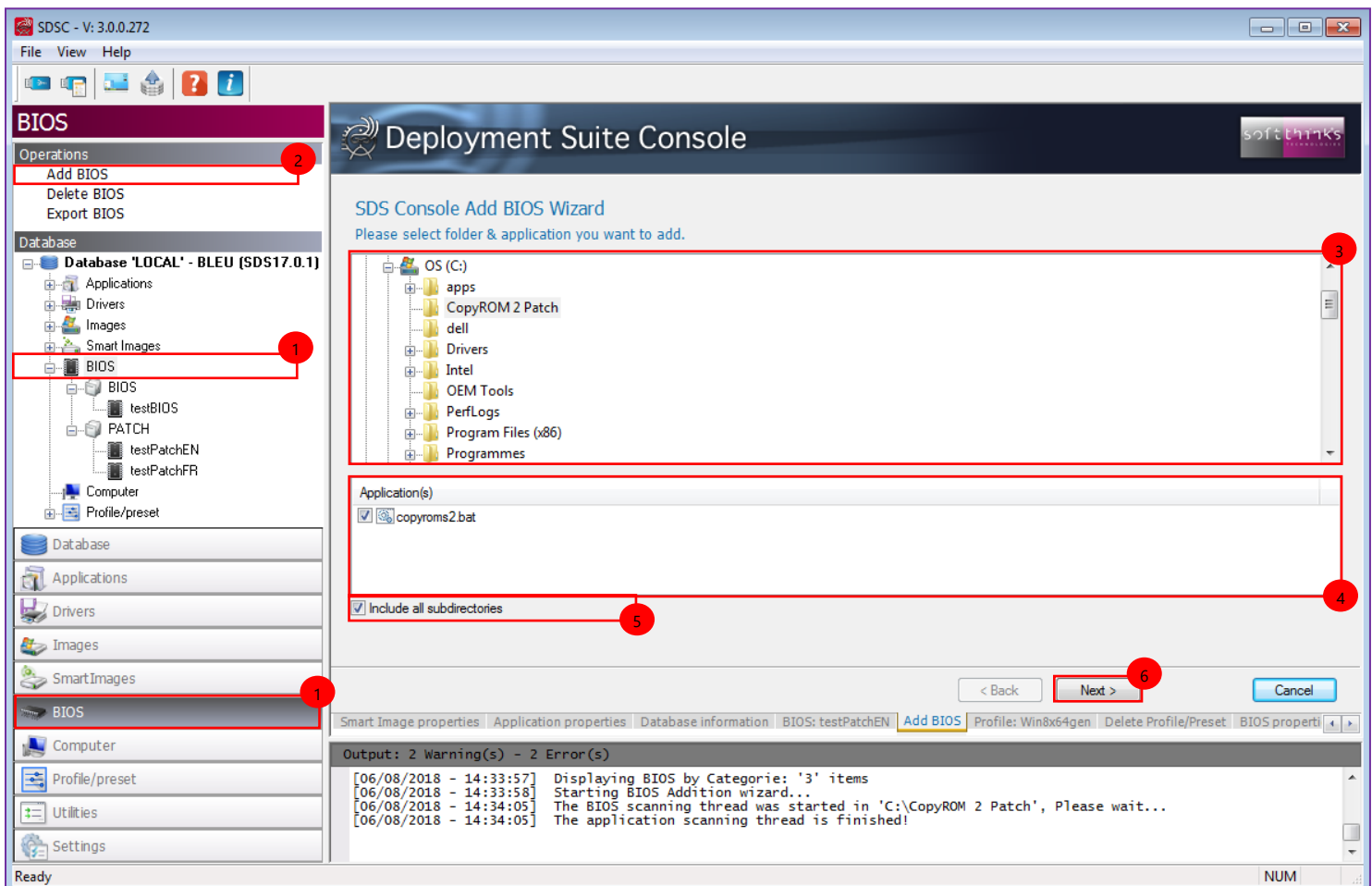
< Back Save Cancel

- **Description:** BIOS component description
- **Command Line:** Full command line used to start the component (executable and command line arguments).
Note: This differs from the application interface where executable and command line were different fields
- **Type:** Category of the BIOS component (BIOS, Firmware, DMI utility, PATCH, etc...). The list of categories is configured using the Settings tool (See [BIOS settings](#))
- **Language:** Language supported by the BIOS component. Only used by PATCH components during deployment.
- **Supported OS:** OS for which the BIOS component can be applied. Only used by PATCH components during deployment.
- **Reboot:** Select this setting to reboot the computer after the component is executed. If there are additional BIOS components at a lower priority, they will be executed after the system boots back to the deployment server.
- **Priority:** Ranging from 0 to 99, all applications are arranged in <profile>.selector.ini file and execute them in ascending priority value. The lowest number, 0, goes first. Useful if more than one BIOS version is required to be installed.
- **Article Code:** The part number used in the SPL file to designate the BIOS component. (Not commonly used.)
- **Linking information:** String linking the BIOS component to an image, a PNP or a Motherboard model. By this way, the BIOS component can be filtered automatically if this information is matching during the deployment.
- **Size (MB):** Size of the BIOS Component folder

Click on the "Save" button ⁸ to complete the changes

Adding a BIOS component ("Add BIOS" operation)

1. Click on the "BIOS" tab ¹ or BIOS element ¹ in the database tree-view
2. Click on « Add BIOS » operation ²
3. Select the location where your BIOS components are stored from the tree-view ³
4. Check the application(s) in the list below ⁴
5. Check the "Include all subdirectories" option ⁵ if there are subfolders inside your source folder that are required by the BIOS component. Else, only the folder selected in tree-view will be read
6. Click on the "Next >" button ⁶



7. Pick the appropriate file from the list of executable files and click "Next>":

The screenshot shows the 'Deployment Suite Console' window. The title bar says 'Deployment Suite Console' and the 'softthinks' logo is in the top right. The main content area is titled 'SDS Console Add Application Wizard' with the instruction 'Please select the BIOS item you want to add.' Below this is a list box labeled 'Application(s)' containing one item: 'deploy.cmd' with a checked checkbox. At the bottom right are three buttons: '< Back', 'Next >', and 'Cancel'.

8. Configure the BIOS component settings:

The screenshot shows the 'Deployment Suite Console' window. The title bar says 'Deployment Suite Console' and the 'softthinks' logo is in the top right. The main content area is titled 'SDS Console Add BIOS Wizard' with the instruction 'BIOS informations'. Below this is a table with the following data:

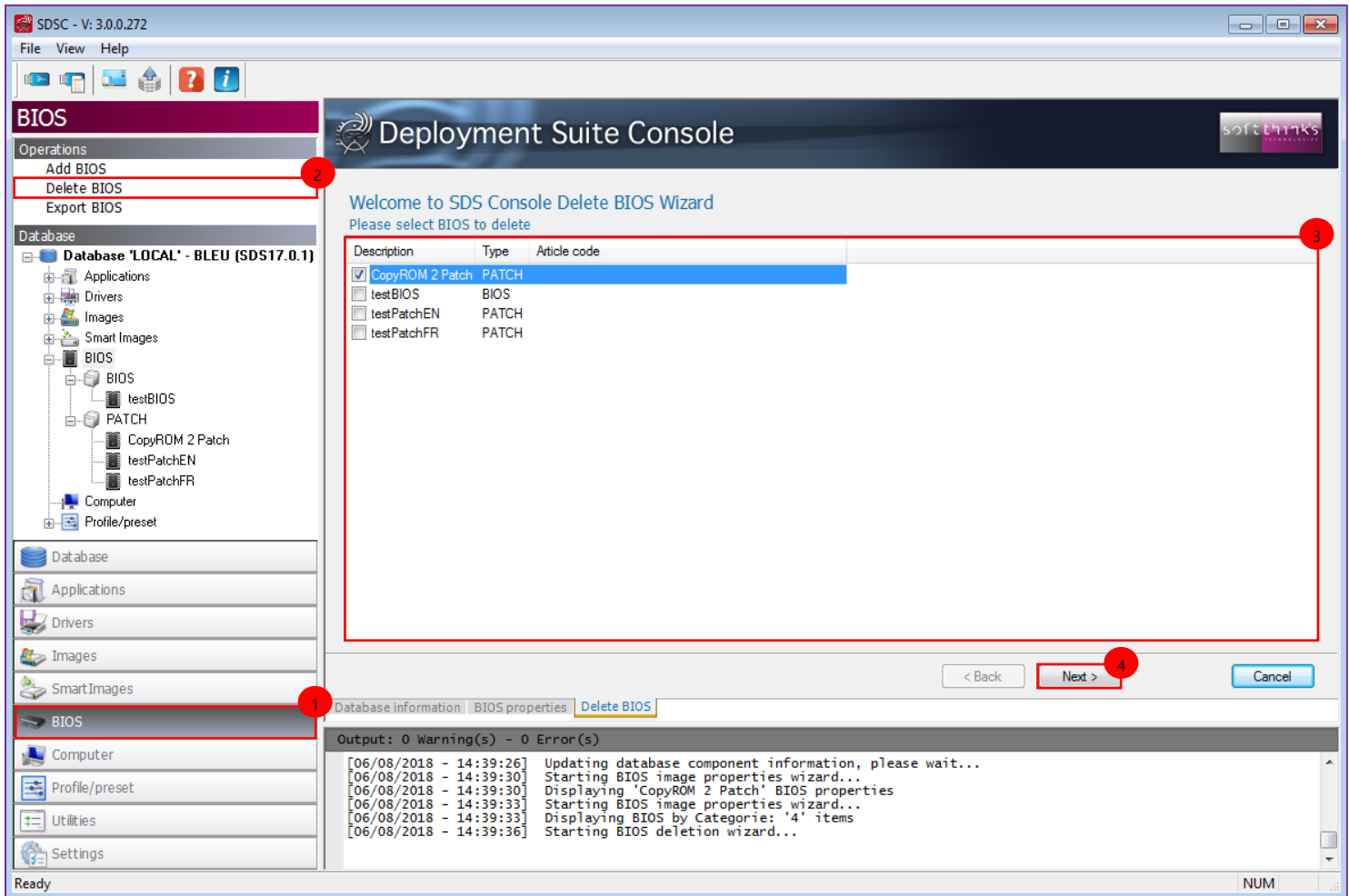
BIOS settings	
Description	BIOS000001
Article code	
Command line	deploy.cmd
Type	BIOS
Priority	50
Reboot	<input type="checkbox"/> (No)
Size (MB)	0.52

At the bottom right are three buttons: '< Back', 'Next >', and 'Cancel'.

- **Description:** A text description of the BIOS component.
- **Article Code:** The part number used in the SPL file to designate the BIOS component. (Not commonly used.)
- **Command Line:** Contains the executable and command line switches. **Note:** This differs from the application interface where executable and command line were different fields.
- **Type:** Category of the BIOS component (BIOS, Firmware, DMI utility, etc). The list of categories is configured using the Settings tool (See [BIOS settings](#))
- **Priority:** Ranging from 0 to 99, all applications are arranged in <profile>.selector.ini file and execute them in ascending priority value. The lowest number, 0, goes first. Useful if more than one BIOS version is required to be installed.
- **Reboot:** Select this setting to reboot the computer after the component is executed. If there are additional BIOS components at a lower priority, they will be executed after the system boots back to the deployment server.

Deleting BIOS components (“Delete BIOS” operation)

1. Click on the “BIOS” tab ¹ or on the “BIOS” element in the Database tree-view
2. Click on the « Delete BIOS » operation ²
3. Select all the BIOS components you wish to delete in the list ³. If you don’t see a component you recently added, press F5 to refresh the list contents.
4. Click on the « Next > » button ⁴:

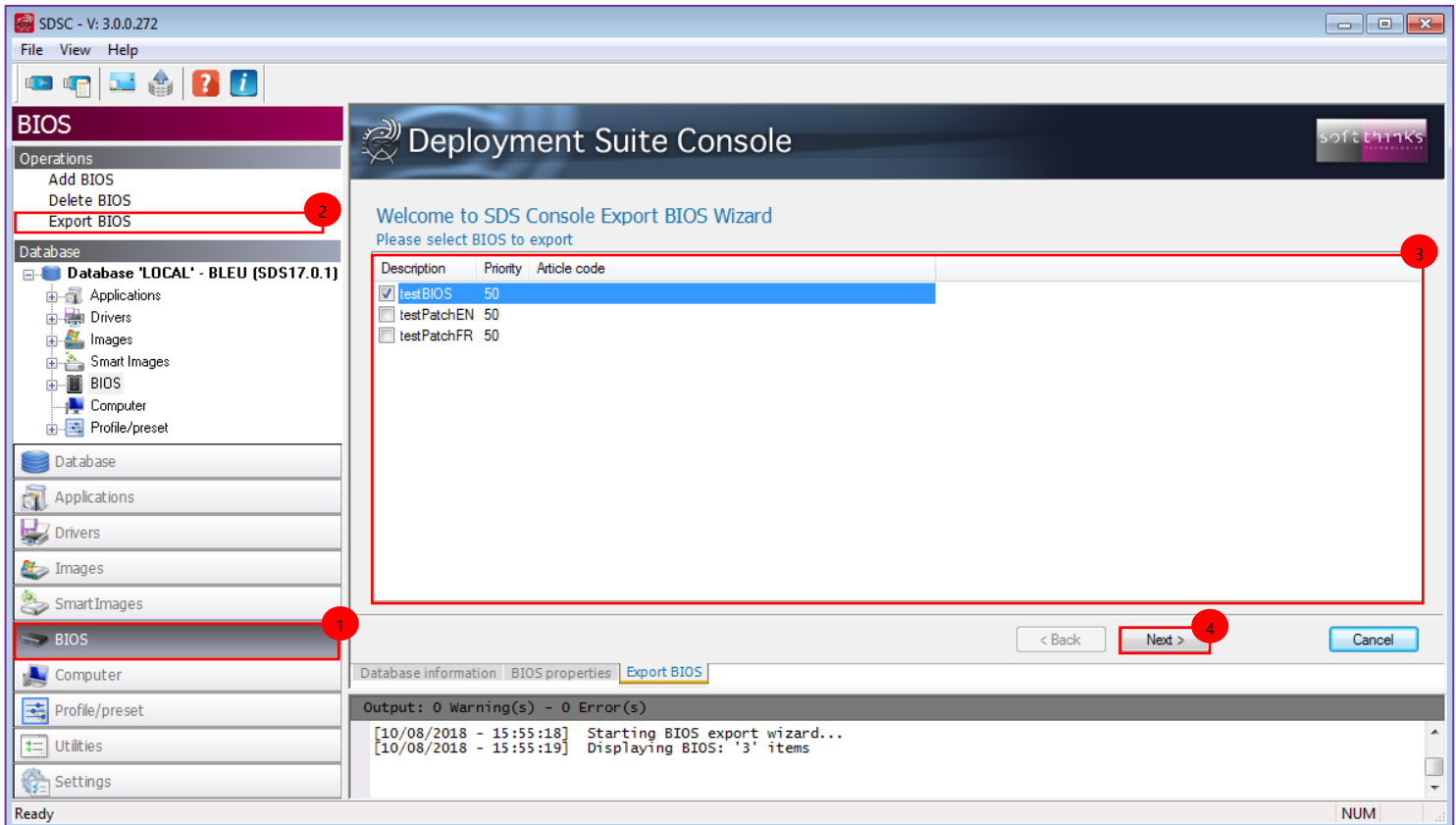


5. A message will confirm you when the BIOS components selected will have been deleted

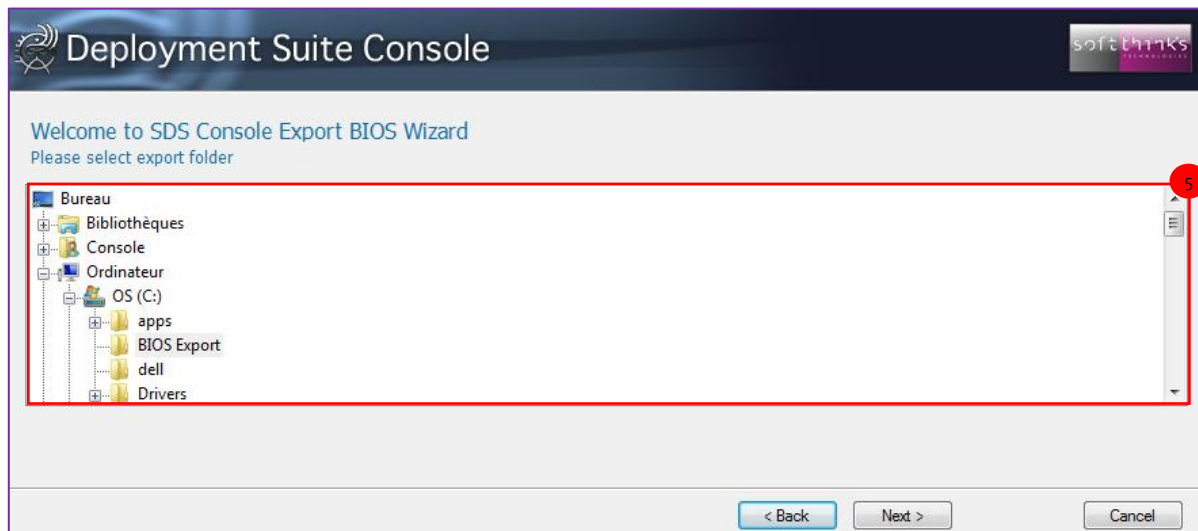
Note: Deletion is permanent. There is no method to undo a delete. Be careful when selecting BIOS components for deletion and review them.

Exporting BIOS components ("Export BIOS" operation)

1. Click on the "BIOS" tab ¹ or on the "BIOS" element in the Database tree-view
2. Click on the « Export BIOS » operation ²
3. Select the BIOS components you wish to export in the list ³. If you don't see a component you recently added, press F5 to refresh the list contents.
4. Click on the "Next >" button ⁴



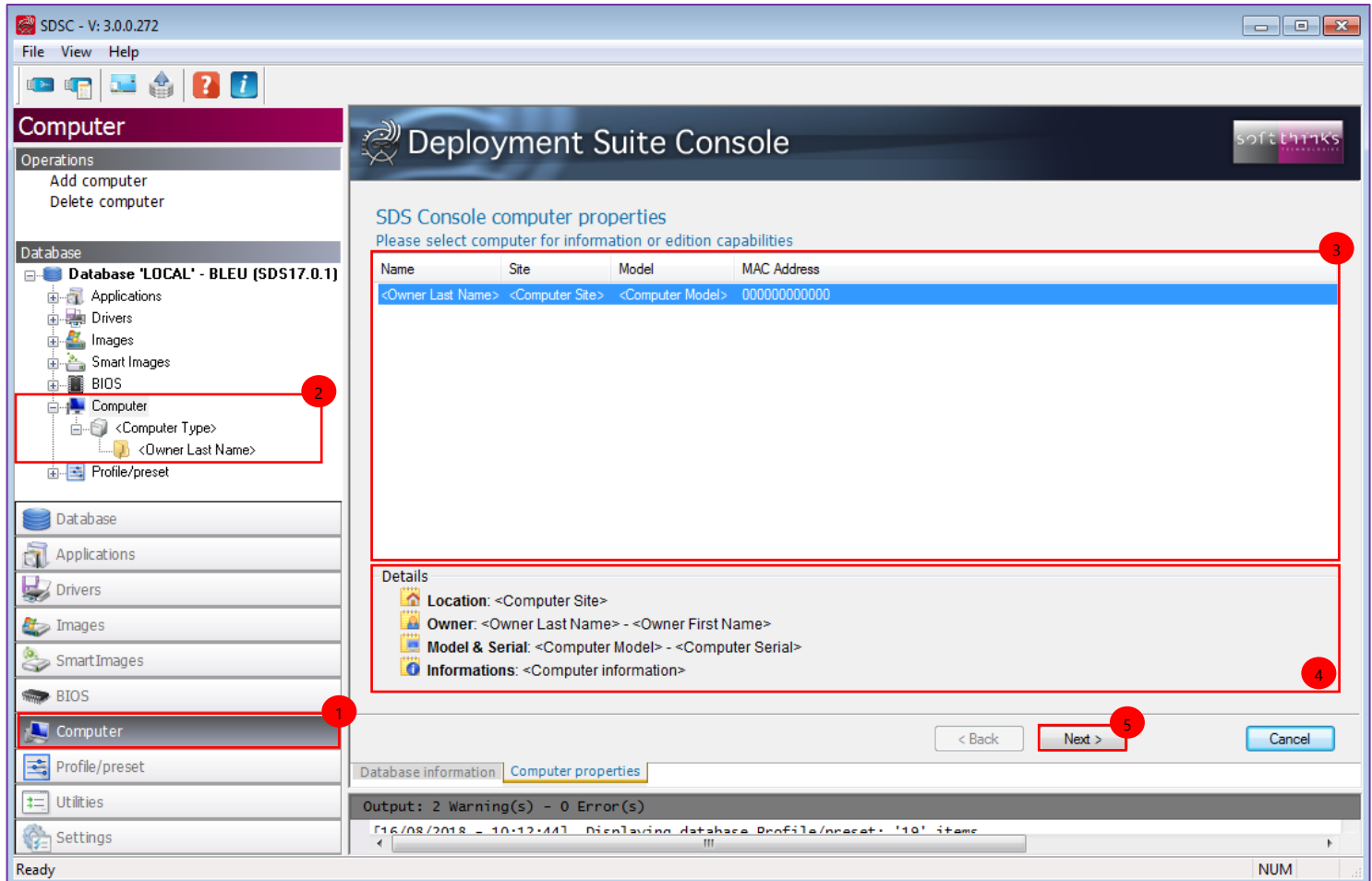
5. Select the destination folder ⁵ where the ZIP files will be created and click on the "Next >" button



Computer

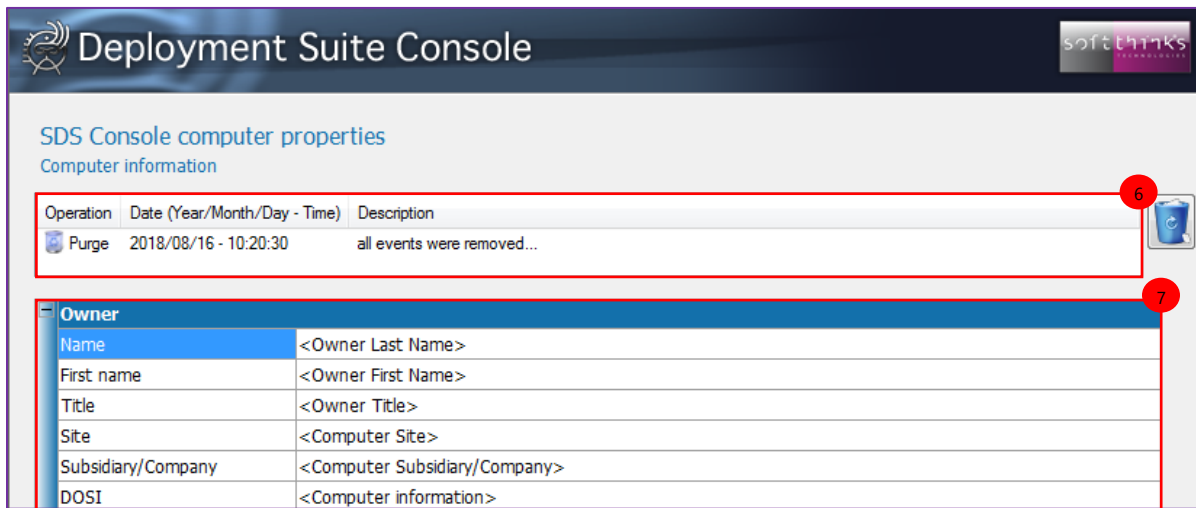
This Database item allows computers management. By default, the associated view will be empty and no operation will be available. If you need this feature, please ask to your contact at Softthinks.

When this feature is enabled, you can explore the computers of your database by clicking on the "Computer" tab ¹, or directly on the "Computer" object in the tree-view ²:



When you select a computer Component in the list ³, you will see all of its details below ⁴.

Click on the “Next >” button ⁵, or double click on the computer in the list, to view the history of the operations made on this computer ⁶ (click on the recycle bin icon at its right to clear this history log), and edit its properties ⁷, beginning with the “Owner” information:



Deployment Suite Console

SDS Console computer properties

Computer information

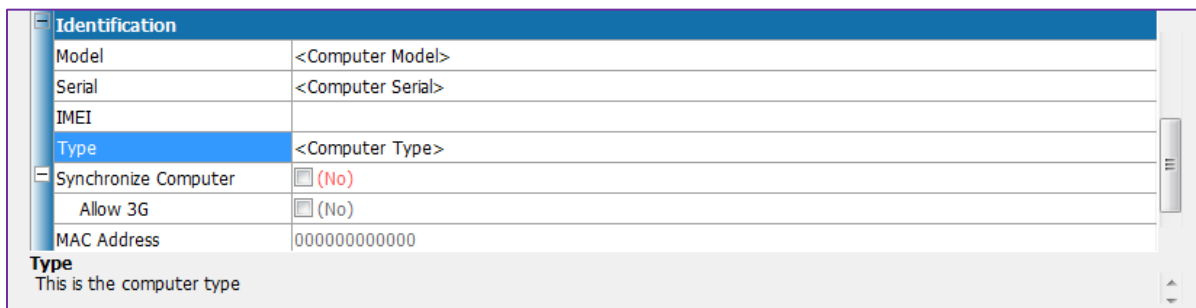
Operation	Date (Year/Month/Day - Time)	Description
Purge	2018/08/16 - 10:20:30	all events were removed...

Owner

Name	<Owner Last Name>
First name	<Owner First Name>
Title	<Owner Title>
Site	<Computer Site>
Subsidiary/Company	<Computer Subsidiary/Company>
DOSI	<Computer information>

- **Name:** Last name of the owner
- **First Name:** First name of the owner
- **Title:** Title of the owner
- **Site:** Computer location
- **Subsidiary/Company:** Subsidiary / Company of the owner
- **DOSI:** User computer information (IP / Comment / Color / any information you need to store)

Scroll down to edit the “Identification” information:



Identification

Model	<Computer Model>
Serial	<Computer Serial>
IMEI	
Type	<Computer Type>
Synchronize Computer	<input type="checkbox"/> (No)
Allow 3G	<input type="checkbox"/> (No)
MAC Address	000000000000

Type
This is the computer type

- **Model:** Computer model
- **Serial:** Computer serial number
- **IMEI:** Computer IMEI
- **Type:** Computer type
- **Synchronize Computer:** Synchronize the computer when connected
 - **Allow 3G:** Use the 3G connection if necessary to synchronize the computer
- **MAC Address:** Computer network card MAC Address

If you continue scrolling down you will see the applications linked to this computer:

Type	<Computer Type>
Synchronize Computer	<input type="checkbox"/> (No)
Allow 3G	<input type="checkbox"/> (No)
MAC Address	000000000000
Linked applications	
Filezilla	Z:\SDKDB\APPS\MUL\DTA\000004APP.DTA

Linked applications
These are linked applications

< Back Save Cancel

Click on the button in front of the linked application you want to remove, and click on the button to add new linked applications from the list displayed (click on the "<Back" button to apply your selection or else on "Cancel" button):

Deployment Suite Console

SDS Console computer properties
Applications dependencies

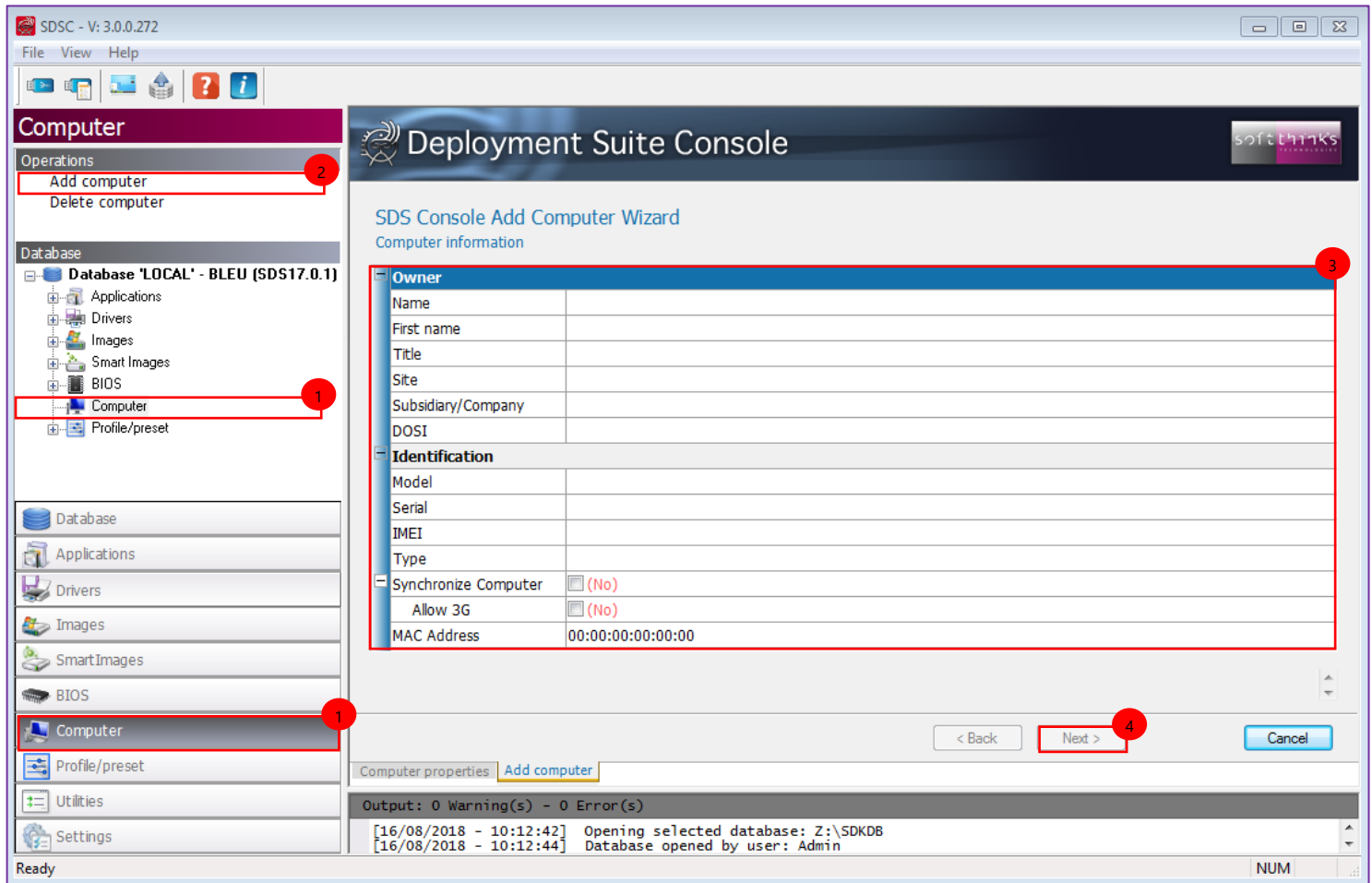
Description	Language	OS
<input type="checkbox"/> PCAngel x64 1.2.9b	Multi	Windows 7 64 - Windows 8 64
<input type="checkbox"/> 7zipx86	Multi	Windows XP - Windows 7 - Windows 8
<input type="checkbox"/> 7zipx64	Multi	Multi
<input type="checkbox"/> GoogleChrome	Multi	Multi
<input checked="" type="checkbox"/> Filezilla	Multi	Multi
<input type="checkbox"/> Gimp	Multi	Multi
<input type="checkbox"/> K-Lite Codec Pack Full	Multi	Multi
<input type="checkbox"/> Libre Office	Multi	Multi
<input type="checkbox"/> VLCx86	Multi	Windows XP - Windows XP Pro - Windows Vista - Windows 7 - Windows 8
<input type="checkbox"/> VLCx64	Multi	Windows 7 64 - Windows 8 64
<input type="checkbox"/> LiveUpdate	Multi	Windows 7 64

< Back Cancel

Click on the Save button to save your modifications.

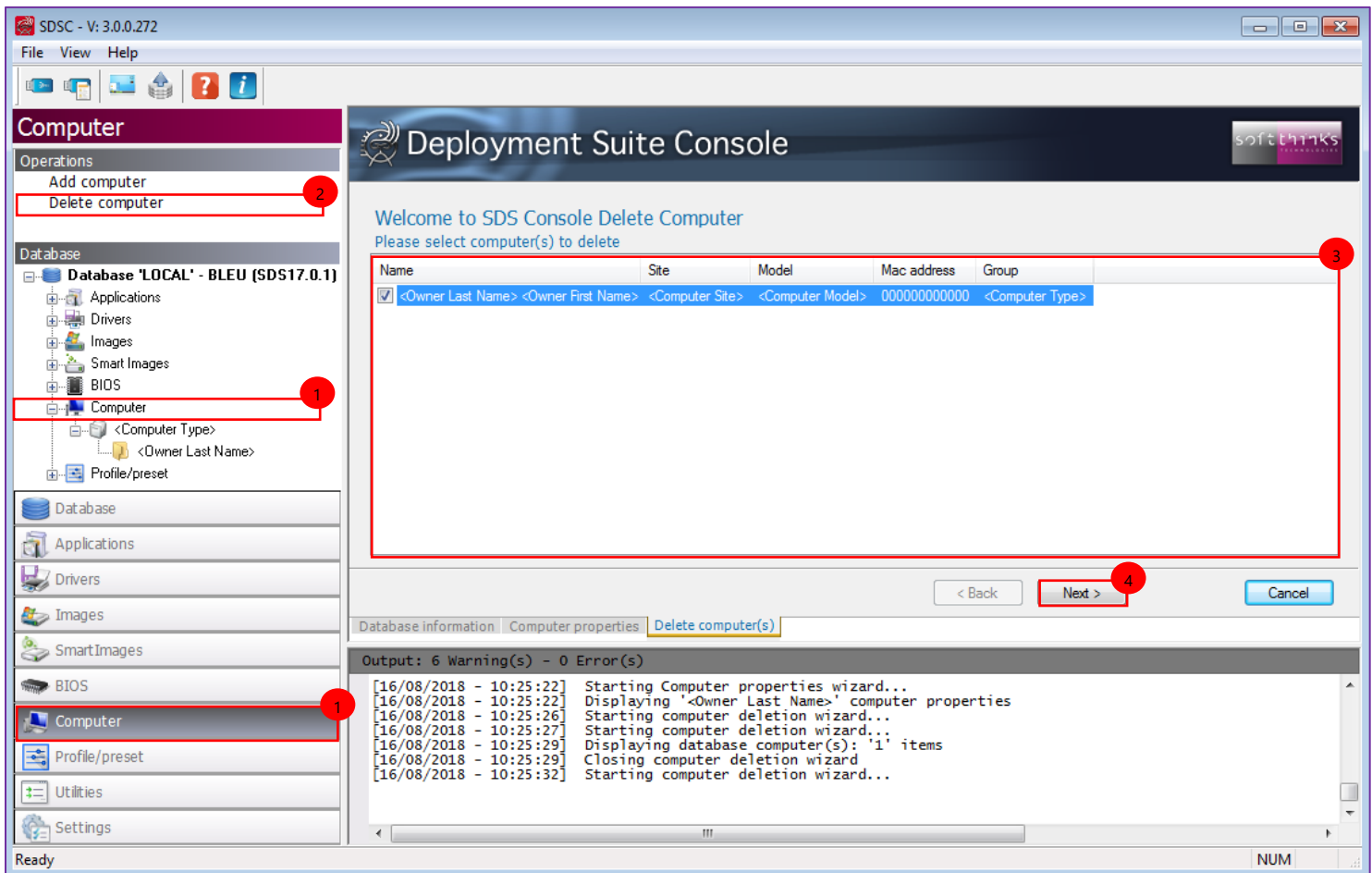
Adding a computer ("Add computer" operation)

1. Click on the "Computer" tab ¹ or Computer element ¹ in the database tree-view
2. Click on "Add computer" operation ²
3. Fill the computer information ³ (please refer to computer edition explanations just above)
4. Click on the "Next >" button ⁴



Deleting a computer ("Delete computer" operation)

1. Click on the "Computer" tab ¹ or Computer element ¹ in the database tree-view
2. Click on "Delete computer" operation ²
3. Select the computer(s) you want to delete from the list ³. If you don't see a computer you recently added, press F5 to refresh the list contents.
4. Click on the "Next >" button ⁴



5. A message will confirm you when the BIOS components selected will have been deleted

Note: Deletion is permanent. There is no method to undo a delete. Be careful when selecting BIOS components for deletion and review them.

Profile/Preset

This Database element has been introduced in SDS 18.0 in order to manage the profiles and presets created during deployment.

1. Click on the "Profile/Preset" tab ^{1a}, or directly on the "Profile/Preset" object in the tree-view ^{1b}:

The screenshot shows the Deployment Suite Console interface. On the left, a tree view shows the database structure. The 'Profile/preset' tab is selected. The main area displays the 'SDS Profile/preset properties' window. The window contains a table of profiles and presets, and a details section for the selected item.

SDS Profile/preset properties
Please select Profile/preset for information or edition

Name	Type	OS	Image	Disk layout	Last modification
3B0M022test	Profile	Windows 10 64	TEST SBAR - Generic - GPT x64 - install with autounattend	GPT	2017-10-10 / 17:37:22
3b0m022	Profile	Windows 10 64	TEST SBAR - Generic - GPT x64 - install with autounattend	GPT	2017-10-10 / 17:37:22
Darty_NUC_27092017	Preset	Windows 10 64	darty windows creator last	GPT	2017-09-27 / 15:37:37
Inspiron 3847	Preset	Windows 10 64	Dell Inc. - Inspiron 3847 - CP7 - Compact - 01092016	GPT	2017-12-22 / 17:06:10
TEST_Win10x64_Gen_SBAR	Profile	Windows 10 64	Windows 10 - x64 - 14393 - frFR	GPT	2017-03-31 / 16:35:36
Test-crash-wim	Preset	Windows 10	ASUSTeK COMPUTER INC. - T100TA - Cp7 - 04/11/2015	GPT	2017-06-02 / 16:31:54
TestSBARSENECA2106	Preset	Windows 10 64	TEST SBAR - Generic - GPT x64 - install with autounattend	GPT	2018-04-17 / 18:25:44
Testbios	Preset	Windows 10 64	Acer - Aspire ES1-531 - Cp7 - Classic - 10/09/2015	GPT	2017-10-10 / 16:54:12
WIN10x64_MBR	Preset	Windows 10 64	Windows 10 Pro - x64 - MHDC 10.0.3 - mbr - 27052016	MBR	2018-05-28 / 11:12:59
Win10x64gen	Preset	Windows 10 64	Windows 10 Home Gen x64	GPT	2017-10-12 / 12:56:11
Win8x64gen	Preset	Windows 8 64	Windows 8.1 Pro - x64 - EN - MBR - 28/02/2014	MBR	2017-10-12 / 12:42:34
darty3	Profile	Windows 10 64	Darty National 3 17/03/2017	GPT	2017-11-07 / 15:03:29
inspiron3847andFileZilla	Profile	Windows 10 64	Dell Inc. - Inspiron 3847 - CP7 - Compact - 01092016	GPT	2017-11-13 / 14:39:25
test3B0M022	Profile	Windows 10 64	TEST SBAR - Generic - GPT x64 - install with autounattend	GPT	2017-10-10 / 17:37:22
test3B0M022test	Profile	Windows 10 64	TEST SBAR - Generic - GPT x64 - install with autounattend	GPT	2017-10-10 / 17:37:22
testBIOSgen	Preset	Windows 10 64	Windows 10 Home Gen x64	GPT	2017-10-11 / 10:11:51
test_Drivers_PACK_Latitude_10	Profile	Windows 8	Windows 8.1 Pro - x86 - EN - EFI - 10/03/2014	GPT	2016-11-14 / 11:48:49
test_SBAR_Win10_Gen_x64	Preset	Windows 10 64	Windows 10 - x64 - 14393 - frFR	GPT	2017-03-31 / 16:48:46
win7andFileZilla	Profile	Windows 7	LENOVO - 3395A38 - 14032017	MBR	2017-11-14 / 11:34:08

Details

- Path: Z:\SDKDB\PRESETS\Win8x64gen.Selector.ini
- Type: MBR / Generic
- Image: Windows 8 64 / Windows 8.1 Pro - x64 - EN - MBR - 28/02/2014
- Components: Apps 0 / Bcd 0 / Drv 0 / BIOS 0

Navigation buttons: < Back, Next >, Cancel

Output: 1 Warning(s) - 0 Error(s)

```
[31/07/2018 - 11:45:15] Displaying database driver(s): '42' items
[31/07/2018 - 11:45:15] Displaying database image(s): '259' items
[31/07/2018 - 11:45:15] Displaying database SmartImage(s): '1' items
[31/07/2018 - 11:45:15] Displaying database BIOS: '3' items
[31/07/2018 - 11:45:15] Displaying database application(s): '1082' items
[31/07/2018 - 11:45:15] Displaying drivers by Categories: '42' items
```

2. Select the profile or preset in the list ³ you want to review or edit

Hint: As for images, the number of profiles and presets is growing systematically and so the SDS Console highlights in orange the old ones to help you making some cleanup.

3. Review the information in the "Details" area ³, including the path where it is stored that you can open by clicking on the link ^{3b}.
4. Click on the "Next >" button ⁴, or double click on item in the list, to edit its basic information and the components associated to it (2 applications in our example below):

Deployment Suite Console

SDS Console Profile/preset properties

Profile/preset information

Basic information	
File name	Win8x64gen
OS Version	Windows 8 64
Image name	Windows 8.1 Pro - x64 - EN - MBR - 28/02/2014
Type	MBR / Generic
SmartImage	-
Full size	3623.70 MB

Components	
Application	+ 2 Applications
App 0	- Filezilla
App 1	- Libre Office
Bundle	+ 0 Bundle
Driver	+ 0 Driver
Bios	+ 0 Bios
Profile PNP	+ 0 PNP

Application
This is the full application list requested to be deployed.

< Back Save Cancel

5. Click on the button ⁵ in the front of an application / bundle / driver / BIOS / Profile PNP to unlink it.
6. Click on the button ⁶ in the front of a component category to add application / bundle / driver / BIOS / Profile PNP.
 - a. For a Profile PNP, you will be asked to enter the PNP ID ^{6a}:

PNP input box

Please fill fields about the new PNP dependency to add

PNP id

OK Cancel

Or, since SDS 19.0, you can select a PNP definition file you have created previously through CTRL+F9 keystroke on the device ^{6a}:

PNP input box

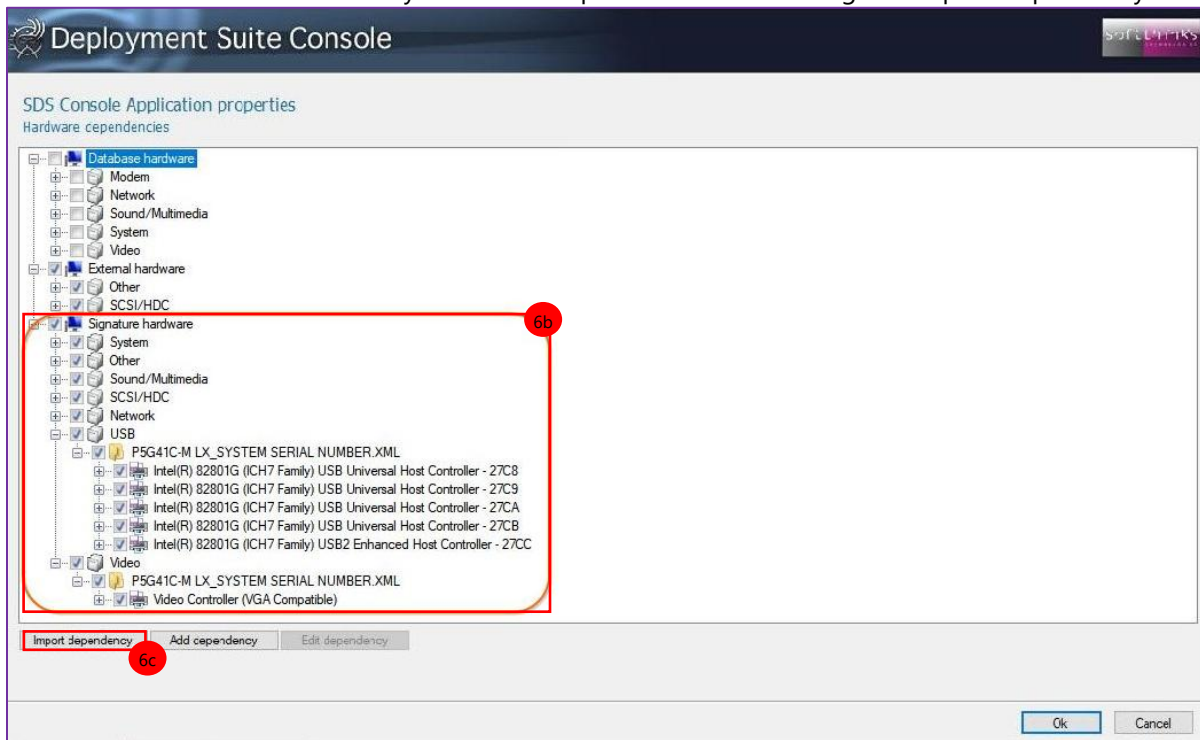
Please fill informations about the new PNP dependency to add

PNP id

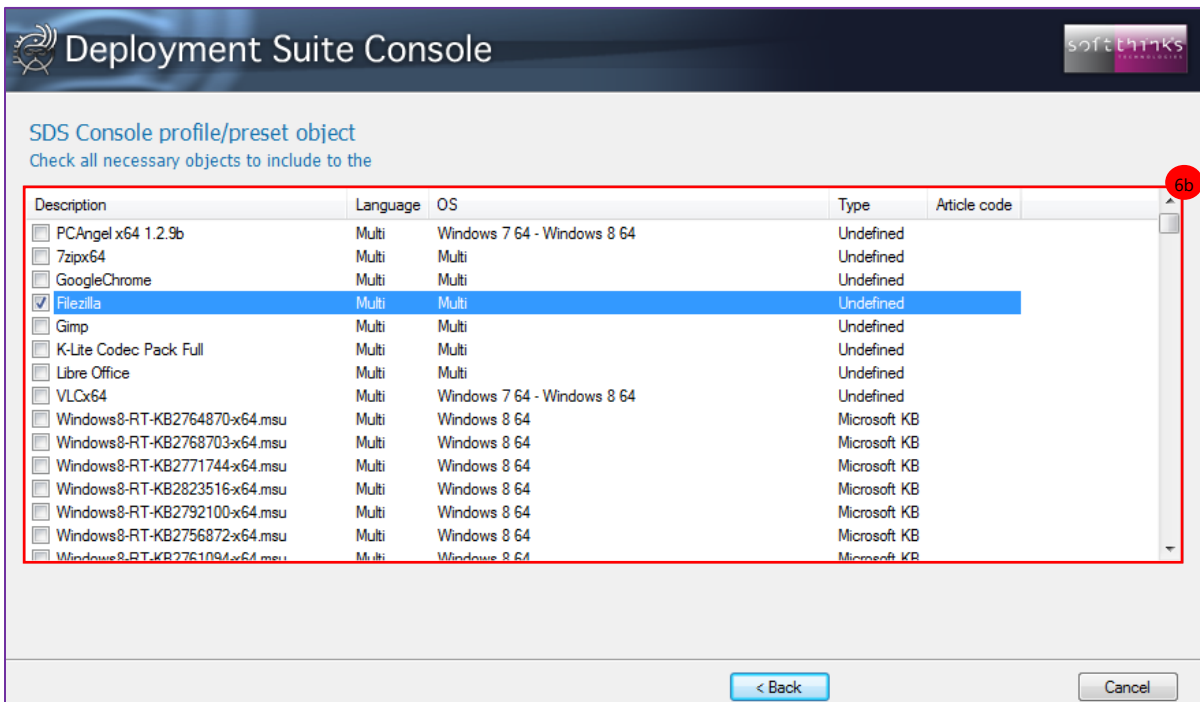
Lenovo.Y50-70_34755072C2037.xml

OK Cancel

And then select the elements you want to import ^{6b} before clicking on "Import Dependency" ^{6c}:



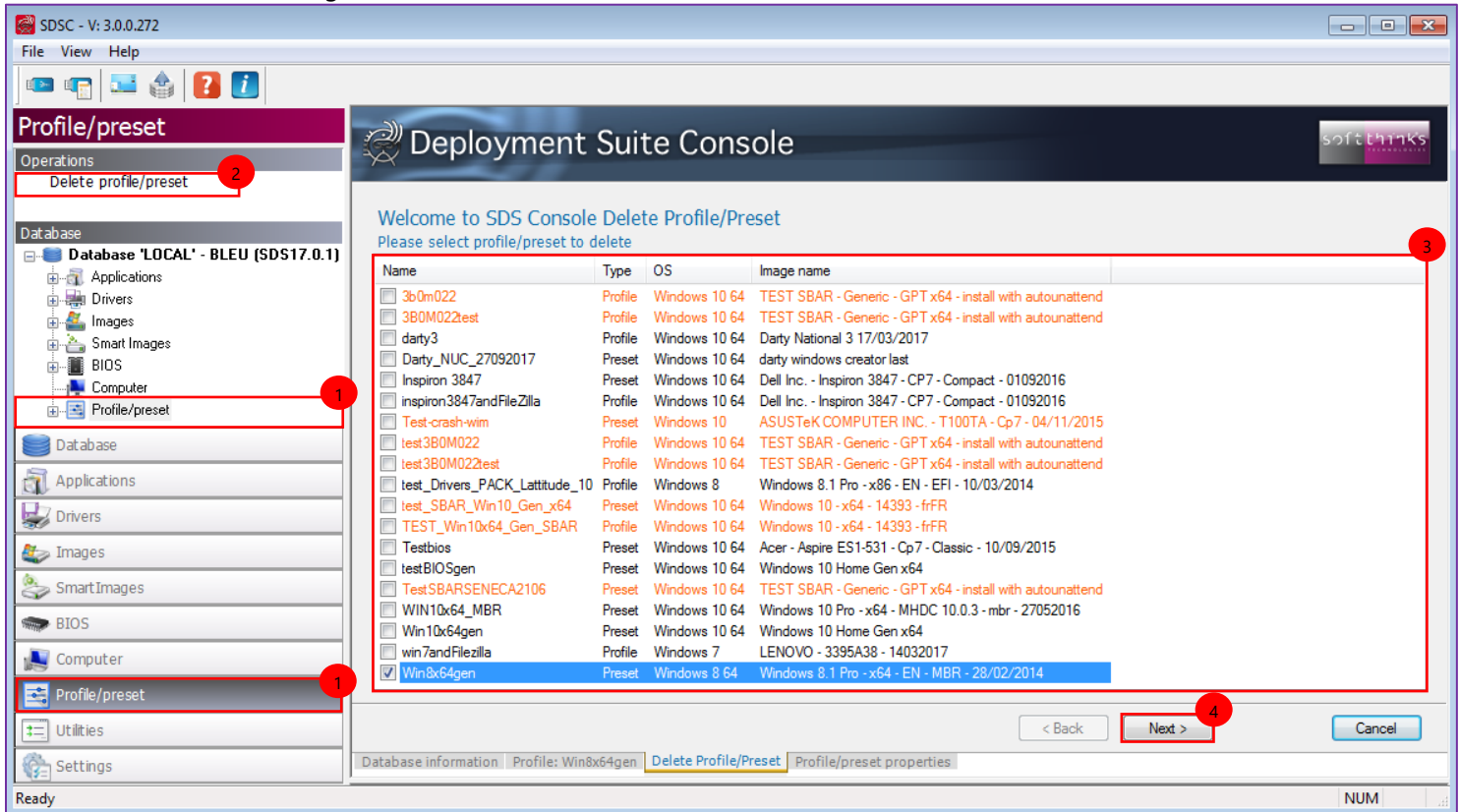
- b. For any other type of component (such as application in our example below), you will be invited to select the elements you want to link from the list displayed ^{6a} to the current profile/preset:



Note: The elements already linked appear as preselected (as "Filezilla" in our example). If you unselect them, they will be removed from the list of the elements linked.

Deleting a profile/preset ("Delete profile" operation)

In order to delete one or more profile/preset, click on "Profile/Preset" tab ¹, or on "Profile/Preset" node ¹ in the database arborescence, and then "Delete profile/preset" operation ². Select the profile(s)/preset(s) you want to remove from the database in the list on the right ³ and click on "Next >" button ⁴:



The wizard will confirm you that your profile(s)/preset(s) have been deleted once the process has completed.

Note: Deletion is permanent. There is no method to undo a delete. Be careful when selecting applications for deletion and review them before continuing.

Utilities

General


Create Deployment USB stick

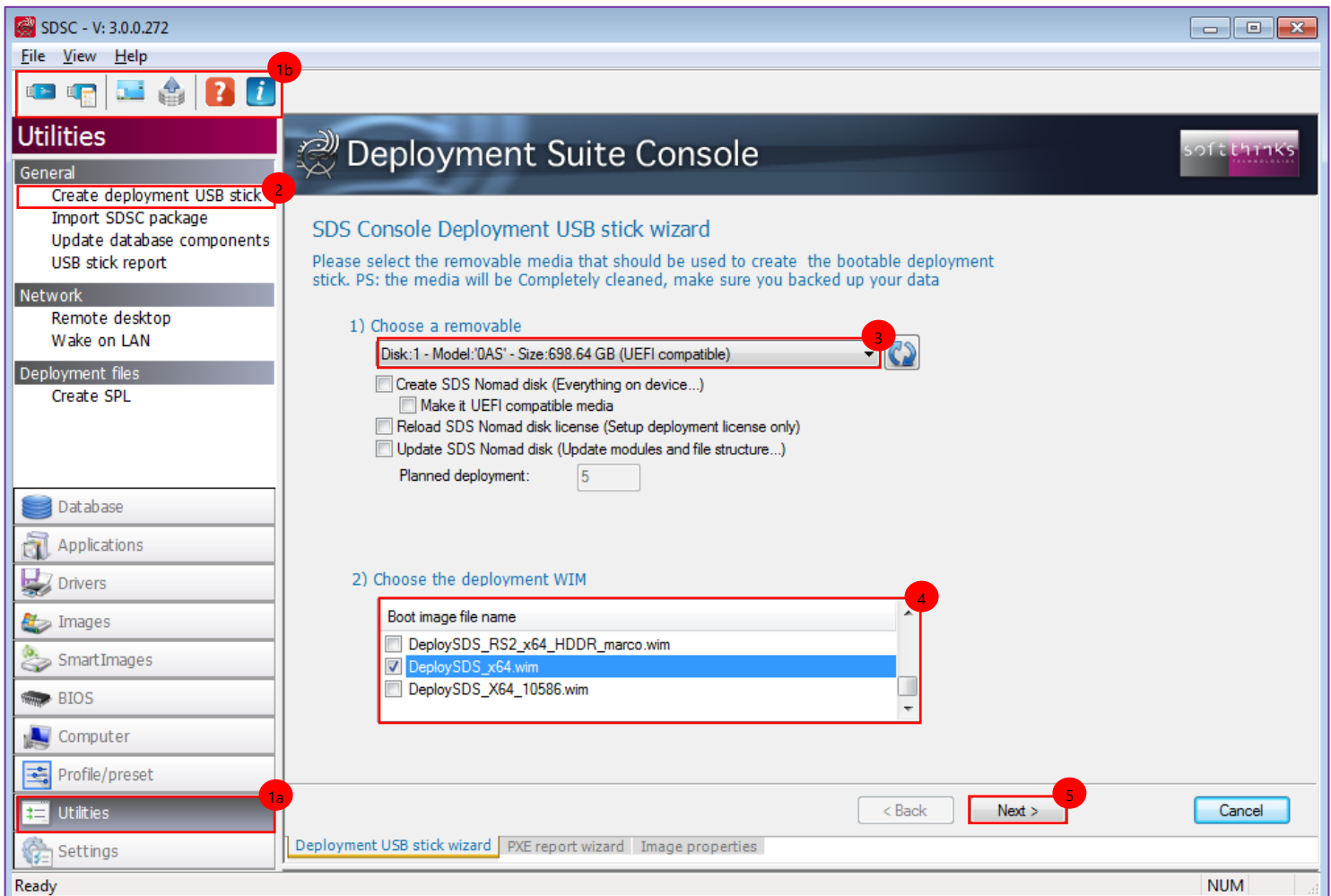
This tool offers you the ability to create a bootable deployment USB stick. If you already created one with a previous version of SDS, you will have to update it in order to benefit from all of the new SDS features and to be compliant with latest OS version.

You can either create a Boot Key or a Nomad Disk.

Boot key

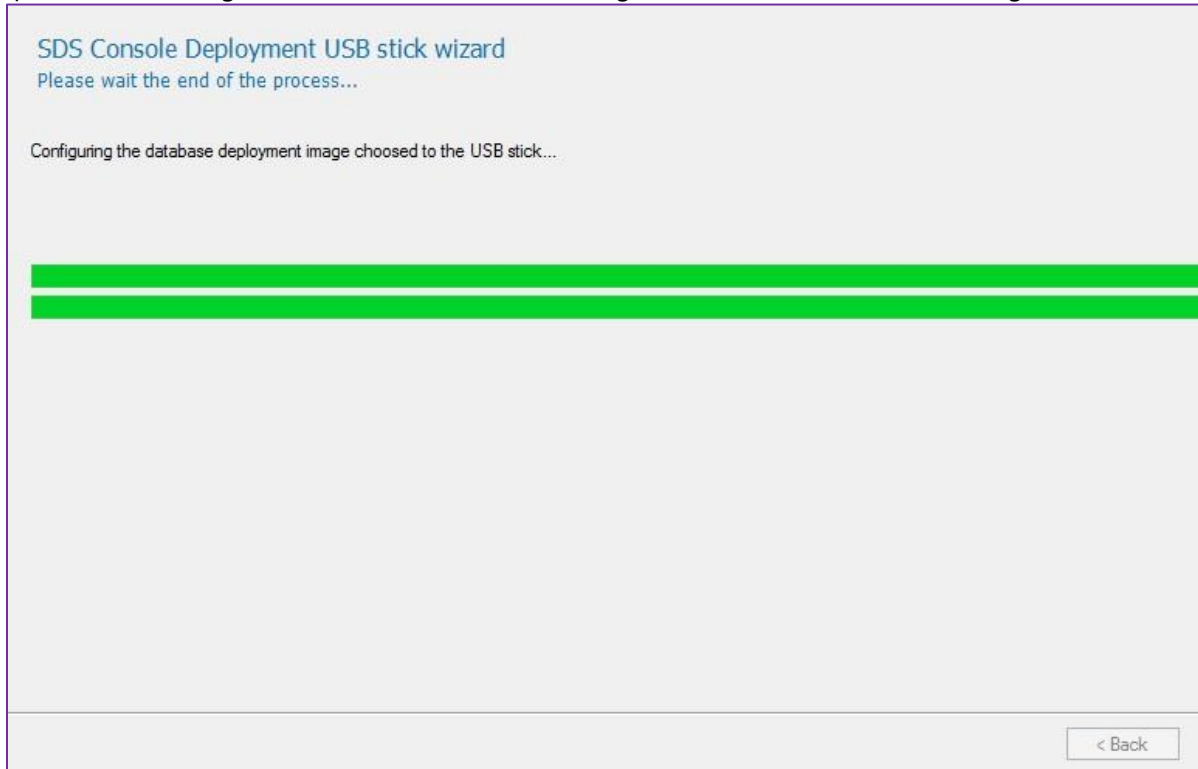
Create a boot key when you want to use SDS on a computer that doesn't support PXE boot.

1. Click on "Utilities" tab ^{1a}, or directly on  button in the toolbar ^{1b} and go to step 3
2. Click on « Create deployment USB stick » operation ²

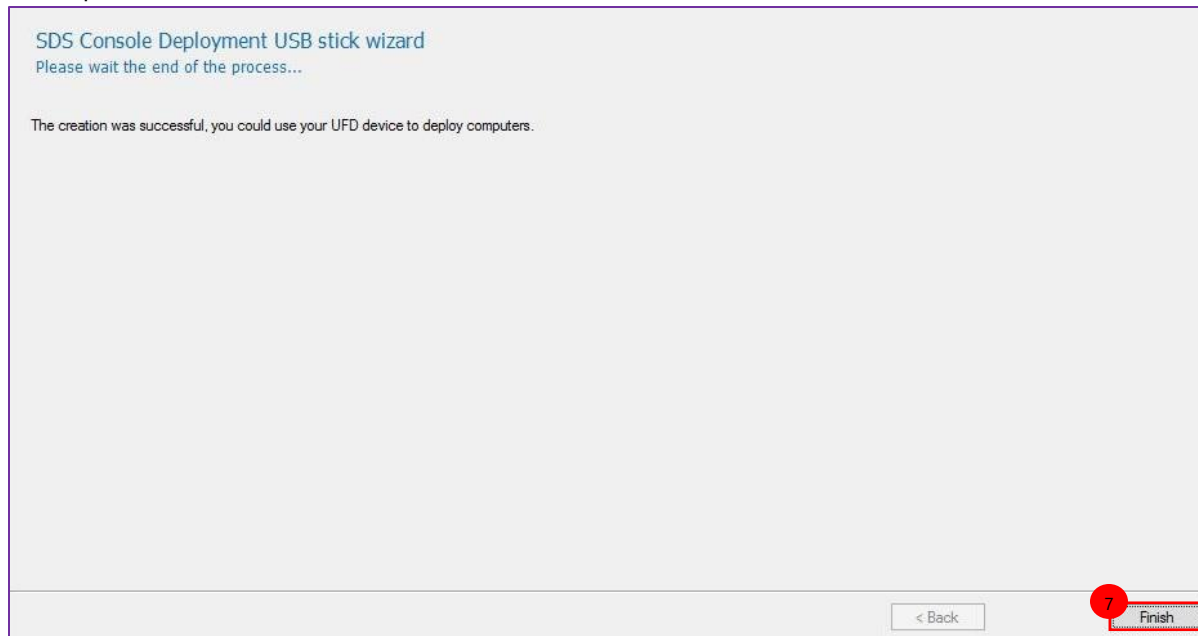


3. Insert a blank USB stick (See [How to format a USB Flash Drive before converting it to a SDS USB Flash Drive](#) to format it) or the USB stick previously created and select it in the list ³
4. Select the deployment image to use ⁴
5. Click on "Next >" button ⁵

6. The process of creating the bootable flash drive can range from 2 to 10 minutes on average:



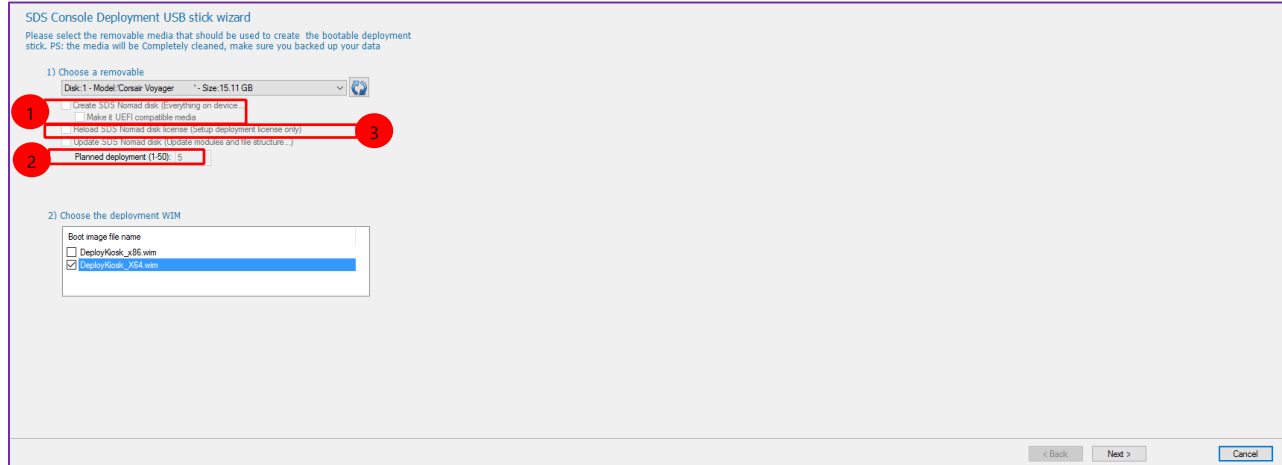
7. Once completed, click on « Finish » button ⁷:



Nomad disk

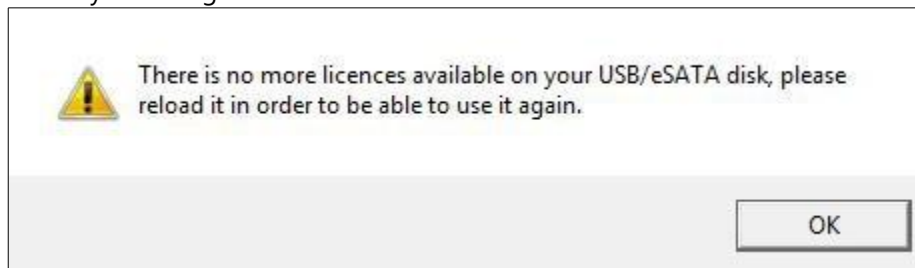
Instead of using a server, you install the software on an external hard drive that we call a Nomad Disk.

1. To create your Nomad Disk, follow the same process as for the Boot Key, except that you have to check the options « Create a SDS Nomad disk (Everything on device...) » and « Make a UEFI compatible device » (if needed since all USB media are not UEFI compliant), and enter the number of licenses you want installed (between 1 and 50):



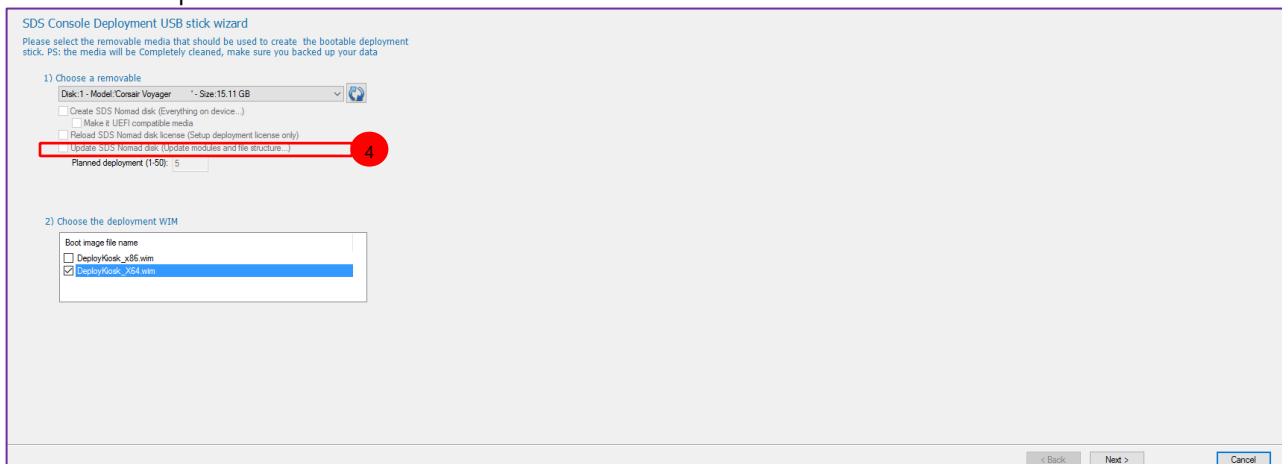
Note: Do not use USB Hard Drive larger than 2TB.

2. When you will have reached the deployments limit on a **nomad disk**, you will get the message below and will be able to add more licenses by choosing “Reload SDS Nomad disk license” ³.



Note: You can check the number of deployment available by plugging your USB Stick into the server and selecting « **USB Stick Report** » (See [USB stick report](#)).

3. You can also update the components (in case of new SDS version) in your Nomad Disk through the “Update SDS Nomad disk” option ⁴:




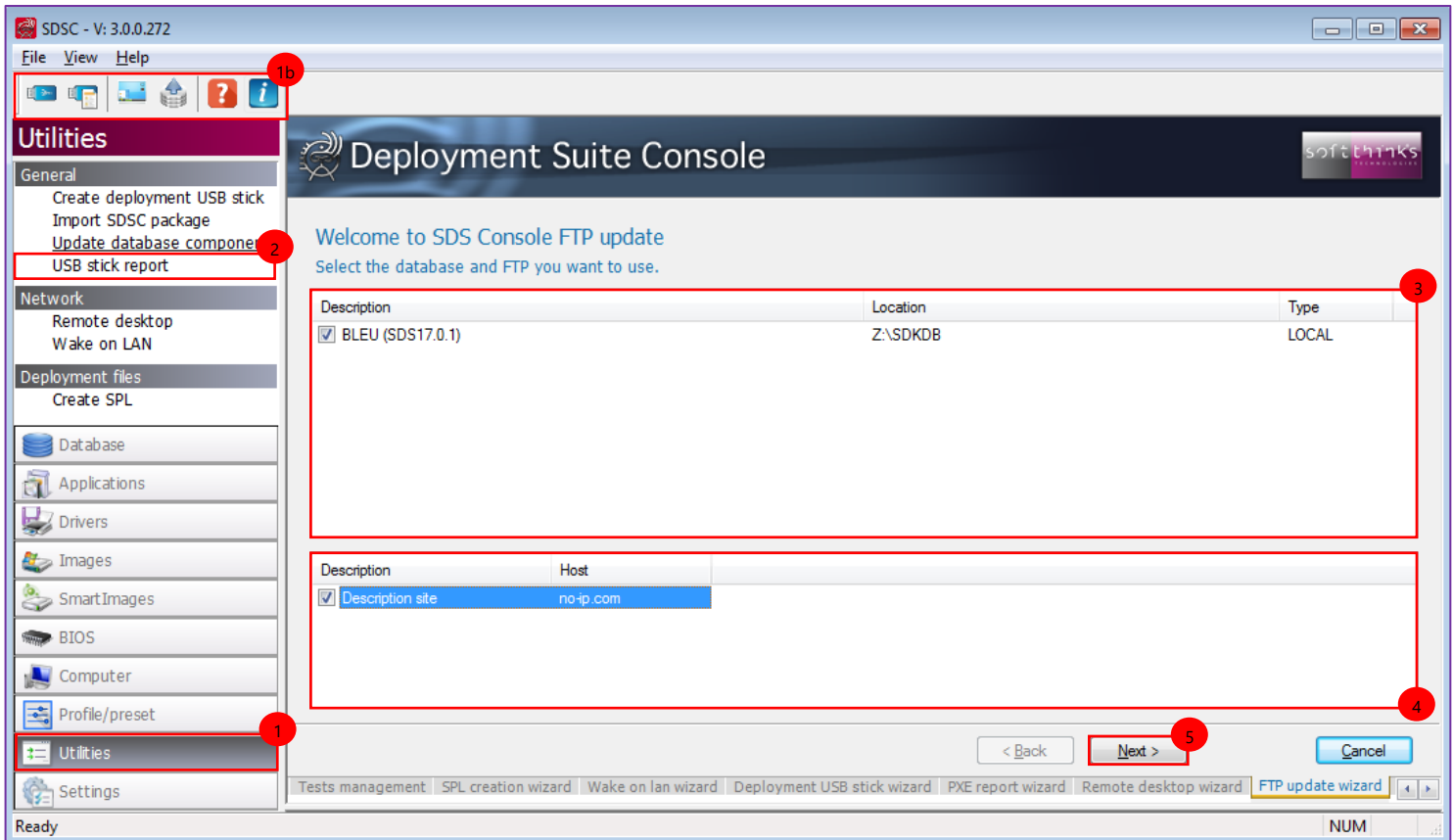
Import SDSC package

This feature offers you the ability to import a package (applications and drivers packages typically) into the database. Please see [Importing application\(s\) \("Utilities\Import SDSC Package"\)](#).

Update database components

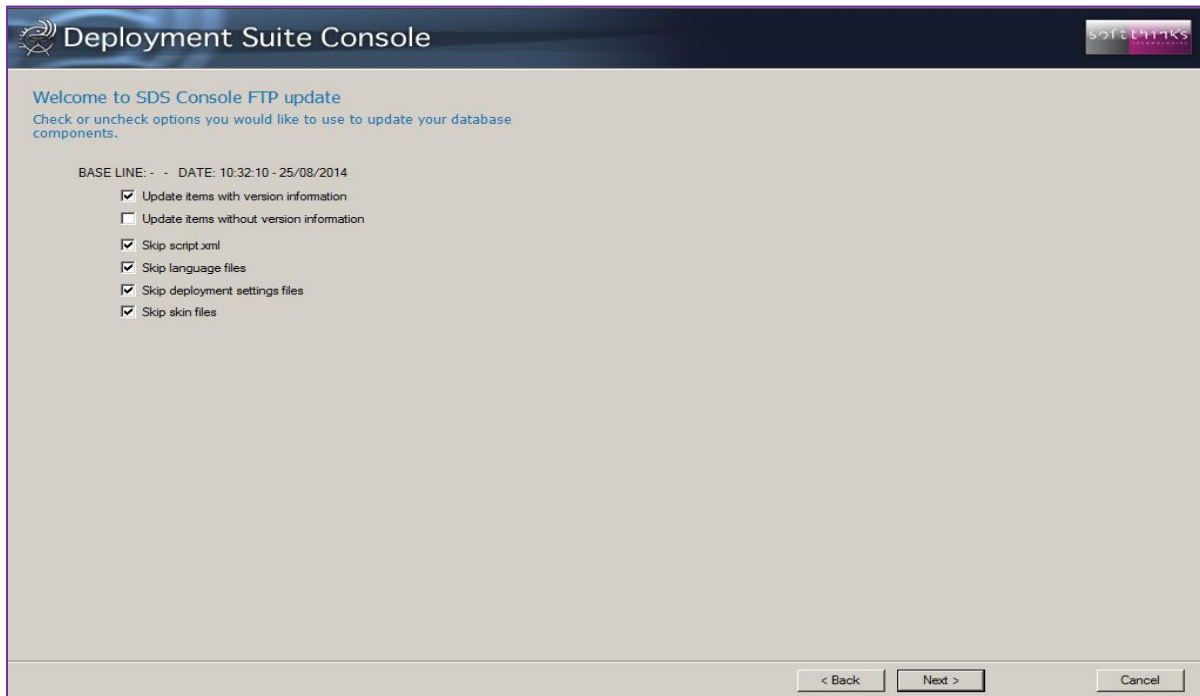
This utility will update your database components from a FTP containing the reference database (See [How to prepare the database for the "Update database components" feature](#)).

1. Click on the "Utilities" tab **1**, or directly on the  button located in the toolbar **2b** and go to step 3
2. Click on the "Update database components" operation **2**:

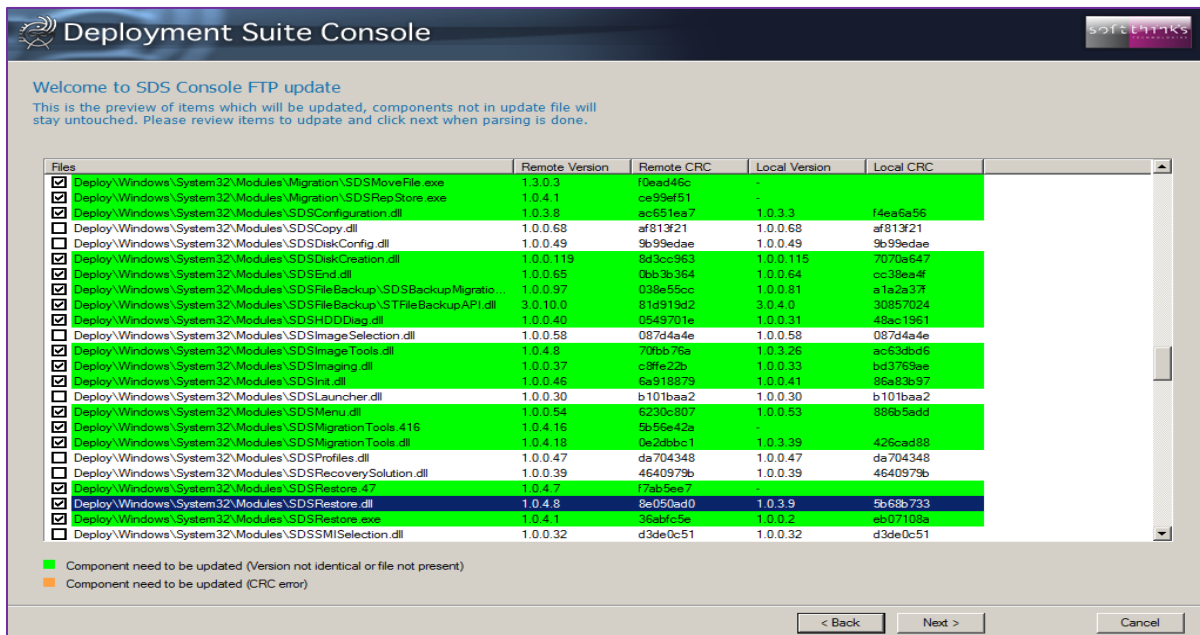


3. Choose the database you wish to update **3**
4. Select the FTP site where you put the reference database **4**
Hint: The FTP sites are configured in [Database settings](#)
5. Click on the "Next >" button **5**

6. Select the components you wish to update:




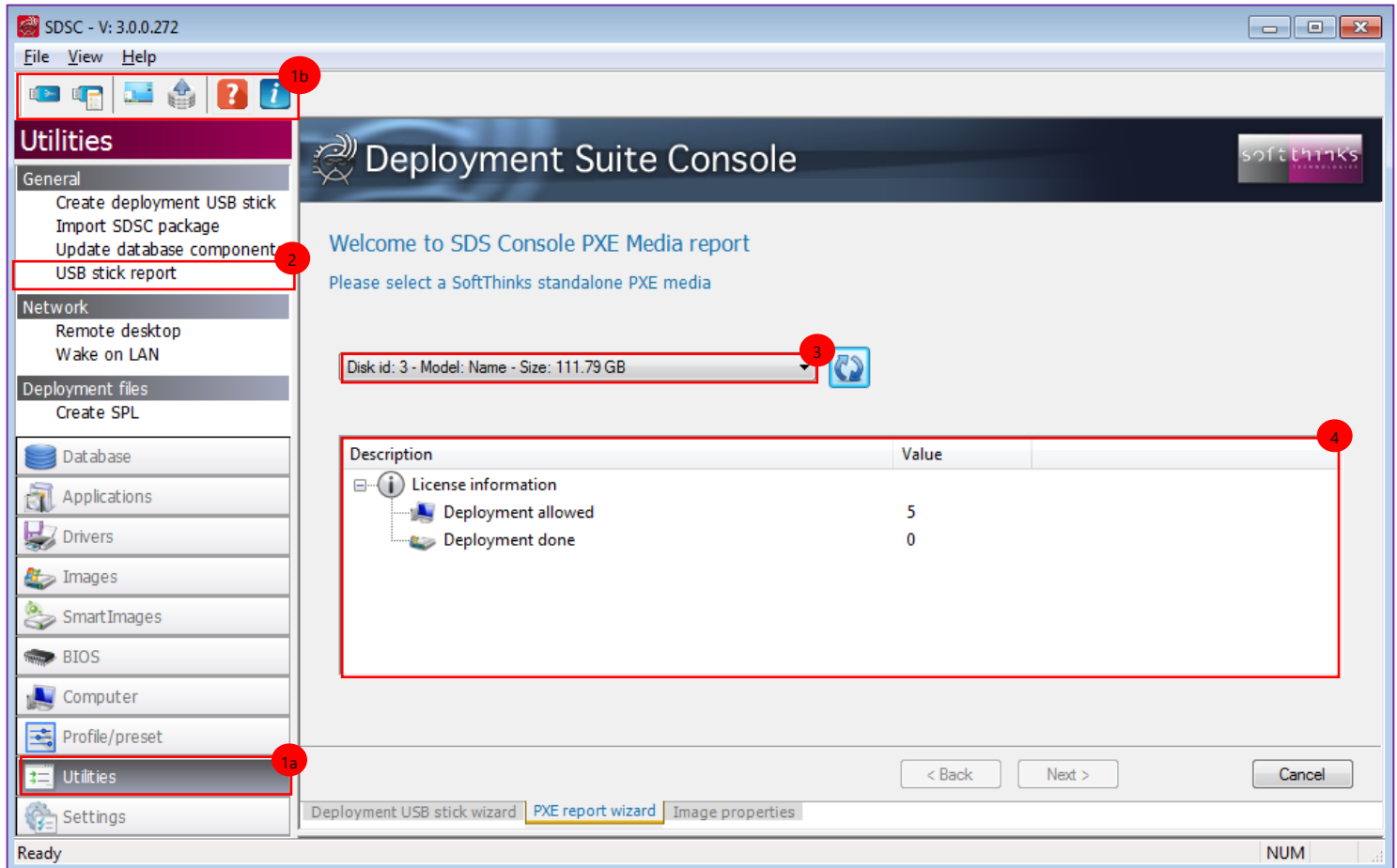
7. Review and modify the files if necessary (checked and displayed with green background) which have been pre-selected based on your component selections from the previous step and click on the "Next >" button:




USB stick report

Use this utility to check the number of deployments available on a Nomad Disk.

1. Click on the "Utilities" tab ^{1a}, or click directly on the  button in the toolbar ^{1b} and go to step 3
2. Click on the "USB stick report" operation ²




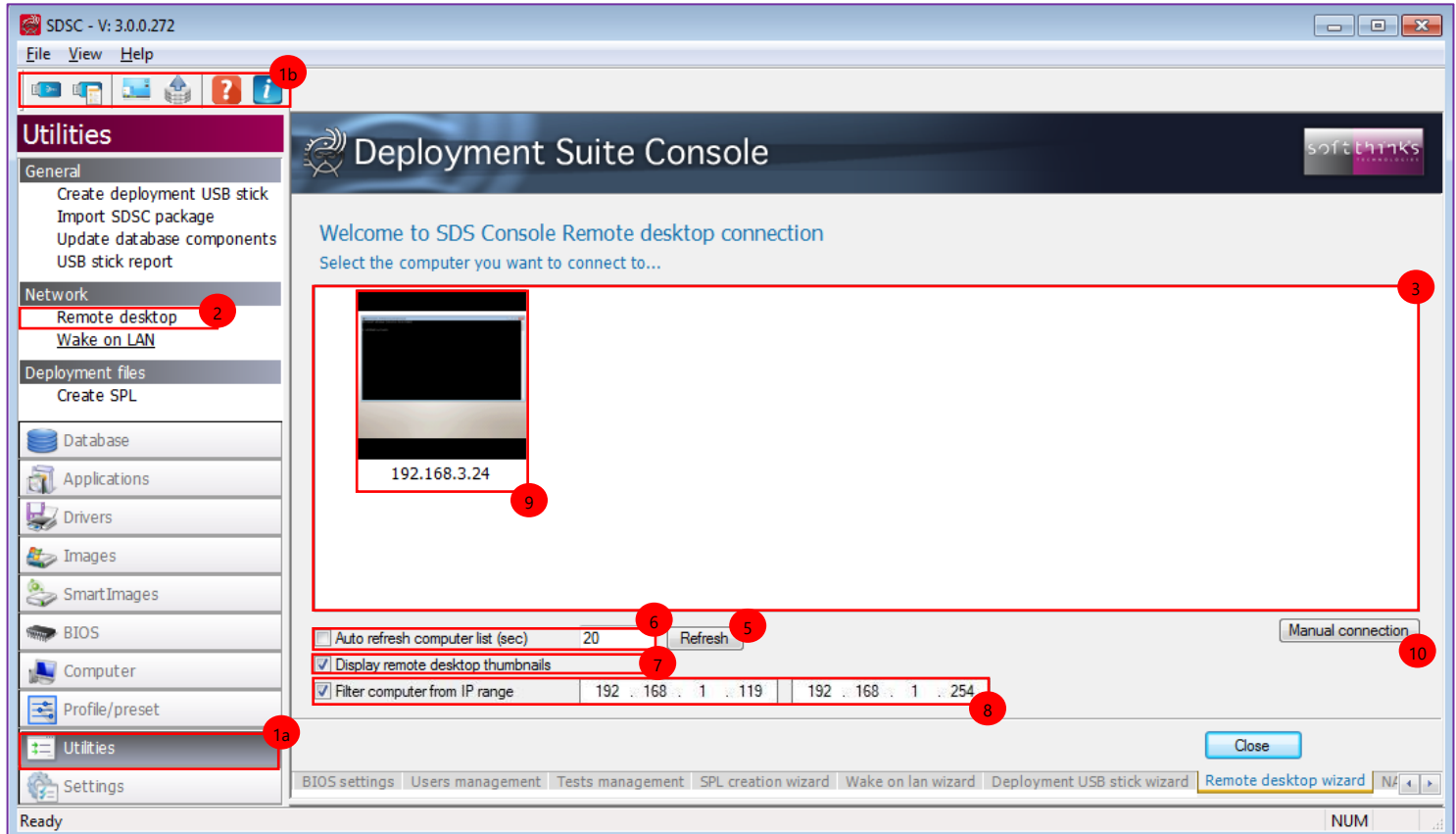
3. Insert your Nomad Disk, if it is not yet the case, and select it in the list ³. If your Nomad Disk doesn't appear in the list, click on the  button to refresh the list.
4. Check the license information ⁴

Network

Remote Desktop

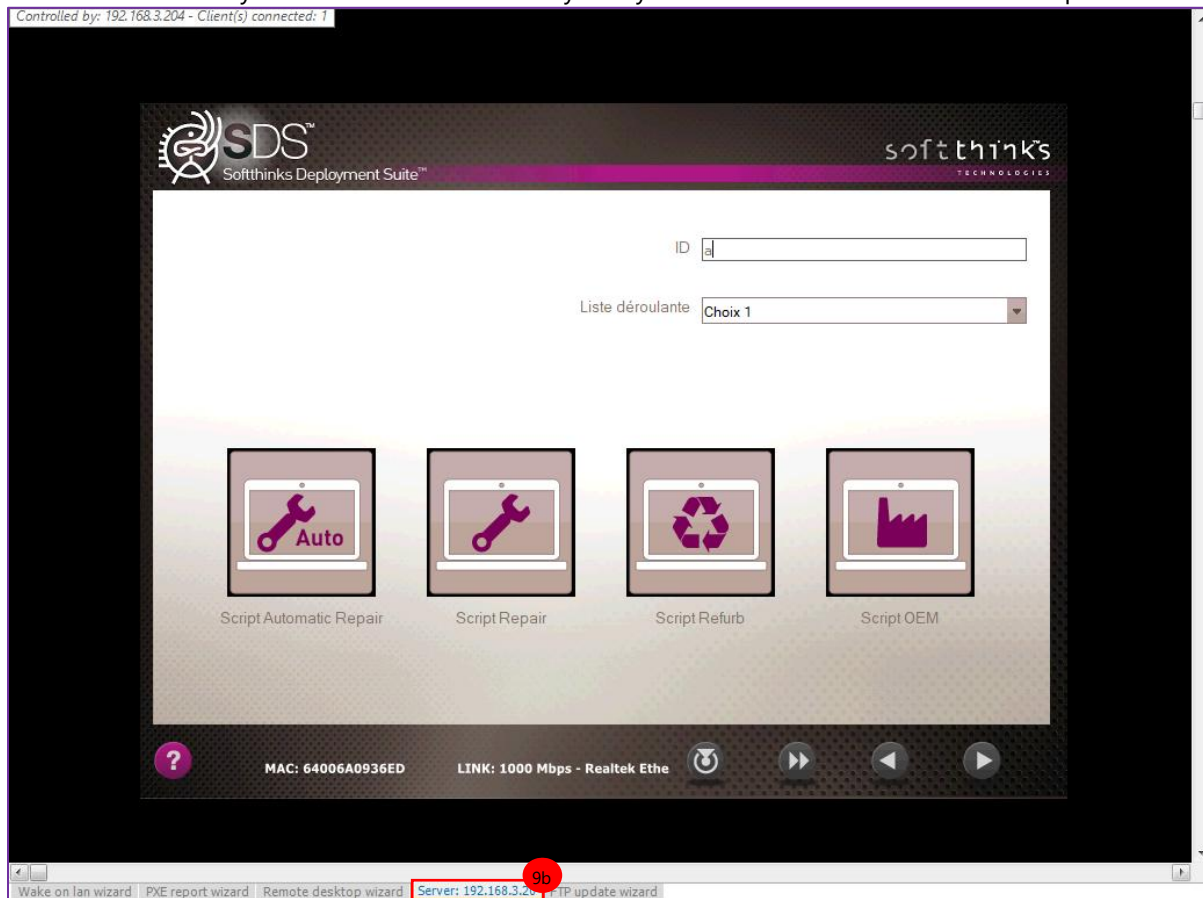
This utility gives you the ability to view the activity on all of the devices connected to the server and to remotely manage them.

1. Click on the "Utilities" tab ^{1a}, or directly on the  button located in the toolbar ^{1b} and go to step 3
2. Click on "Remote desktop" ²
3. You will see all the PCs connected to the server in real time ³

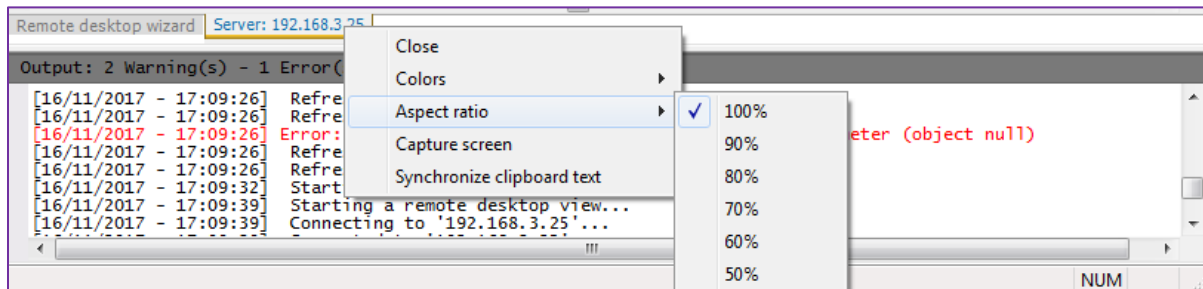


Hint: You can refresh this view ⁴ on demand by clicking on the "Refresh" button ⁵, or automatically every x seconds ⁶, and choose to display or not display the thumbnails ⁷. You can also filter the clients to display through an IP range ⁸

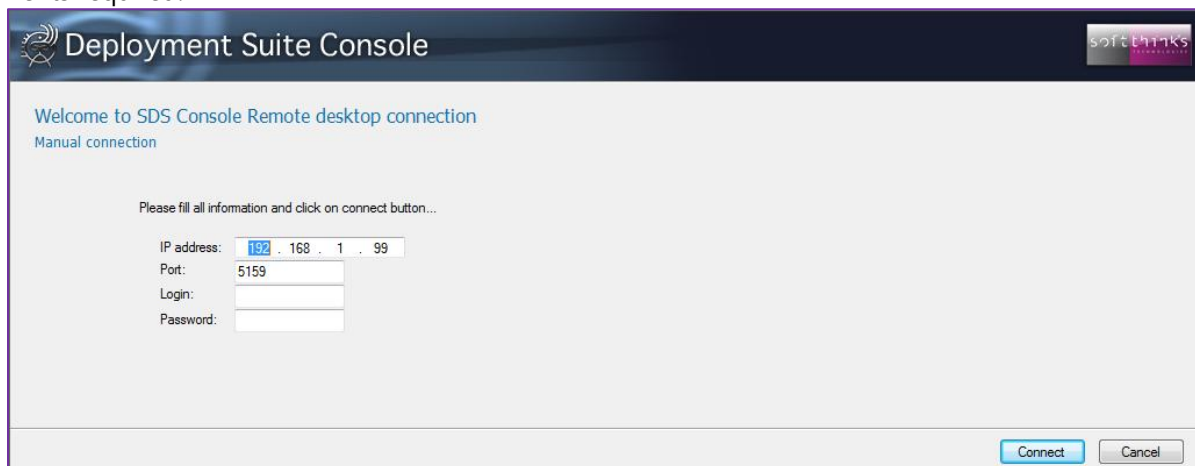
4. Click on the device ⁹ you wish to control remotely and you will obtain its screen contents replicated:



Hint: Right click on the remote display tab ^{9b} to display a popup menu which allows you to choose a more appropriate aspect ratio, change the colors depth (16 / 256 / 64K / 16M), capture the screen and synchronize clipboard text:



5. You can also connect to a device manually by clicking on the « Manual connection » button ¹¹ and entering the elements required:

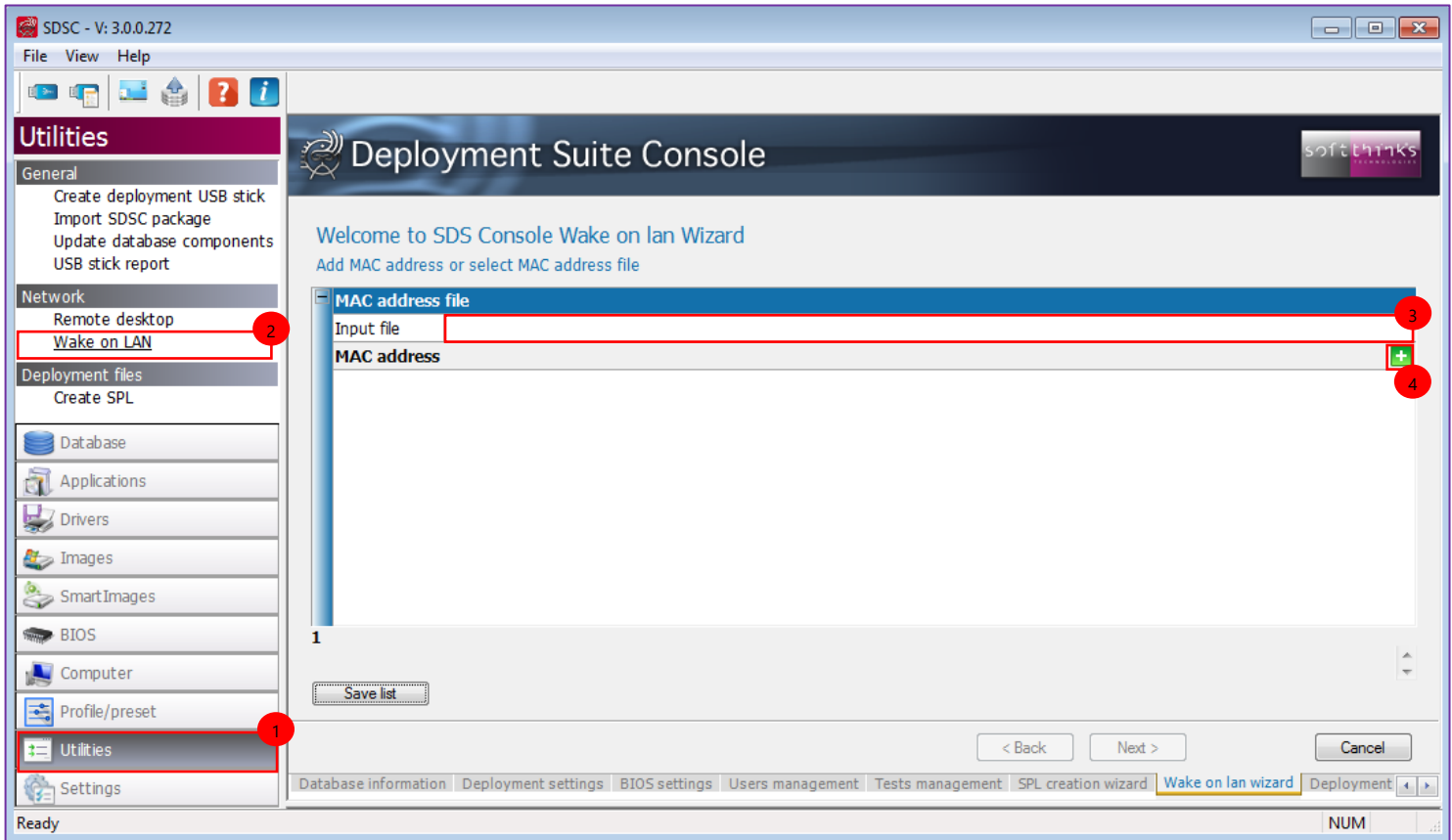


The screenshot shows the 'Deployment Suite Console' interface. At the top, there is a header with the 'softthinks' logo on the left and a smaller 'softthinks' logo on the right. Below the header, the main content area has a title 'Welcome to SDS Console Remote desktop connection' and a subtitle 'Manual connection'. A message reads 'Please fill all information and click on connect button...'. Below this, there are four input fields: 'IP address' (containing '192 . 168 . 1 . 99'), 'Port' (containing '5159'), 'Login', and 'Password'. At the bottom right, there are two buttons: 'Connect' and 'Cancel'.

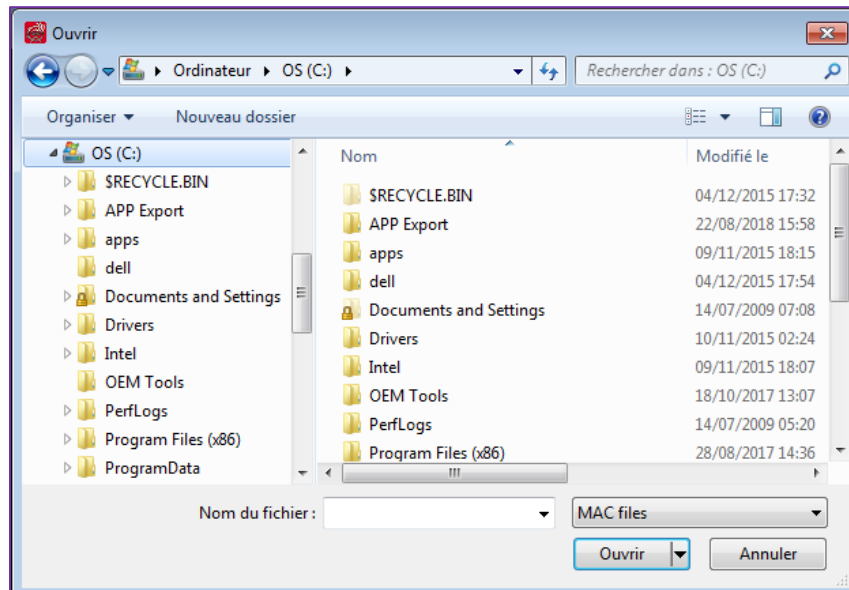
Wake on LAN



Use this utility to manage the Wake on LAN feature for devices which support it.

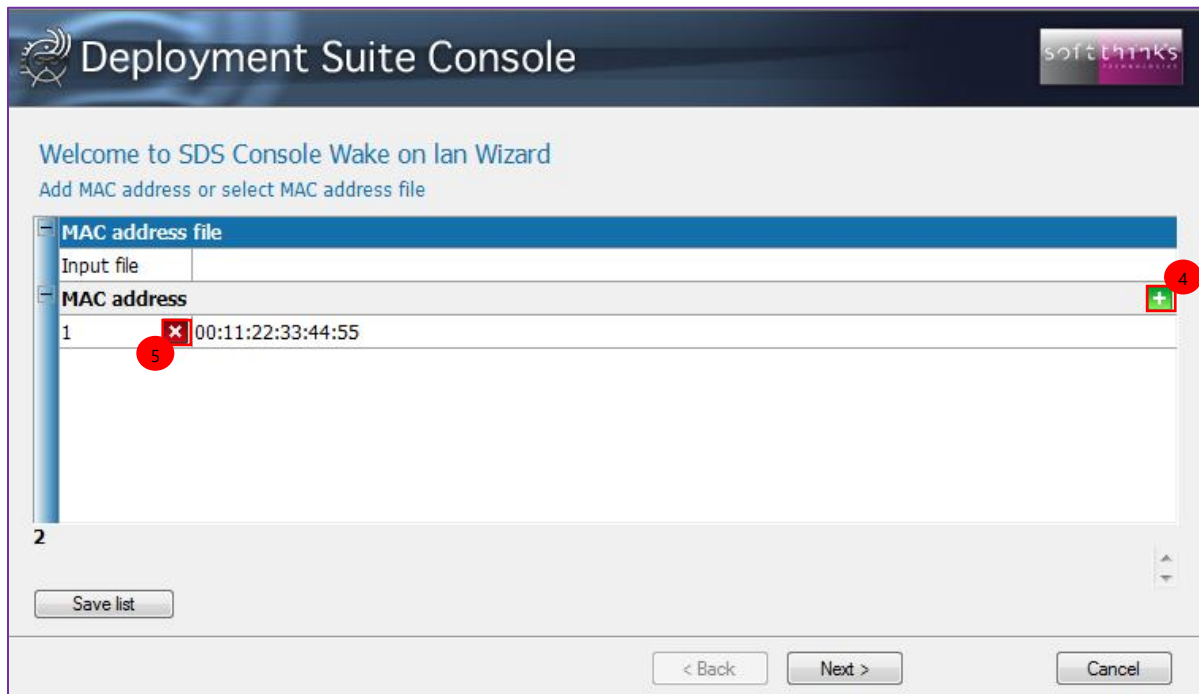
1. Click on the "Utilities" tab 1
2. Click on "Wake on LAN" 2



3. Click on the "Input File" field 3 and browse for the file containing the MAC addresses to add:



4. Or you can add manually a MAC address by clicking on the  button .



5. To delete a MAC address, click on the  button  in front of the MAC address you wish to delete.

Deployment Files

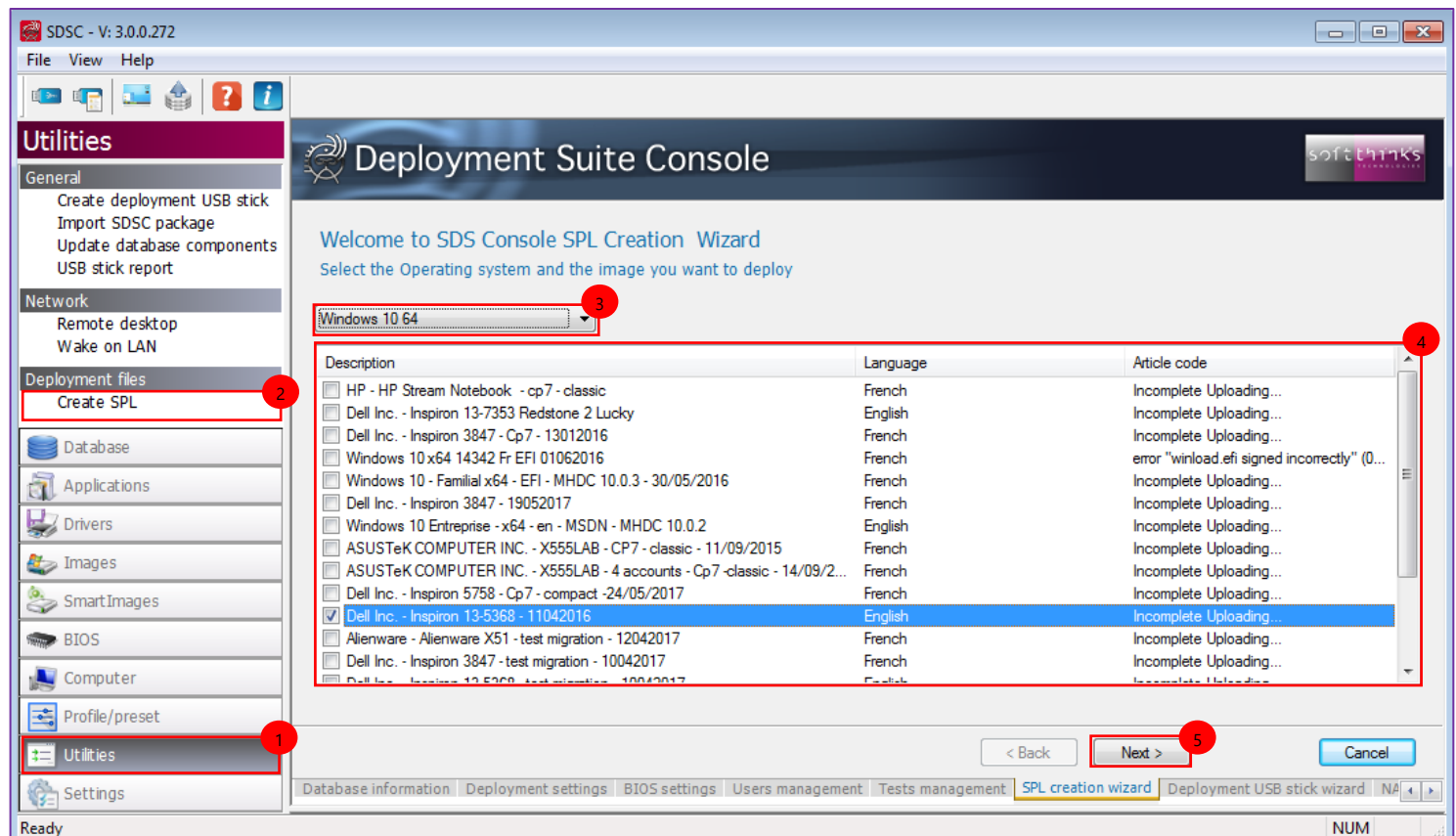
Create SPL

Note: SPLs are not commonly used any longer. They have been replaced with the ADF, Profile, and Preset files which are easily created directly from the source computers.

This utility generates SPL files containing information about what to automatically deploy to a specific model of computer. The SPL files are used for the automatic deployment of:

- Partition scheme,
- Tools used for enabling/disabling SDK features,
- Operating System,
- Smart Image,
- Applications,
- Drivers,
- Bundles,
- Security patches and updates,
- Tests to be run.

1. Click on the "Utilities" tab
2. Click on "Create SPL"
3. Select the Operating System
4. Select the image you want to deploy in the list (filtered by the OS you selected)
5. Click on the "Next >" button



6. Select the recovery scenario and options ⁶ you would like to use:

Deployment Suite Console

Welcome to SDS Console SPL Creation Wizard
Select the recovery scenario & options you would like to use

Recovery & Options	
Recovery type	Recovery from specific partition
Manual size	<input type="checkbox"/> (No)
Size (MB)	500
Hide Boot Key	<input checked="" type="checkbox"/> (Yes)
RP at disk end	<input checked="" type="checkbox"/> (Yes)
Visible	<input type="checkbox"/> (No)
Brand used	Nothing
Use percent value	<input checked="" type="checkbox"/> (Yes -> Percent size)
Disk layout	GPT
Boot disk +	

Recovery type
'Recovery_Type' value allow to set the recovery strategie used

< Back Next > Cancel

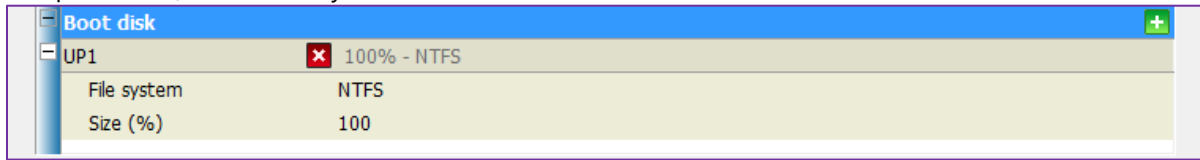
- **Recovery type:** Recovery scenario

- « No recovery »
- « Recovery from specific location »
- « Recovery from user partition »
- « No Recovery solution, use only original image disk typology »

If you choose the « Recovery from specific location » scenario you will have to set the parameters relevant to the Recovery Partition (RP):

- **Manual Size:** « Yes » to force the size of the Recovery Partition to the « **Size (MB)** » value (else the size is dynamically estimated)
- **Hide Boot Key:** « Yes » to hide the message about the RP boot key
- **RP at disk end:** « Yes » to create the RP at the end of the disk
- **Visible:** « Yes » to make the RP visible
- **Brand used:** Customizes the interface of the restore solution for a brand (logo...). Default « nothing » in the absence of specific customization.
- **Use percent value:** « Yes » to set the relative size (%) / « No » for absolute size (not relevant for the « No Recovery solution, use only original image disk typology » scenario)
- **Disk Layout:** Layout (MBR/GTP) of the disk. Depends on the image selected and cannot be modified.

7. You can specify the partitions to create on the target disk during deployment in the Boot disk section **7** by clicking on the **+** button and by settings for each partition added its size (in % or in MB depending on « **User percent value** » parameter) and its file system:



On the RIS Server, the newly created SPL file must be placed in the following location:

- X:\SPL\XXXXXXXXXX.SPL

Note: This transfer to the server can be an automated process. The transfer MUST be completed prior to deploying (PXE booting on the RIS server) the image to the PC.

After the SPL has been placed in the above location on the RIS server, the selectorSRV service will translate the file and output to the following locations based on the following conditions:

- Success:
 - X:\SPL\Success\XXXXXXXXXX.SPL
 - X:\SPL\Success\XXXXXXXXXX.SDK
 - X:\Deploy\XXXXXXXXXX.Selector.ini (Used for deployment)
 - X:\Deploy\XXXXXXXXXX.RSSelect.ini (Used for deployment)
- Error:
 - X:\SPL\Error\S000000000.SPL

The following outlines the deployment process:

1. Create SPL file.
2. Transfer SPL file to the RIS server.
3. Start RIS deployment (PXE boot).
4. Deployment tools will read DMI field and find matching deployment .ini files.
5. Display "Software List" for download with confirmation screen.
6. Deploy software image to recovery partition (RP).
7. Disconnect from server.
8. Deploy from RP to UP.
9. Test.
10. Shutdown.

Please refer to [How to edit SPL Files](#) for more details on SPL files contents.

Find components

This new feature introduced in SDS 19.0 allow you to search for components of any type through their description (with wildcards):

Utilities

General

- Create deployment USB stick
- Import SDSC package
- Update database components
- USB stick report

Network

- Remote desktop
- Wake on LAN

Deployment files

- Create SPL

Find components

Filter:

☐ case sensitive Find

Result	Type	Date	Language
Dell Inc. - Inspiron 5537 - 2210	Image	2018/10/22 22:08:59	French
SmartImage From Dell Inc. - ...	SmartImage	2019/06/14 20:36:46	English
Dell Inc. - Inspiron 5758	Image	2019/06/14 20:36:46	English
Dell Inc. - RS4 Gen Pro Skinny	Image	2018/07/09 14:49:52	English

Output: 0 Warning(s) - 0 Error(s)

```
[03/10/2019 - 09:55:05] Closing boot image setting wizard
[28/11/2019 - 13:34:22] '1' item(s) matching requested filter
[28/11/2019 - 13:34:37] '4' item(s) matching requested filter
[28/11/2019 - 13:35:01] '4' item(s) matching requested filter
[28/11/2019 - 13:35:12] Starting database information dialog...
[28/11/2019 - 13:35:12] Showing 'Database release 18.0.0' database information from 'E:\REMOTEI
[28/11/2019 - 13:35:12] Updating database component information, please wait...
[28/11/2019 - 13:35:18] Starting application properties wizard...
[28/11/2019 - 13:35:18] Displaying 'APP000003' application properties
[28/11/2019 - 13:35:18] Starting application properties wizard...
[28/11/2019 - 13:35:18] Displaying 'APP000003' application properties
[28/11/2019 - 13:35:20] Starting driver properties wizard...
[28/11/2019 - 13:35:20] Displaying drivers by Categories: '7' items
[28/11/2019 - 13:35:41] Starting BIOS image properties wizard...
[28/11/2019 - 13:35:41] Displaying 'BIOS000000' BIOS properties
[28/11/2019 - 13:36:38] Updating database component information, done.
```

Once you found the component you were searching for, you can directly delete it, edit it, show it or copy it to another database through the contextual menu displayed when you right click on any item of the search results:

Find components

Filter:

☐ case sensitive Find

Result	Type	Date	Language
Dell Inc. - Inspiron 5537 - 2210	Image	2018/10/22 22:08:59	French
SmartImage From Dell Inc. - ...	SmartImage	2019/06/14 20:36:46	English
Dell Inc. - Inspiron 5758	Image	2019/06/14 20:36:46	English
Dell Inc. - RS4 Gen Pro Skinny	Image	2018/07/09 14:49:52	English

Database

Database release 18.0.0

Settings

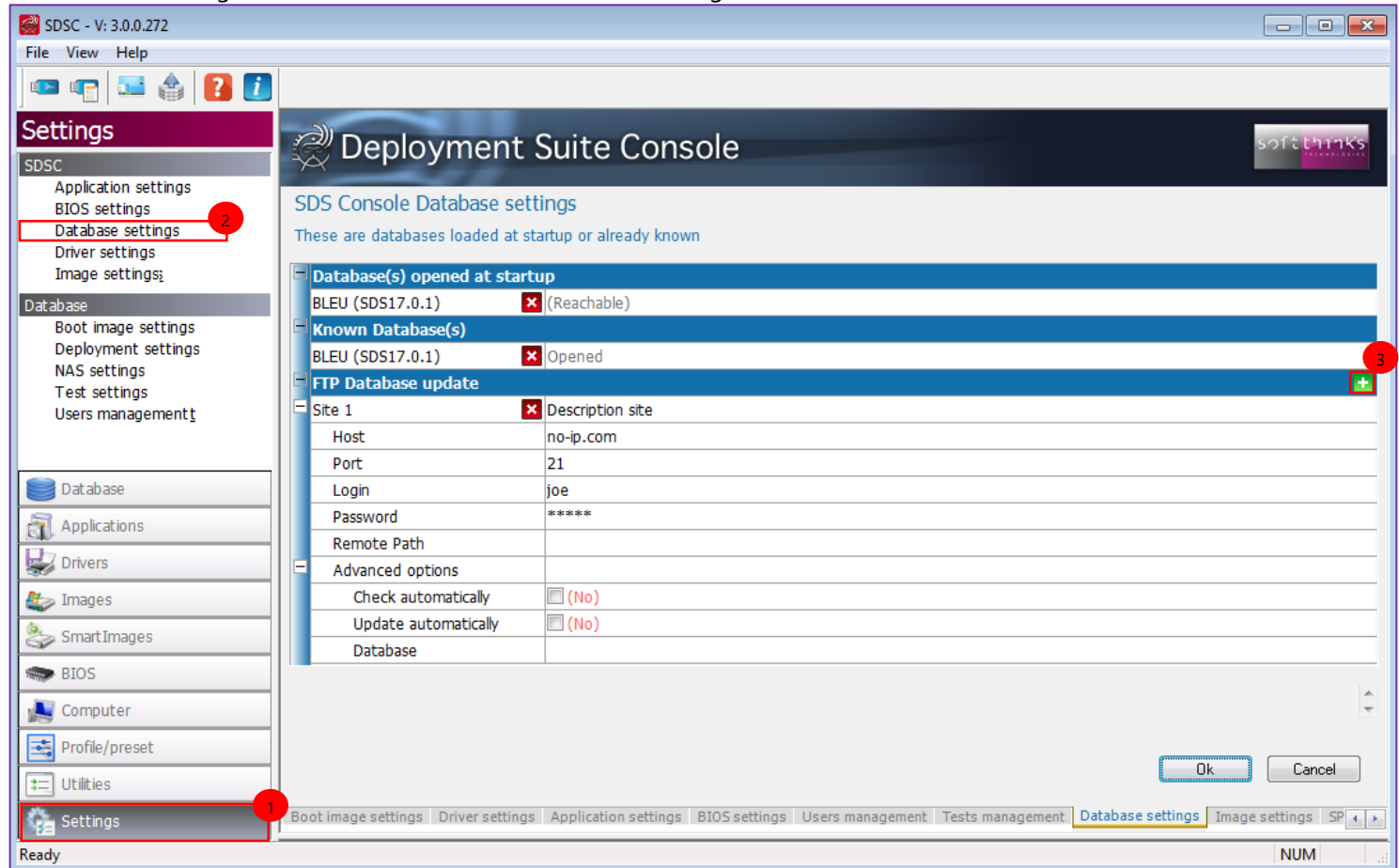
SDSC

Database settings

You will find the database settings below:

- Database(s) opened at startup
- Known Database(s)
- FTP Database update (See [Update database components](#))

Click on the "Settings" tab ¹ and then on the "Database settings" item ² :



You can enter several FTP sites for the database update feature by clicking on the button ³ and filling in those fields:

- **Site <x>**: FTP description
- **Host** : FTP address (domain name or IP)
- **Port**: FTP port (21 by default)
- **Login/Password**: FTP credentials
- **Remote path**: Remote path where is located the master database
- **Advanced options**
 - **Check automatically**: « Yes » to automatically check for a new update
 - **Update automatically**: « Yes » to apply automatically an update
 - **Database**: Database to update

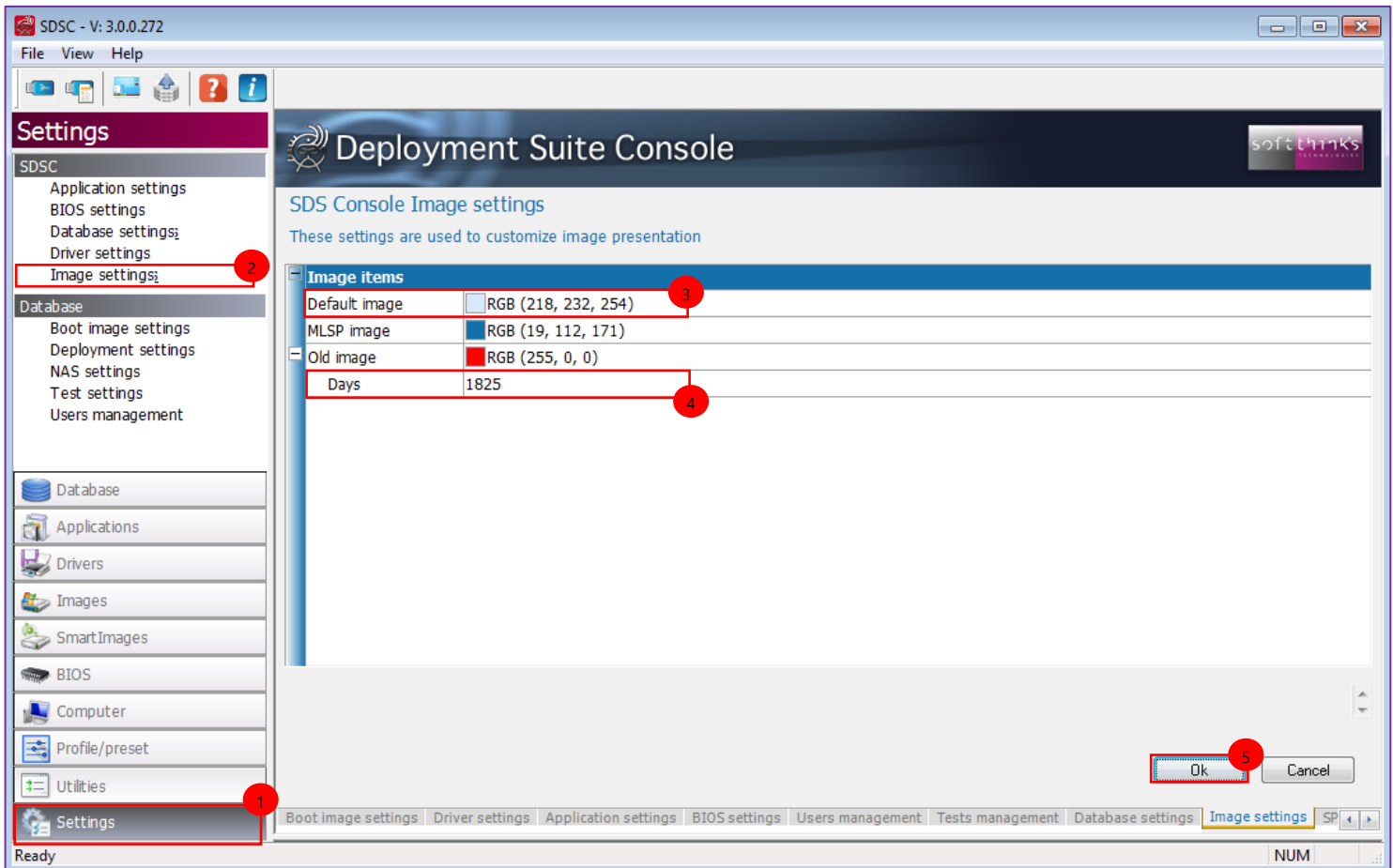
To remove an FTP site, click on the button in front of it.

Image settings

When you look at the images list you might notice that some of those images have a specific background color. Those different background colors allow you to quickly identify which ones are default deployment images, which ones are multilingual and which ones are old.

You can customize those colors as well as the number of days after which you consider an image as old.

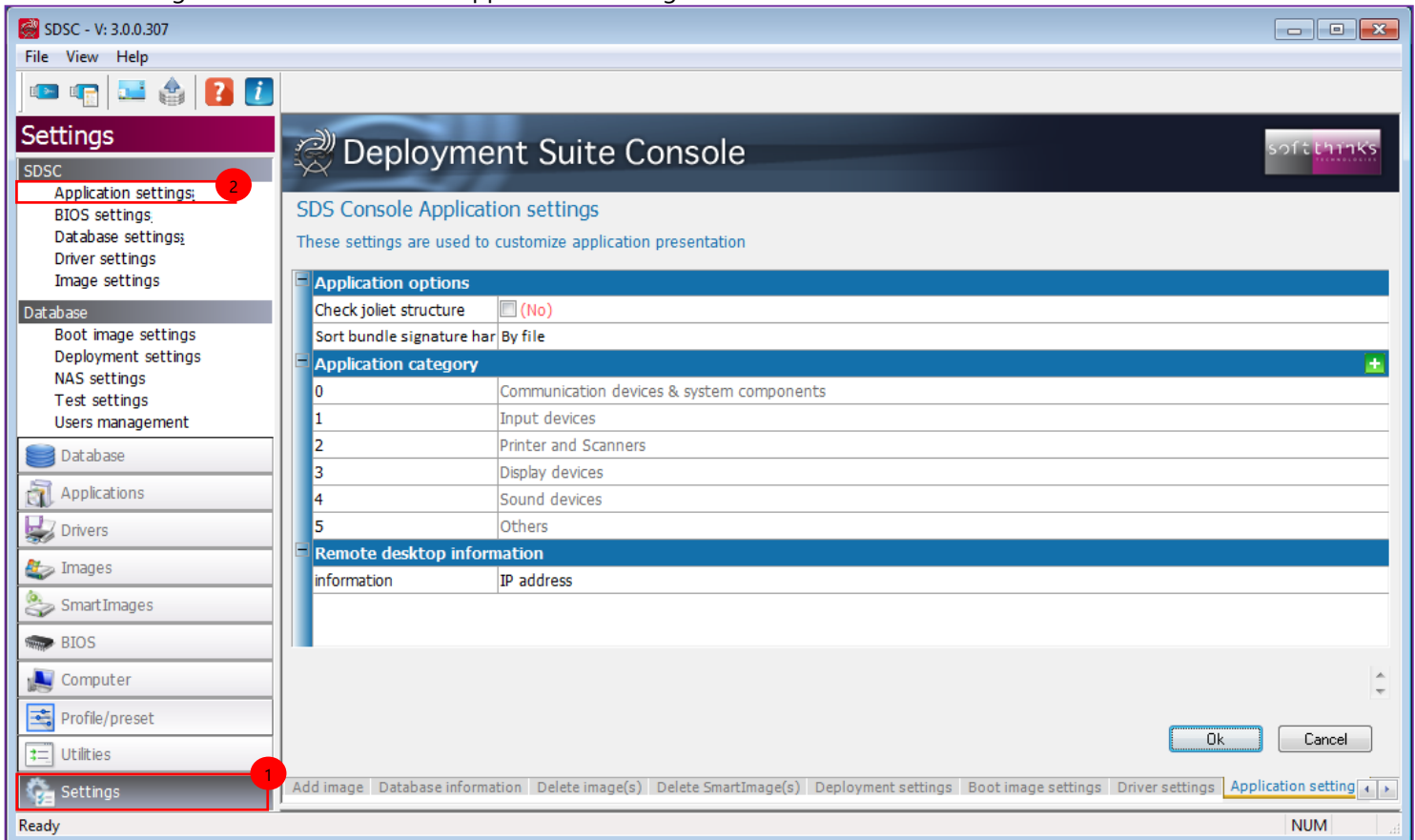
1. Click on the "Settings" tab 1
2. Click on "Image settings" 2



3. Click on the image type for which you want to change the background color (Default image in our screenshot) and select the new color. 3
4. Indicate the number of days after which you consider an image as old 4
5. Click on the "OK" to apply your changes 4

Application settings

Click on "Settings" tab ¹ and then on "Applications settings" ²:

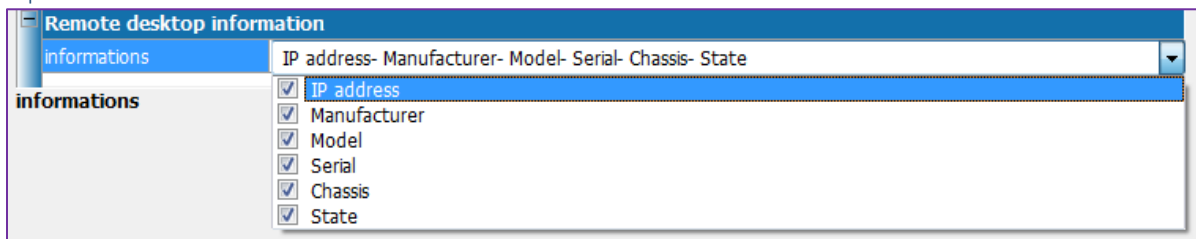


Application options

Check the « Check Joliet structure » option to ensure that the directories containing applications are compliant to ISO9660 + Joliet. This is helpful when applications are stored on optical media.




« Sort bundle signature hardware » allows to switch between grouping PNP by signature hardware file or by device type.

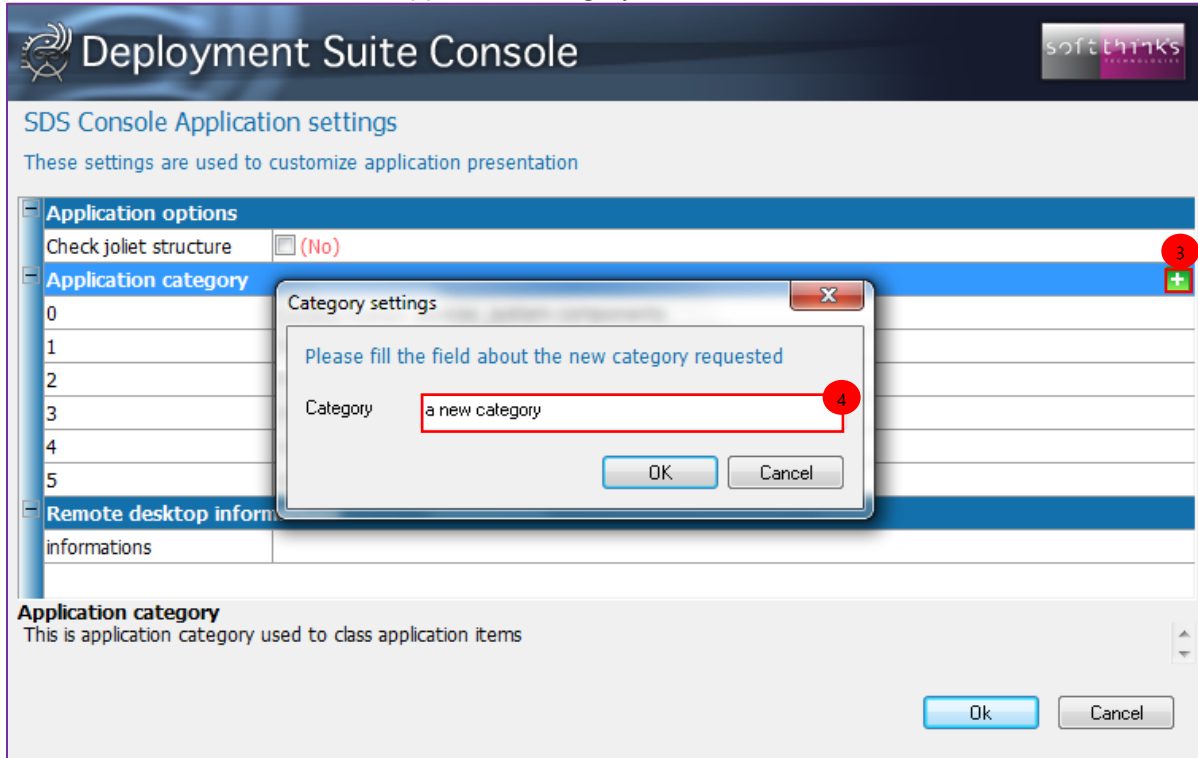
Remote desktop information





Application categories


An application category is used to define the type of application in the database. This is useful for organizing the database and makes sorting and searching by category easier. You may add new categories to the Application type and these will be available when creating or editing an application in the database.

1. Click on the  button  to add an application category enter its name in the text field :



2. The new category appears at the end of the list:

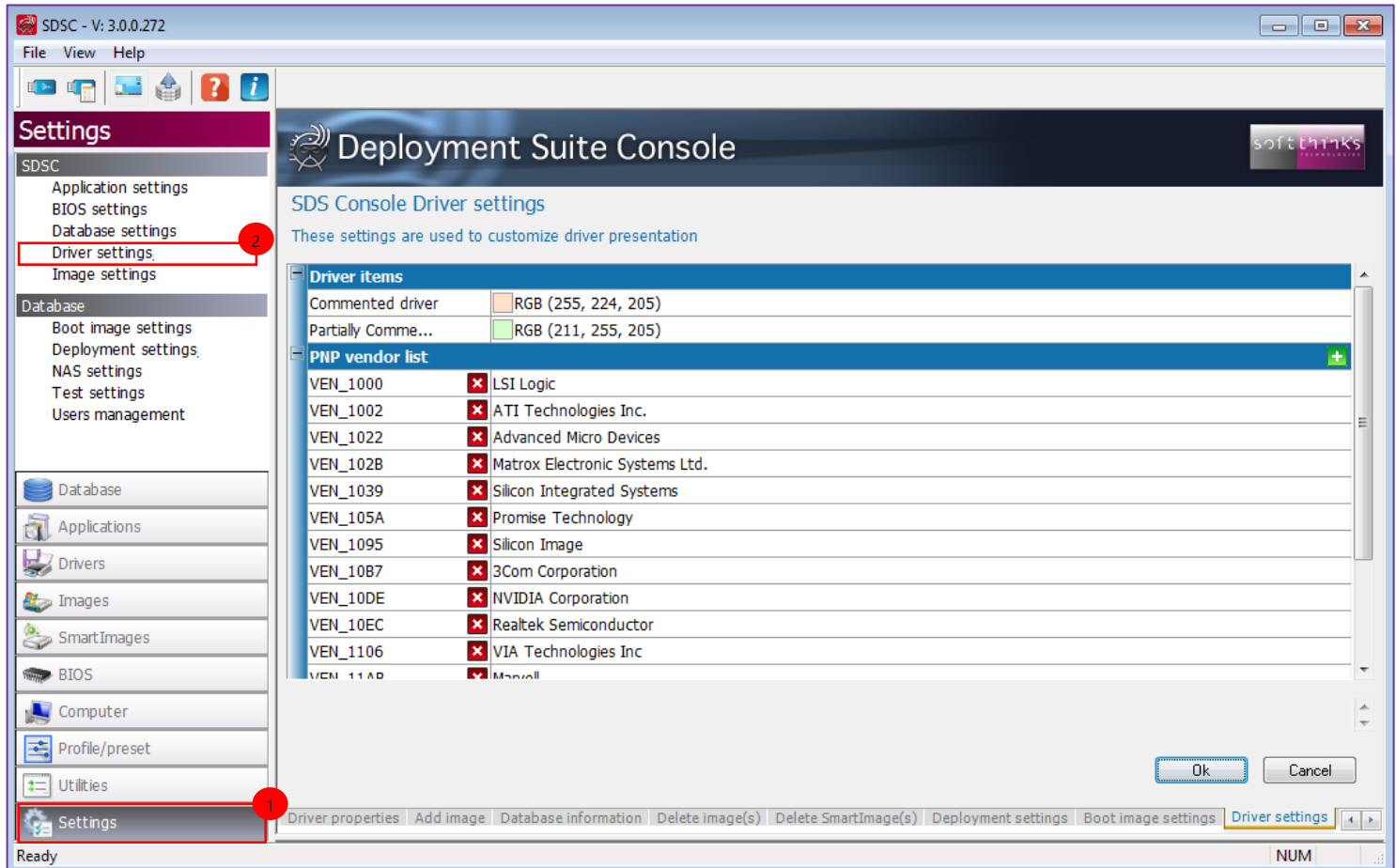
Application category		
0	Communication devices _system components	
1	Input devices	
2	Printer and Scanners	
3	Display devices	
4	Sound devices	
5	Others	
6	 a new category	

Hint: Click on the  button in front of a category you added to delete it (you cannot remove predefined application categories).

Driver settings

The driver settings are used to customize driver presentation.

1. Click on the "Settings" tab 1
2. Click on the "Driver settings" operation 2



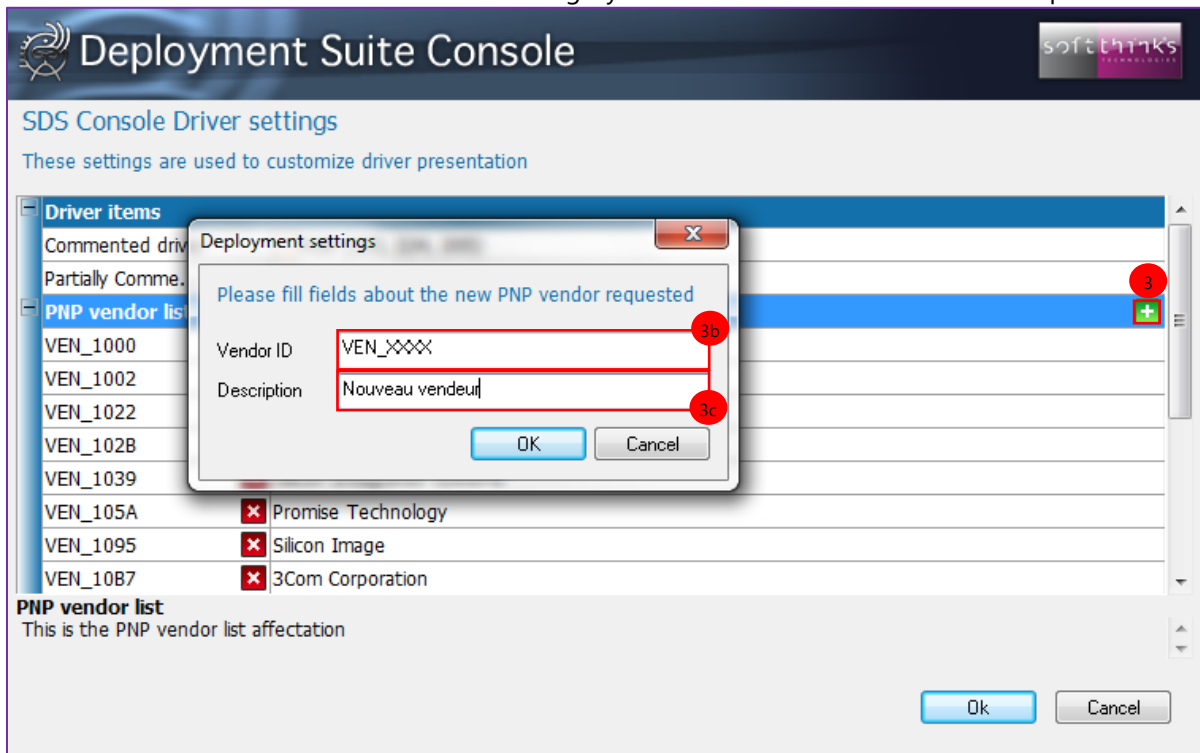
Driver items

You can customize the background color of the drivers depending if they are commented or partially commented.

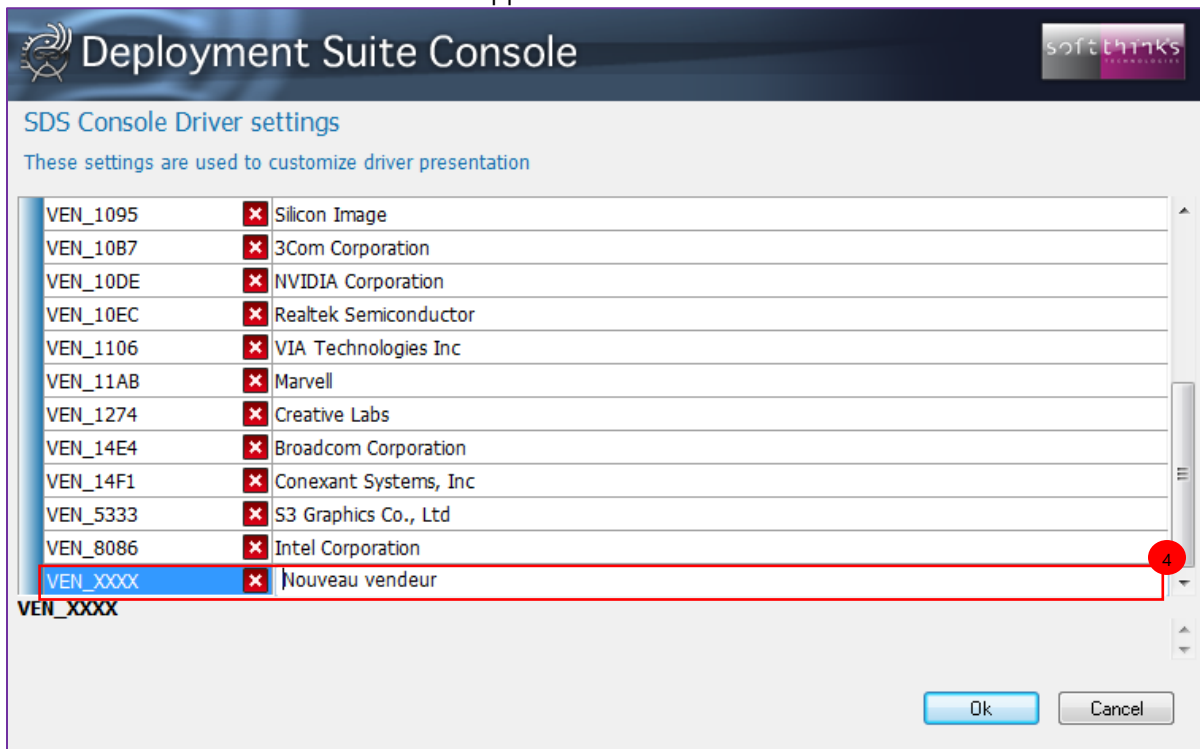
PNP vendor list

A vendor category is used to define the type of drivers in the database. This is useful for organizing the database and makes sorting and searching by category easier. You may modify, add and remove categories and these will be available when creating or editing a driver in the database.

3. Click on the **+** button **3** to add a new vendor category and fill the Vendor ID **3b** and Description **3c** text fields:



4. The new Vendor ID manufacturer name will appear at the end of the list:

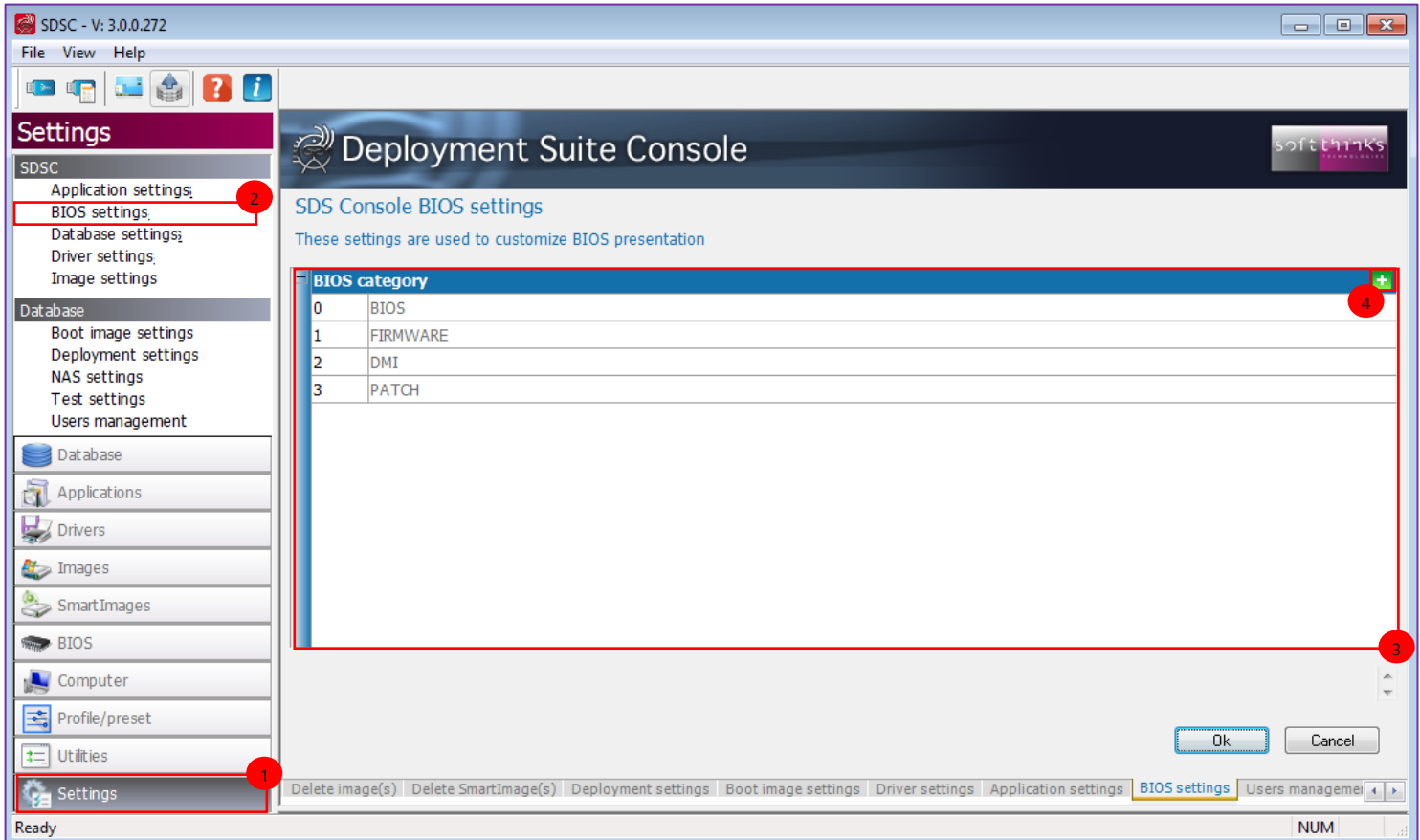



Hint: Double-click on an item to edit it and click on the **X** button in front of a category to delete it.

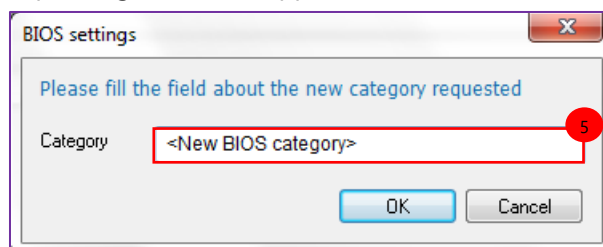
BIOS settings

A BIOS category is used to define the type of BIOS component in the database. This is useful for organizing the database and makes sorting and searching by category easier. You may add new categories to the BIOS component type and these will be available when creating or editing BIOS components in the database.

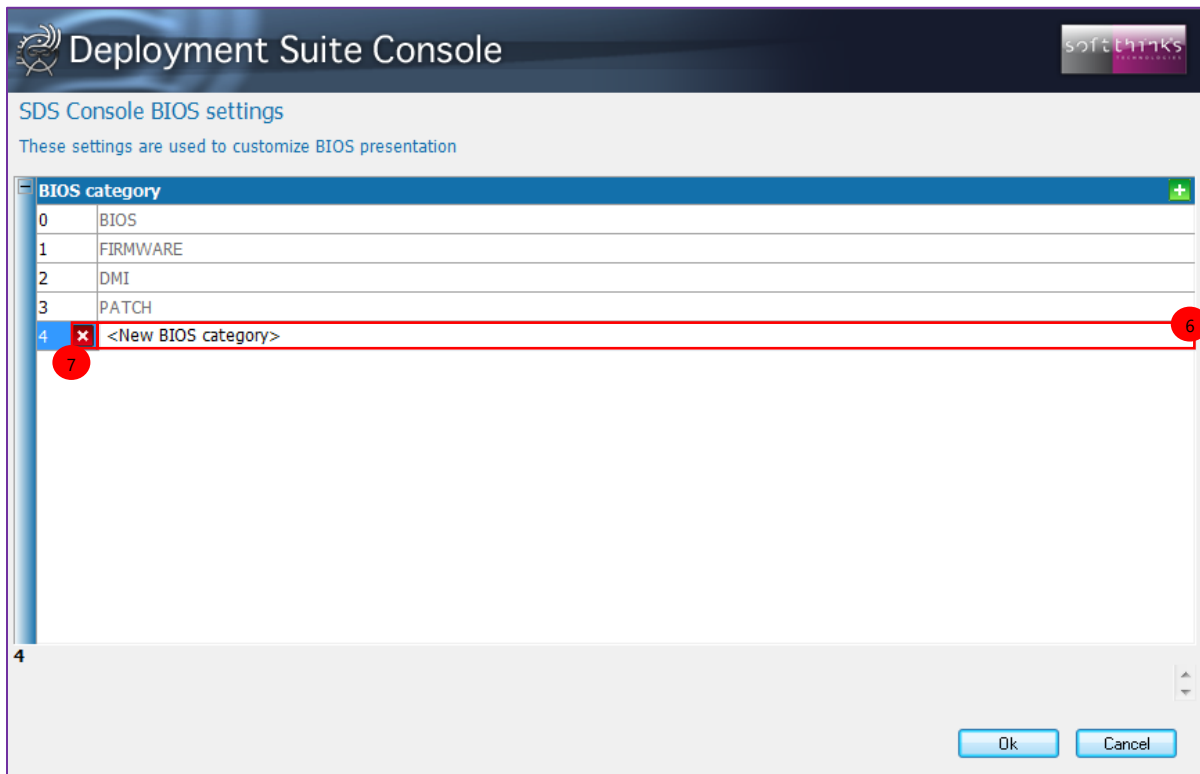
1. Click on the "Settings" tab
2. Click on "BIOS settings"
3. You will see the current BIOS categories on the right. Here you have the predefined categories which cannot be modified or deleted.



4. If you want to add your own category, click on the  button to add a new BIOS component category
5. Enter its name in the pop-up dialog box which appears:



6. The new category is added to the list 6 and you can directly rename it by double-clicking on it



7. To delete a non-predefined category, click on the X button in front of it 7.

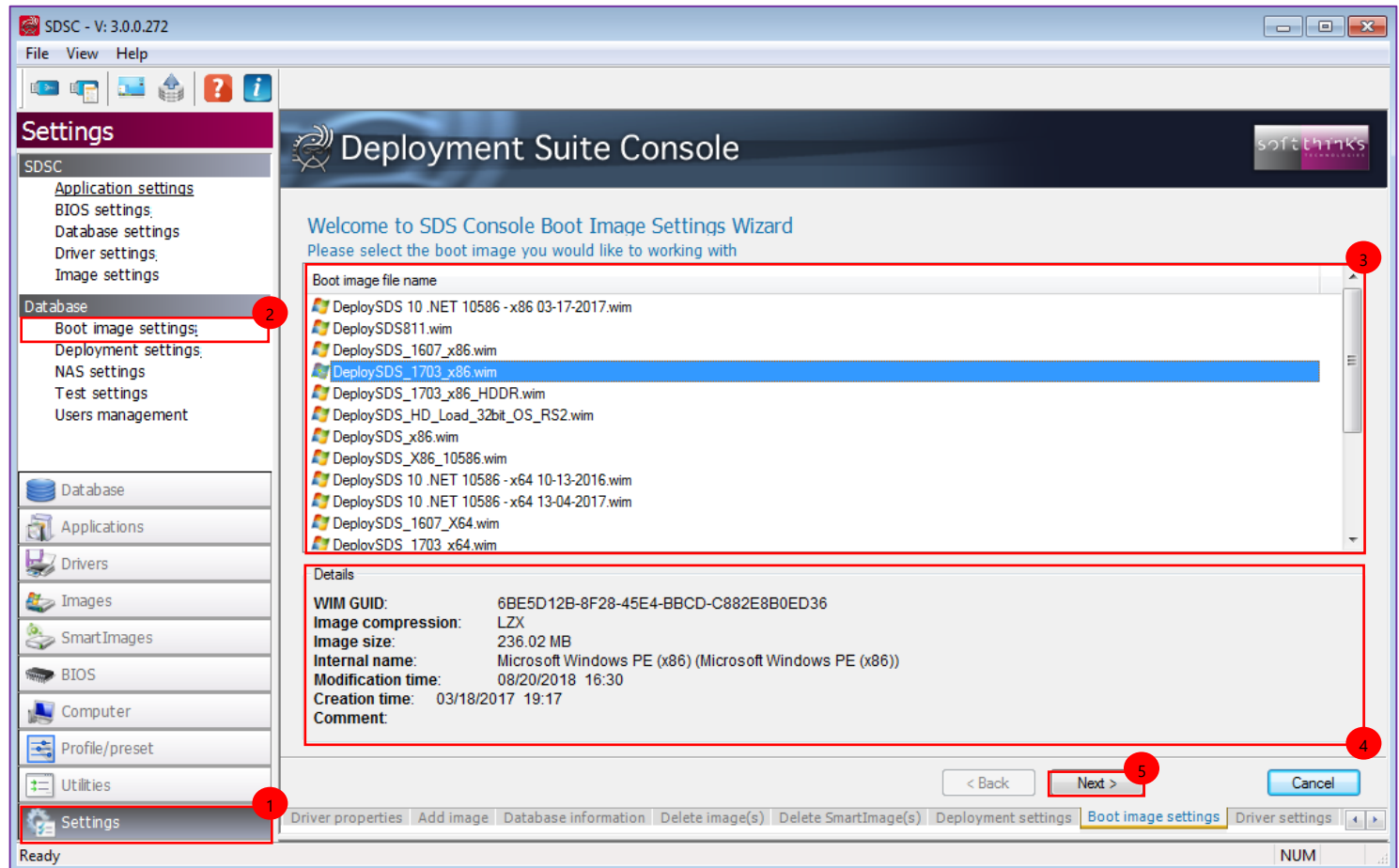
Database

Boot Image settings

The SDS Console Boot Image Settings Wizard allows you to perform several operations on boot images:

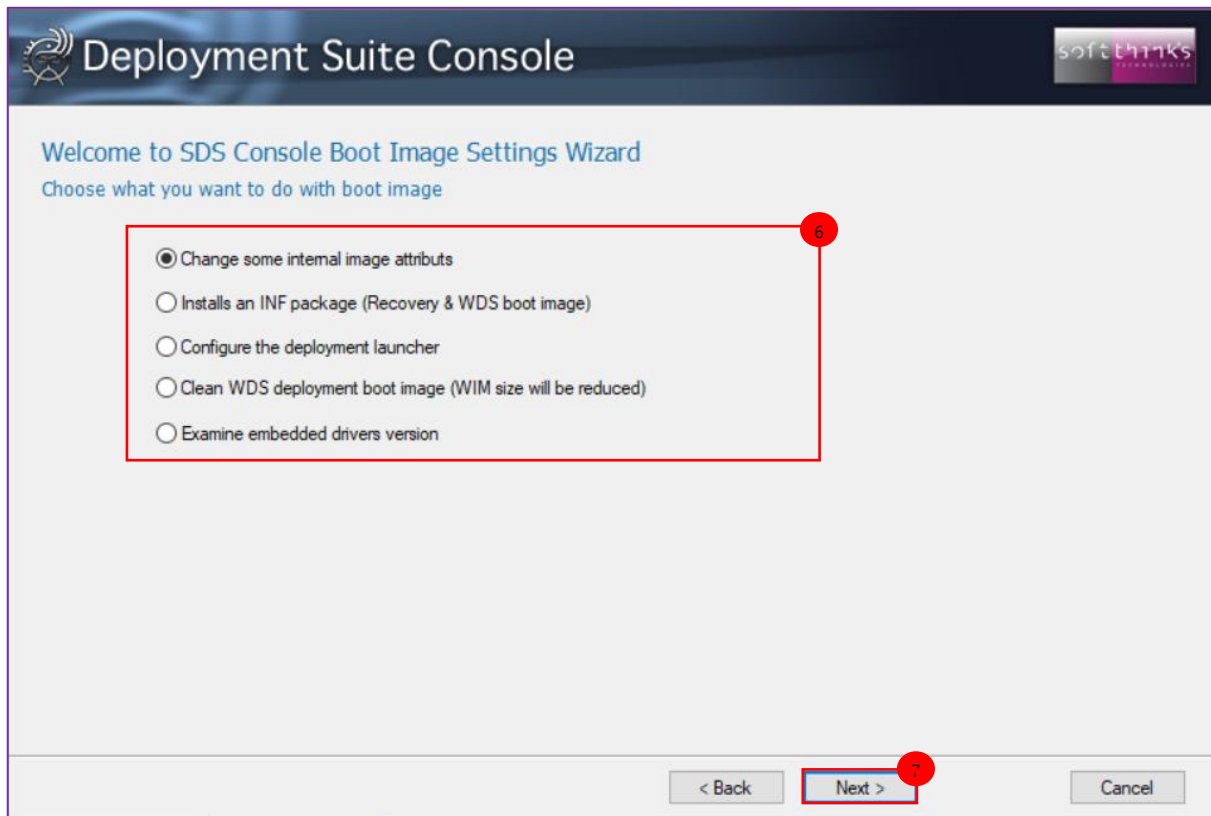
- Modifying some internal attributes
- Injecting driver(s) to a boot image
- Configuring the deployment launcher: domain, username, password...
- Cleaning up WDS Boot Image (image size will be reduced)

1. Click on the "Settings" tab 1
2. Click on "Boot image settings" 2



3. Select the boot image you would like to work with 3
4. You can review the selected image properties in the Details section at the bottom 4 to confirm your choice
5. Click on the "Next >" button 5


6. Choose the action you want perform on the selected boot image ⁶ :

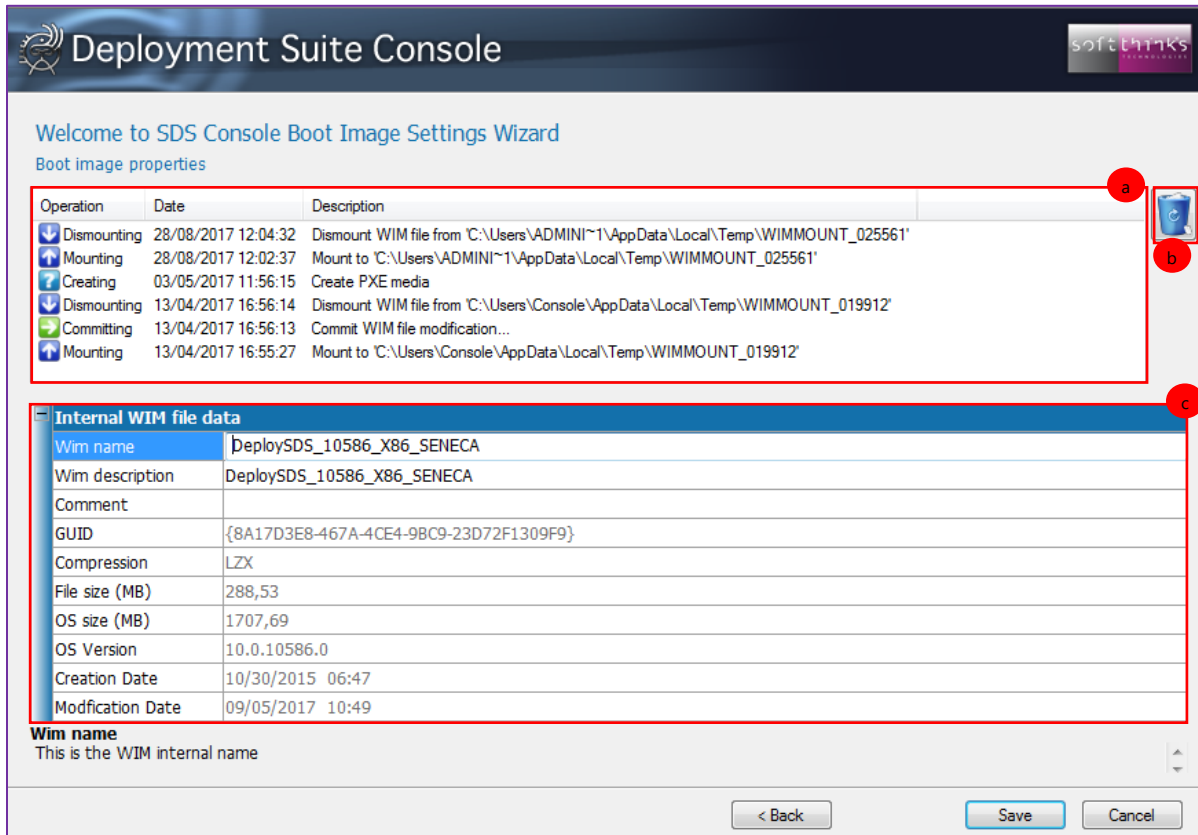


- **Change some internal image attributes:** View and edit the boot image activities and properties
- **Installs an INF package (Recovery & WDS boot image):** Inject a driver in the boot image
- **Configure the Deployment launcher:** View and edit the properties of the deployment launch process
- **Clean WDS deployment boot image:** Clean up the boot image from older copies of files modified
- **Examine embedded drivers version:** View and manage the drivers included in the boot image

7. And click on the "Next >" button

- Change some internal image attributes

If you selected the “Change some internal image attributes” option in step 6, you can view the last activities made on the selected boot image **a** and purge this history by clicking on the  button **b** :



You can also view the boot image properties **c** and modify some of them (the first three):

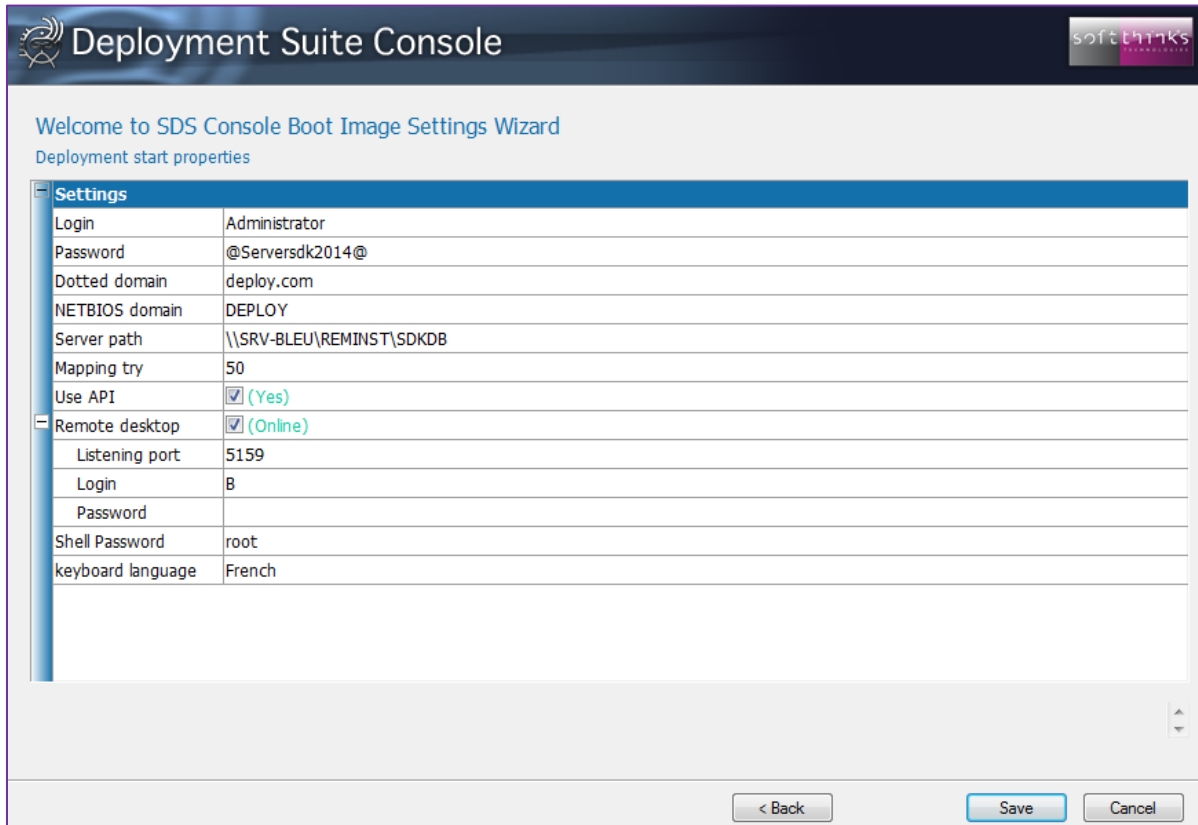
- **Wim name:** Boot image name
- **Wim description:** Boot image description
- **Comment:** Optional comment
- **GUID:** Boot image ID
- **Compression:** Compression method (LZX...)
- **File Size (MB):** Boot image size (compressed)
- **OS Size (MB):** Boot image contents size (uncompressed)
- **OS Version:** Version of the boot image OS
- **Creation Date:** Boot image creation date
- **Modification Date:** Boot image last modification date

- Installs an INF package (Recovery & WDS boot image)

Please refer to [Injecting a driver \("Inject Driver\(s\)" operation\)](#).

- Configure the Deployment launcher

If you selected the “Configure the Deployment launcher” option in step 6, you can change attributes related to networking so a network connection can be established during deployment to transfer data to the target system:



Deployment Suite Console

Welcome to SDS Console Boot Image Settings Wizard

Deployment start properties

Settings	
Login	Administrator
Password	@Serversdk2014@
Dotted domain	deploy.com
NETBIOS domain	DEPLOY
Server path	\\SRV-BLEU\REMINST\SDKDB
Mapping try	50
Use API	<input checked="" type="checkbox"/> (Yes)
Remote desktop	<input checked="" type="checkbox"/> (Online)
Listening port	5159
Login	B
Password	
Shell Password	root
keyboard language	French

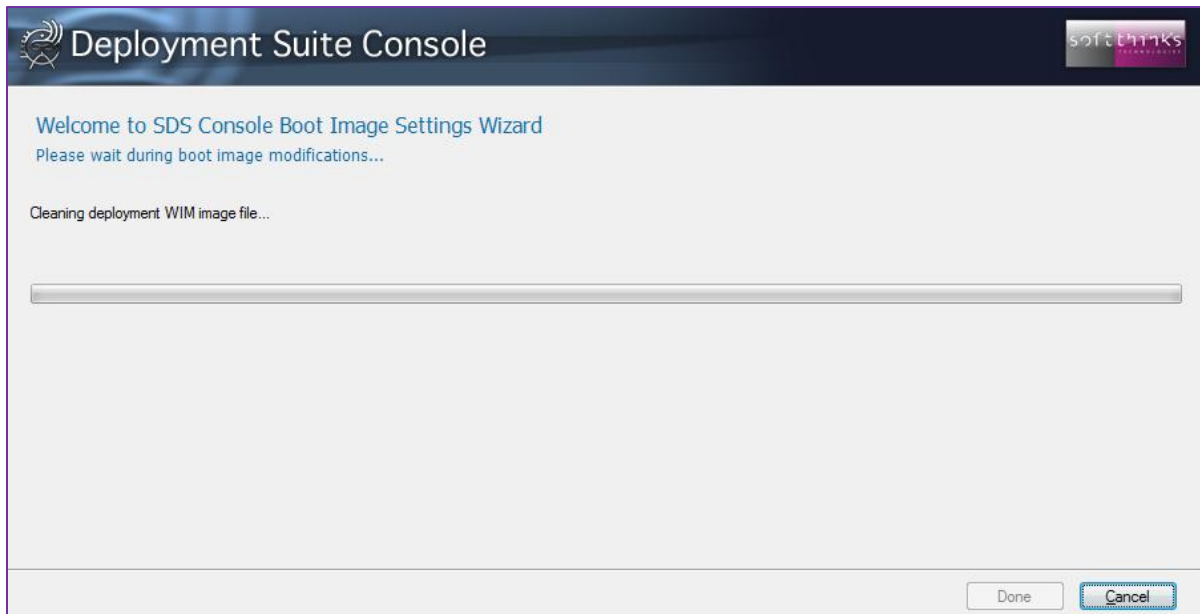
< Back Save Cancel

- **Login / Password:** Network credentials to use when mapping the “N:” drive on the deployment server
- **Dotted domain:** Fully qualified Windows Server domain name of the deployment server
- **NETBIOS domain:** Domain name of the deployment server used by systems before Windows 2000
- **Server path:** UNC path to the database on the server
- **Mapping try:** Number of times to retry if mapping fails
- **Use API:** Use the Microsoft connect API if a standard ‘net use’ failed to connect to server (leave it checked unless you encounter connection issues)
- **Remote desktop:** « Yes » to activate remote desktop feature
 - **Listening port:** Port used to listen for incoming connection
 - **Login / Password:** Credentials to open a remote session
- **Shell password:** Password required to launch the shell. Leave it empty unless you want to enter credentials.
- **Keyboard language:** Keyboard layout

Note: If you change the Administrator password on the server, don’t forget to update it here or else the devices will no longer be able to connect to the server.

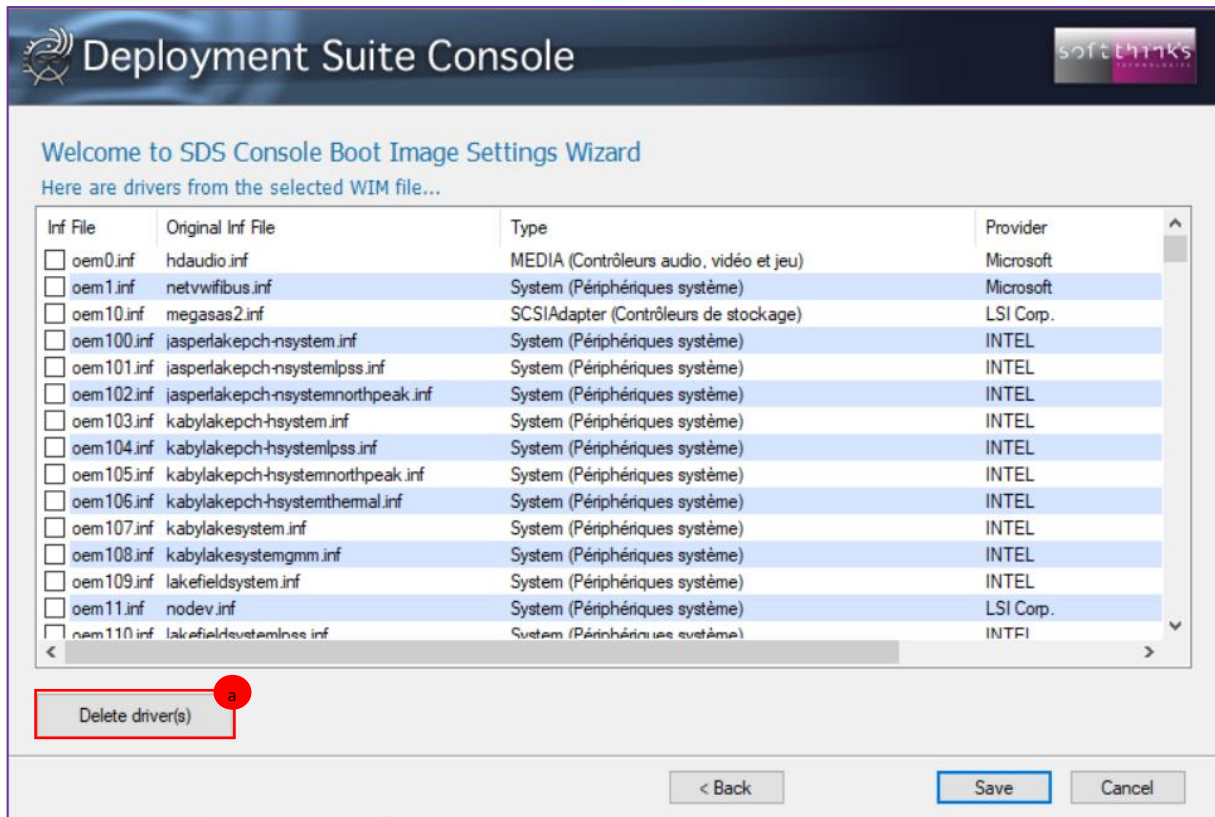
- Clean WDS deployment boot image

If you selected the “Clean WDS deployment boot image” option in step 6, we will remove all the previous versions of the modified files and so will decrease the boot image size (each time you update the boot image its size increases, because instead of replacing the old version of a modified file, it adds the new version to the image):



- Examine embedded drivers version

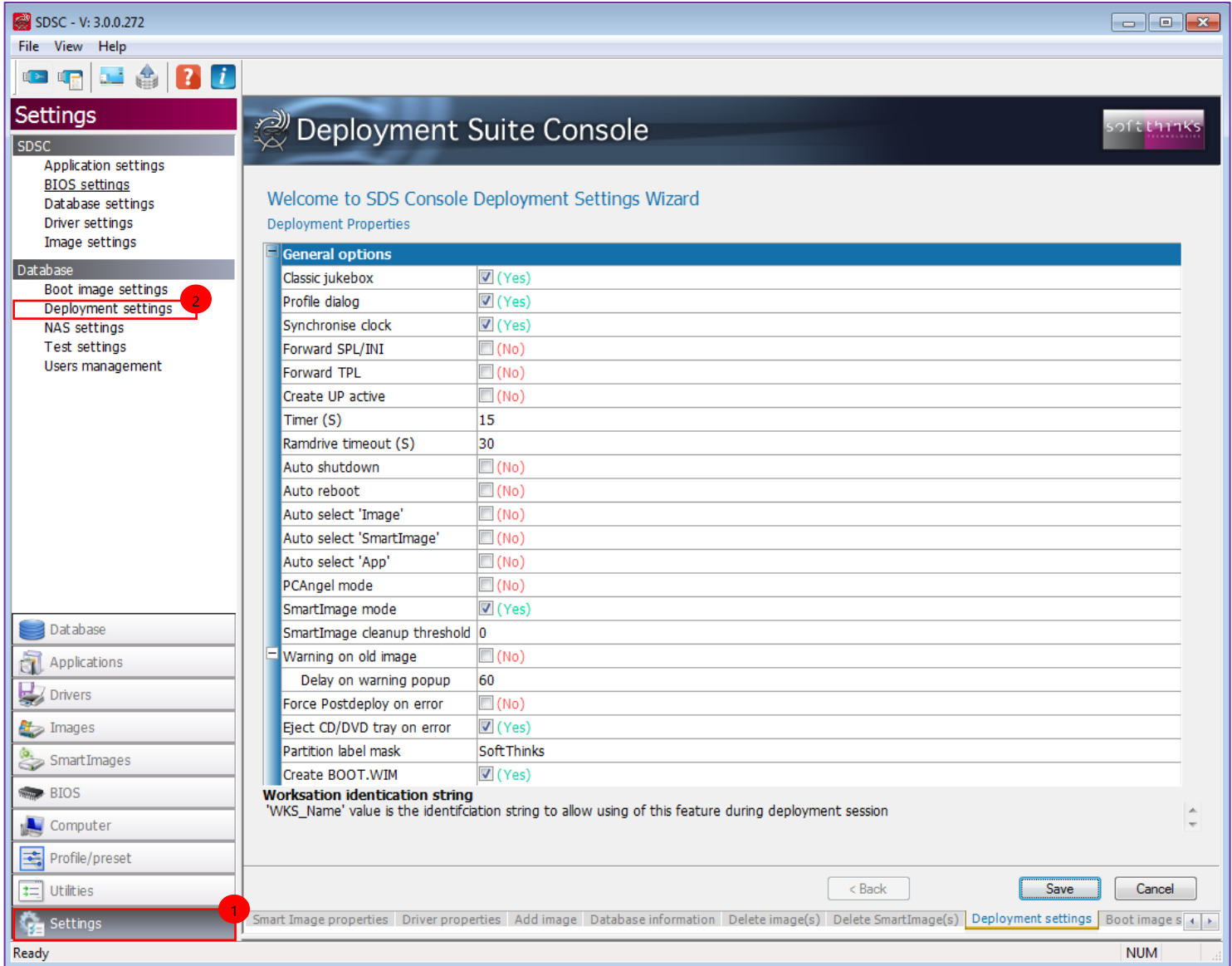
If you selected the “Examine embedded drivers version” option in step 6, we will mount the boot image previously selected (this operation can take few seconds depending on the boot image size) and display the drivers which have been added through “Installs an INF package (Recovery & WDS boot image)”:



You have the ability to delete some drivers from this boot image by selecting them with the checkbox in front of those and then clicking on “Delete driver(s)” button a.

Deployment settings

1. Click on the "Settings" tab ¹
2. Click on "Deployment Settings" ² to customize the deployments:



General options

- **Classic Jukebox:** Present a skip button on profile dialogue box if no preset is found for the jukebox mode
- **Profile Dialog:** Show the Profile Dialog box otherwise going directly to the jukebox mode
- **Synchronize Clock:** Synchronize the target device CMOS clock with the date and time from the server
- **Forward SPL/INI:** Copy SPL and deployment INI files to <UserPartition>:\Windows\Options folder
- **Forward TPL:** Forward the TPL file to the deployment server after deployment completes
- **Create UP Active:** Ensure that the user partition is set to active
- **Timer (S):** Time before deployment begins and before a reboot occurs after deployment completion
- **Ramdrive timeout:** The time to wait to retry accessing the Ramdrive
- **Auto shutdown:** Automatically shut down the device at the end of a successful deployment
- **Auto reboot:** Automatically reboot the device at the end of a successful deployment
- **Auto select 'Image':** Automatically select the image during the deployment
- **Auto select 'SmartImage':** Automatically select the SmartImage that is compliant with the image if available
- **Auto select 'App' :** Automatically selected applications during deployment
- **PCAngel mode:** Kept for compatibility. Do not modify
- **SmartImage mode:** « Yes » to create a Smart Image based on plugged disk
- **SmartImage cleanup threshold:** Delete the earlier SmartImage when creating a new one
- **Warning on old image:** Display a message when the image selected is older than « **Delay on warning popup** » days if no SmartImage has been selected
- **Force PostDeploy on error:** Force PostDeploy on error
- **Eject CD/DVD tray on error:** Eject optical device tray on error
- **Partition label mask:** User partition label mask
- **Create BOOT.WIM:** Create the boot image for the recovery solution

Recovery partition options

Recovery partition options	
Automatic mode	<input type="checkbox"/> (No)
Recovery type	Recovery from specific partition
Manual size	<input type="checkbox"/> (No)
Size (MB)	2000
Hide Boot Key	<input type="checkbox"/> (No)
Timeout (Sec)	6
Create NTFS RP	<input type="checkbox"/> (No)
RP at disk start	<input type="checkbox"/> (No)
Visible	<input type="checkbox"/> (No)
Change partition t...	<input checked="" type="checkbox"/> (Yes)
Language	Auto
Brand used	

- **Automatic mode:** Bypass recovery options at run time
- **Recovery type:** System recovery scenario:
 - "No recovery"
 - "Recovery from specific location"
 - "Recovery from user partition"
 - "No Recovery solution, use only original image disk typology"

If you select the "Recovery from specific location" option you have to fill those settings:

- **Manual Size:** "Yes" to force the Recovery Partition size to the "Size (MB)" value (else it will be estimated dynamically)
- **Hide Boot Key:** "No" to show the message inviting the user to press a key to boot into the RP during "Timeout (Sec)"
- **Create NTFS RP:** "Yes" to format the RP in NTFS filesystem
- **RP at disk start:** "Yes" to create the RP at the start of the disk
- **Visible:** "Yes" to make the RP visible (in Windows explorer for example)
- **Change partition type:** "Yes" to change the partition type
- **Language:** Recovery solution language ("Auto" to let it dynamically detected)
- **Brand used:** To customize the recovery solution interface to as specific brand (logo...)

Note: Windows 10 does not allow for a separate Recovery Partition. The two viable options for Windows 10 are "No recovery" and "No Recovery solution, use only original image disk typology".

ODM option

ODM options	
Network path	x:\
Status path	x:\
Enable load balancing	<input type="checkbox"/> (No)
Cluster path	x:\Cluster
Load balancing method	

- **Network Path:** Drive letter where the root of the deployment files is located
- **Status Path:** Path where deployment status will be saved. Depending on pass or fail status, different info will be saved here
- **Enable Load Balancing:** Allows mapping to a different server if primary server is too busy
 - **Cluster path:** Path where network cluster is located
 - **Load Balancing method:** Alternate Load balancing method

Updating master options

Updating master options	
Use computer PNP	<input checked="" type="checkbox"/> (Yes)
New format	<input checked="" type="checkbox"/> (Yes)

- **Use Computer PNP:** Use all PNP that can be detected on the PC. If no, use only the driver from selector.ini
- **New Format:** Leave this setting set to 1. Changing this will remove the benefit of the new database format

Reseal options

Reseal options	
Forward request	<input type="checkbox"/> (No)
Output passed folder	\\192.168.X.X\reminst\sdkdb\passed
Output failed folder	\\192.168.X.X\reminst\sdkdb\failed
Login	XXXXXX@deploy.com
Password	XXXXXX
Login timeout (S)	15
Forward TPL file	<input type="checkbox"/> (No)
Forward XPL file	<input type="checkbox"/> (No)
Forward SPL file	<input type="checkbox"/> (No)
Forward INI file	<input type="checkbox"/> (No)

- **Forward request:** Send reseal information to the server
 - **Output passed folder:** Storage location for machine-specific info from target system after reseal occurs in audit mode successfully
 - **Output Failed folder:** Storage location for machine specific info from target system after reseal occurs in audit mode with failure
 - **Login / Password:** Credentials to log onto server
 - **Login timeout:** Time to wait before retry to login
 - **Forward TPL file:** Include TPL file as part of info to send to server
 - **Forward XPL file:** Include XPL file as part of info to send to server
 - **Forward SPL file:** Include SPL file as part of info to send to server
 - **Forward INI file:** Include INI file as part of info to send to server

Precheck test options

Precheck test options	
Force Precheck manually	<input checked="" type="checkbox"/> (Yes)
Start Precheck even ...	<input type="checkbox"/> (No)
Sector used	45
Value passed	PASS
Value failed	FAIL
Executable	bit32.exe
Command line	-D 5 -R -X -C test_rapide.bitcfg
Valid exit code	0
Invalid exit code	0
Time Out	8
Action to process	Continue
Diagnostic path	X:\burnintest
Scripts folder	X:\

- **Force Precheck manually:** Allow to start Precheck test manually
- **Start Precheck even if a disk is absent:** Start Precheck even if is a disk is not plugged to the device
- **Sector used:** Sector on the HDD where is stored the test status
- **Value passed:** Value written to the sector when the diagnostics pass
- **Value failed:** Value written to the sector when the diagnostics fail
- **Executable:** Executable to launch for the diagnostic tests
- **Command Line:** Switches for the executable
- **Valid Exit Code:** Exit code for "PASS" condition of the diagnostics
- **Invalid Exit Code:** Exit code for "FAIL" condition of the diagnostics
- **Action to Process:** If test passes, continue deployment
- **Diagnostic path:** Location of the files used for diagnostics
- **Scripts folder:** Location of the diagnostics scripts

BurnInTest test options

BurnInTest test options	
Executable	
Command line	
Result folder	
Pass flag file	
Invalid flag file	
Result folder	

- **Executable:** BurnInTest executable to launch
- **Command Line:** BurnInTest executable command line arguments
- **Result Folder:** Location where BurnInTest results are stored
- **Pass flag file:** Flag file created for pass condition
- **Invalid flag file:** Flag file created for fail condition
- **Result Folder:** Folder where previous flags file will be present

Customer options

Customers options	
Pre_Send_result	<input type="checkbox"/> (No)
Wait for profiles	<input checked="" type="checkbox"/> (Yes)
Ask for profile	<input type="checkbox"/> (No)
Retry	3
Delay (S)	30
Create TAG file	<input type="checkbox"/> (No)
Move INI files	<input type="checkbox"/> (No)
Target folder	
Use disk sector	<input type="checkbox"/> (No)
Sector used	10
Default profile	

- **Pre_Send Result:** Send info to server during resale operation. S<serial>.log files are then duplicated in TP/TF folder for pass/fail results
- **Wait for profiles:** Wait for deployment INI files to becoming available
 - **Ask for profile:** Ask for the profile to use at run time through a popup (ex: if DMI is not set correctly)
 - **Retry:** Retry attempt before failing
 - **Delay (S):** Retry delay between each try
 - **Create TAG file:** Create serial number tag file if the profile is not present at startup to ask to a third party soft to give it available
- **Move INI files:** Move Selector.ini & Rsselect.ini to the « **Target folder** » location after deployment (this target folder must be a local path on the RIS)
- **Use disk sector:** Use a disk sector with the DMI to validate the profile to use
 - **Sector Used:** Sector id where to check for the serial or model number (9 to 62)
 - **Default profile:** Default profile to use if the signature does not match

BIOS flashing options

BIOS flashing options	
Use marker file	<input type="checkbox"/> (No)
Backup marker file	<input type="checkbox"/> (No)
MarkerFile path	
Login	
Password	

- **User Marker File:** Force the use of a marker file instead of the disk itself to log BIOS flashing. The file is located in BIOS\TEMP\BIOSxxxxx.TBIF
 - **Back up Marker File:** Move the TBIF file into a sub folder "DONE" for backup purposes when all flashing operations have processed. These files will overwrite if a collision occurs
 - **Marker file path:** Marker file path
 - **Login / Password:** Credentials to access to the Marker file path above

PC Angel

PCAngel	
Splitting size (MB)	650

DEPRECATED

Backup tool	
Activate backup tool	(No)
Executable path	
Executable arguments	

ISO Workstation	
Workstation identification string	
Destination path	
Login	
Password	
Domaine	
ISO process iteration	50

Image test options

000

✖ TO BE FILLED

000

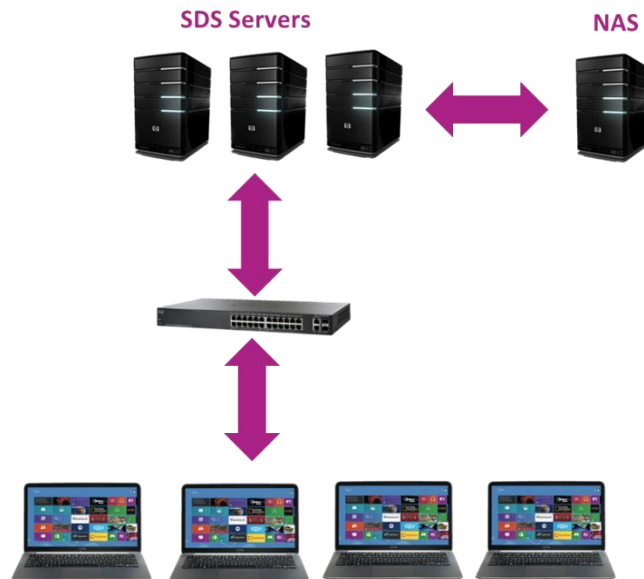
< Back

Save

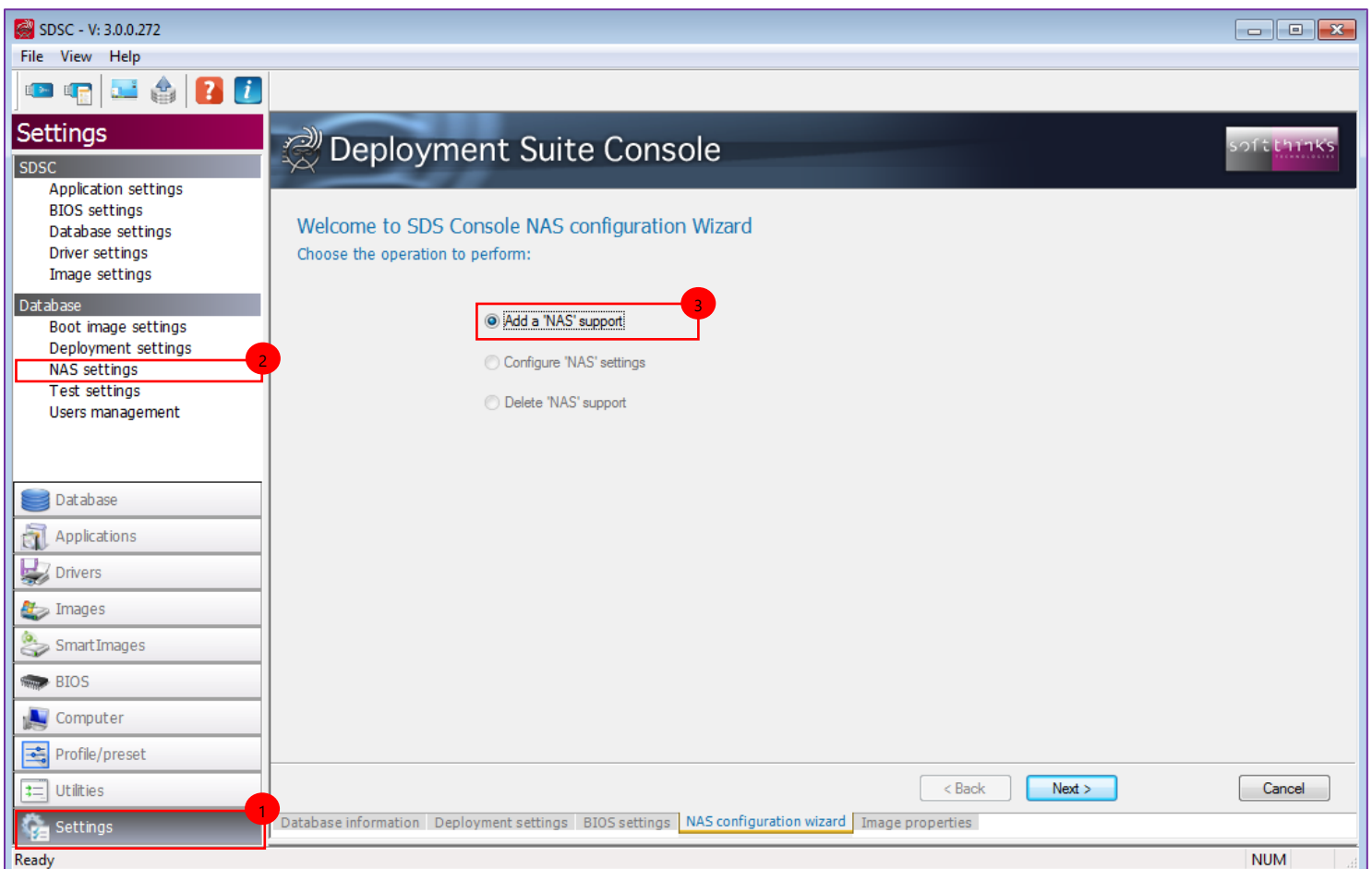
Cancel

NAS settings

Potential NAS Configuration. Setup can vary depending on your needs:



1. Click on the "Settings" tab 1
2. Click on "NAS settings" 2



Add a 'NAS' support

Since you can configure only 1 NAS, only the option "Add a 'NAS' support" ³ is available initially. After having selected this option and clicked on the "Next >" button, you will be able to fill in all of the necessary information required to get the NAS properly setup:

The screenshot shows the 'Deployment Suite Console' window with the 'NAS configuration Wizard' active. The title bar says 'Welcome to SDS Console NAS configuration Wizard' and 'Please fill all necessary values in order to get NAS properly setup.' Below this is a table for 'NAS Settings' with the following fields and values:

NAS Settings	
Login	exemple_John
Password	nopass
Dotted domain	deploy.com
Network path	\\10.0.0.10\reminst\sdkdb

At the bottom of the window are three buttons: '< Back', 'Save', and 'Cancel'.

- **Login / Password:** Credentials to connect to the NAS
- **Dotted domain:** Dotted domain name where the network share is
- **Network path:** Sharing UNC path used to deploy (please use IP address only)

Configure 'NAS' settings

Once a NAS has been setup you can choose the option "Configure 'NAS' settings" in order to review or edit its settings as in the previous screenshot:

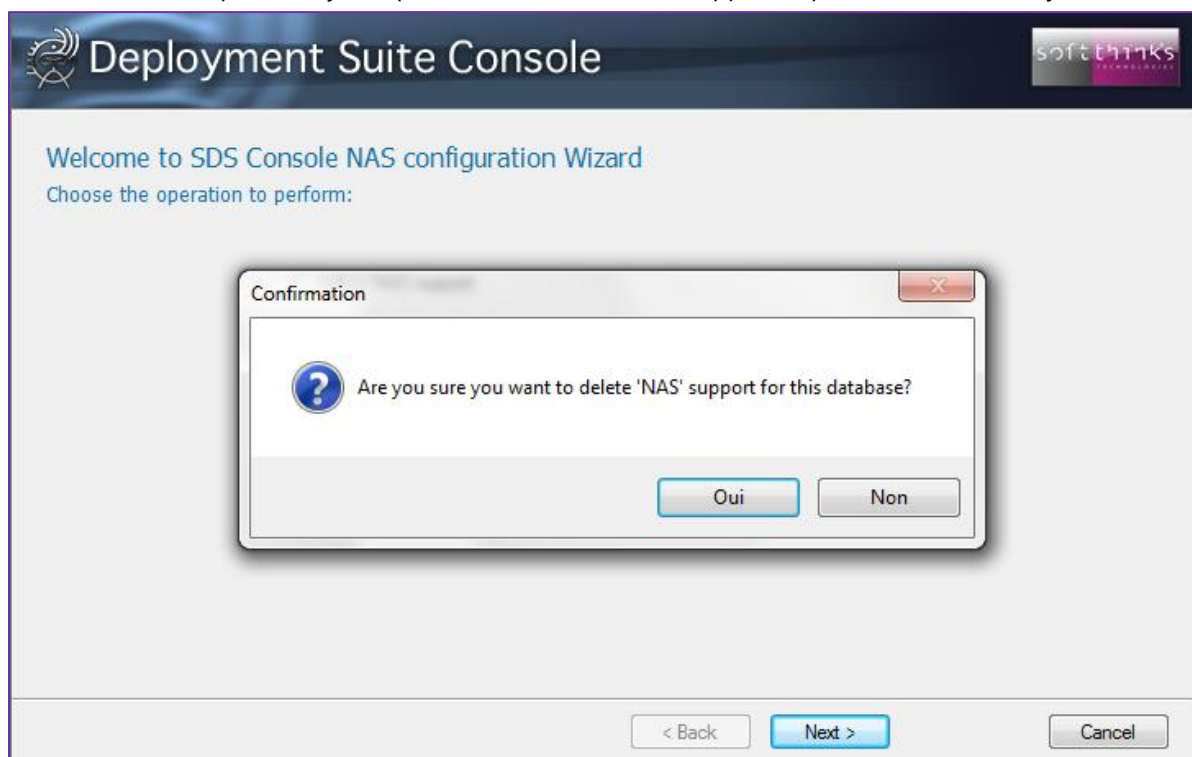
This screenshot is identical to the one above, showing the 'Deployment Suite Console' window with the 'NAS configuration Wizard' active. The title bar says 'Welcome to SDS Console NAS configuration Wizard' and 'Please fill all necessary values in order to get NAS properly setup.' Below this is a table for 'NAS Settings' with the following fields and values:

NAS Settings	
Login	exemple_John
Password	nopass
Dotted domain	deploy.com
Network path	\\10.0.0.10\reminst\sdkdb

At the bottom of the window are three buttons: '< Back', 'Save', and 'Cancel'.

Delete 'NAS' support

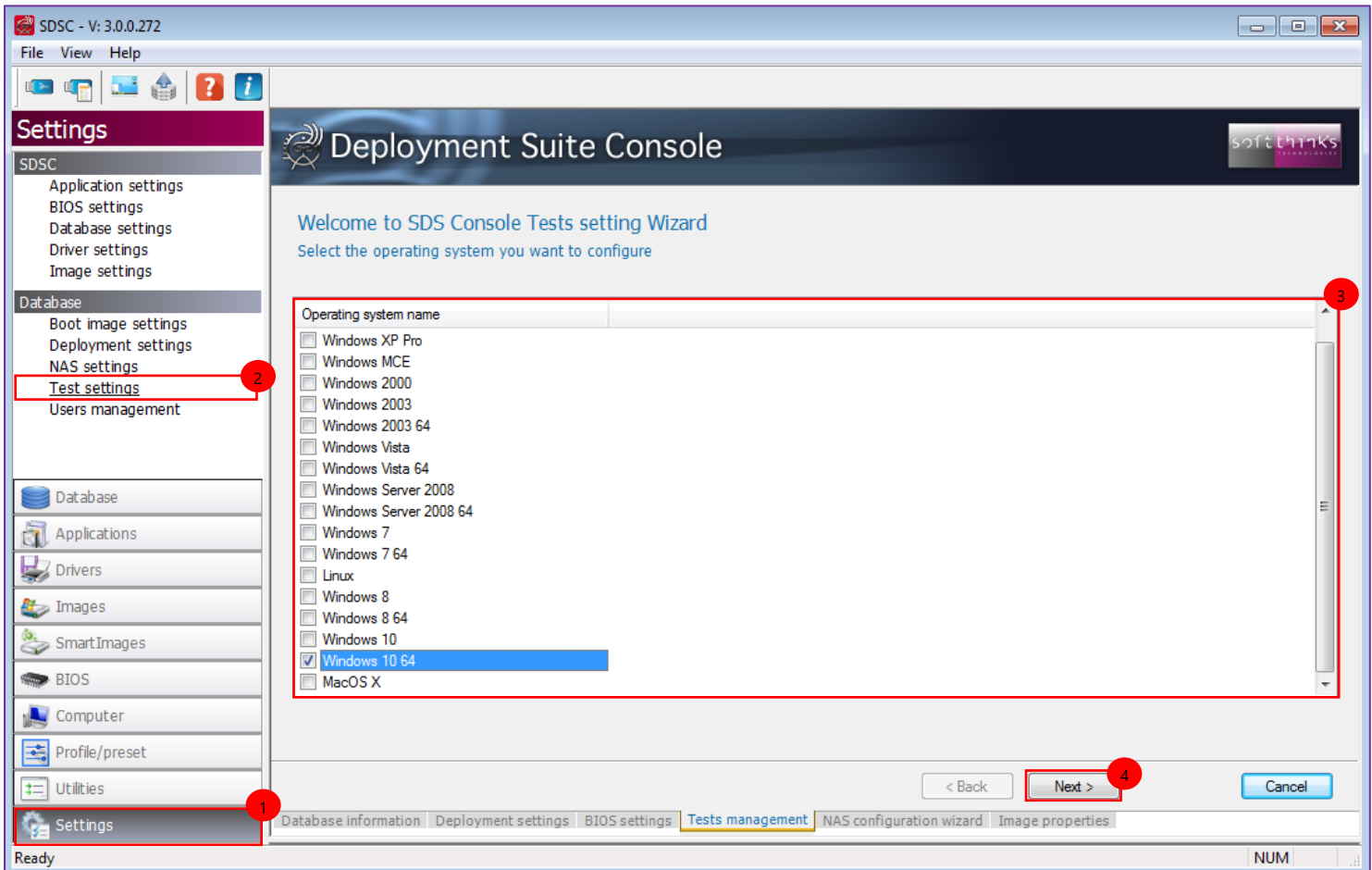
You can delete a NAS previously setup with the "Delete 'NAS' support" option which will ask you to confirm:



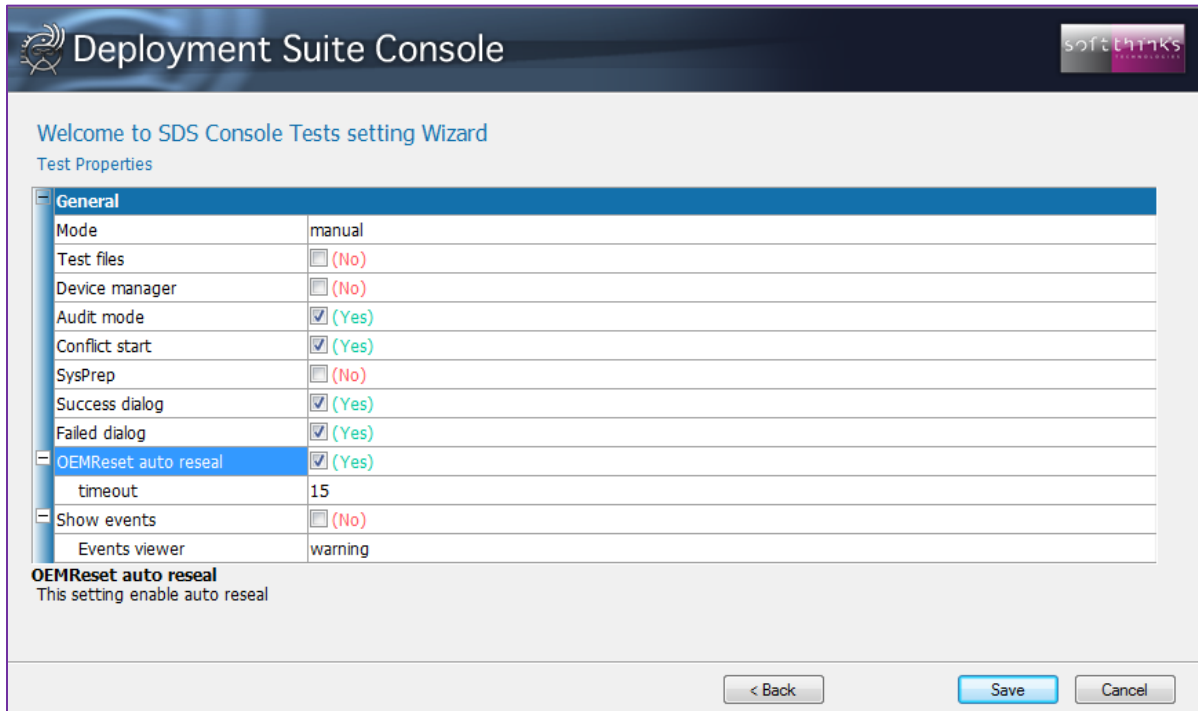
Test settings

The SDS Console Tests settings wizard allows you to customize the tests run during the Quality Check depending on the operating system.

1. Click on the "Setting" tab ¹
2. Click on "Test settings" ²
3. Select the operating system for which you want to configure the tests ³
4. Click on the "Next >" button ⁴



General



Deployment Suite Console

Welcome to SDS Console Tests setting Wizard

Test Properties

General	
Mode	manual
Test files	<input type="checkbox"/> (No)
Device manager	<input type="checkbox"/> (No)
Audit mode	<input checked="" type="checkbox"/> (Yes)
Conflict start	<input checked="" type="checkbox"/> (Yes)
SysPrep	<input type="checkbox"/> (No)
Success dialog	<input checked="" type="checkbox"/> (Yes)
Failed dialog	<input checked="" type="checkbox"/> (Yes)
OEMReset auto reseal	<input checked="" type="checkbox"/> (Yes)
timeout	15
Show events	<input type="checkbox"/> (No)
Events viewer	warning

OEMReset auto reseal
This setting enable auto reseal

< Back Save Cancel

- **Mode:** "manual" to configure the tests at run time, or "auto" to run all tests automatically
- **Test files:** "Yes" to check the drivers' signature ("No" by default)
- **Device manager:** "Yes" to open the device manager if an error is detected ("No" by default)
- **Audit mode:** "Yes" (by default) to start the tests in audit mode
- **Conflict start:** "Yes" (by default) to start the tests if conflicts are detected in Windows Test Manager
- **Sysprep:** "Yes" to show Microsoft Sysprep button (No longer used. Do not check)
- **Success / Failed dialog:** Show a report dialog if test succeeded / failed
- **OEMReset auto reseal:** Automatically reseal the device at the end of the tests after "**timeout**" (Deprecated)
- **Show events:** Open the event viewer with the filter specified by the "**Events viewer**" value ("information" / "warning" / "error")

Multimedia

Multimedia	
WAV file	<input checked="" type="checkbox"/> (Yes)
MIDI file	<input checked="" type="checkbox"/> (Yes)
MP3 file	<input checked="" type="checkbox"/> (Yes)
Microphone	<input checked="" type="checkbox"/> (Yes)
Headphone	<input type="checkbox"/> (No)
WebCam	<input checked="" type="checkbox"/> (Yes)
Volume Level	100
Microphone Level	100
Restore Level	<input checked="" type="checkbox"/> (Yes)
Recording Time	5

- **WAV files:** Test WAV file
- **MIDI files:** Test MIDI file
- **MP3 files:** Test MP3 file
- **Microphone:** Test the microphone
- **Webcam:** Test the webcam
- **Headphone:** Test the headphone
- **Volume level:** Level in percentage of the playback volume. We suggest to set it to 100(%) in order to ensure that the user will hear the sound played
- **Microphone level:** Level in percentage of the recording volume. We suggest to set it to 100(%) in order to ensure that the user will hear the sound recorded
- **Restore levels:** Restore the volume and microphone volume levels to their original values once the test complete
- **Recording time:** Duration in second

Network

• **Wired**

Network	
Wired	
Test LAN	<input type="checkbox"/> (No)
Auto DHCP	<input type="checkbox"/> (No)
Auto DNS	<input type="checkbox"/> (No)
IP	
Mask	
Gateway	
DNS 1	
DNS 2	

- **Test LAN:** "Yes" to test the wired connection
- **Auto DHCP:** "Yes" if using DHCP server
- **Auto DNS:** "Yes" if using DNS server
- **IP:** IP address to set if you don't use DHCP
- **Mask:** Subnetwork mask to set if you don't use DHCP
- **Gateway:** Gateway to set if you don't use DHCP
- **DNS 1:** Primary DNS server to set if you don't use DHCP
- **DNS 2:** Secondary DNS server to set if you don't use DHCP

• **Wi-Fi**

Wi-Fi	
Test WLAN	<input checked="" type="checkbox"/> (Yes)
SSID	
Authentication	wpa2
Encryption	aes
key	

- **Test WLAN:** "Yes" to test the Wi-Fi connection
- **SSID:** Wi-Fi SSID
- **Authentication:** "Open", "Shared", "WPA", "WPAPSK", "WPA2", "WPA2PSK", "WPA3", "WPA3Ent", "WPA3Ent192", "WPA3SAE", "OWE"
- **Encryption:** "None", "WEP", "TKIP", "AES", "GCMP256"
- **Key:** Encryption key

Network log


Network log	
Send Log	<input type="checkbox"/> (No)
Volume Letter	
Domain	
Login	
Password	
Network Path	

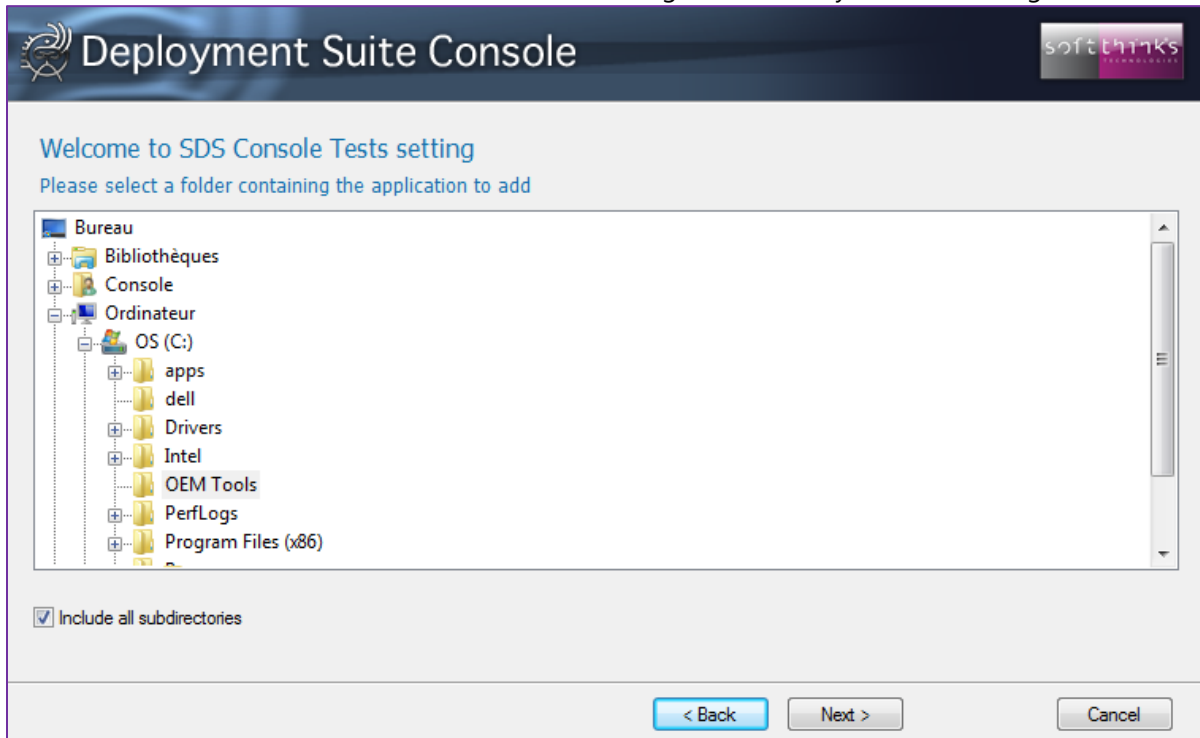
- **Send log:** "Yes" to send the logs to the SDS server
- **Volume letter:** Letter to which is mapped the SDS server share folder where logs have to be sent
- **Domain:** SDS Server domain name (Ex: « deploy.com »)
- **Login / Password:** Credentials to access the shared folder
- **Network path:** UNC path where logs have to be sent (Ex: [\\192.16.0.17\remisnt\SDKDB\Logs](#))

OEM

You can add your own tests here:

OEM	
OEM Tests	

1. Click on the  button and select the folder containing the test tool you want to integrate:



2. Fill the information required to launch your test tool and manage its result, and click on the « Save Test » button:

OEM test settings	
Application to start	OEM Test Tool 1.exe
Command line	
Remove application	<input type="checkbox"/> (No)
Show application	<input type="checkbox"/> (No)
Success code	0
Failed code	0
Stop if failed	<input type="checkbox"/> (No)
Log file	

OEM test settings
This part group test settings from 'WindowsTestmanager.xml' file

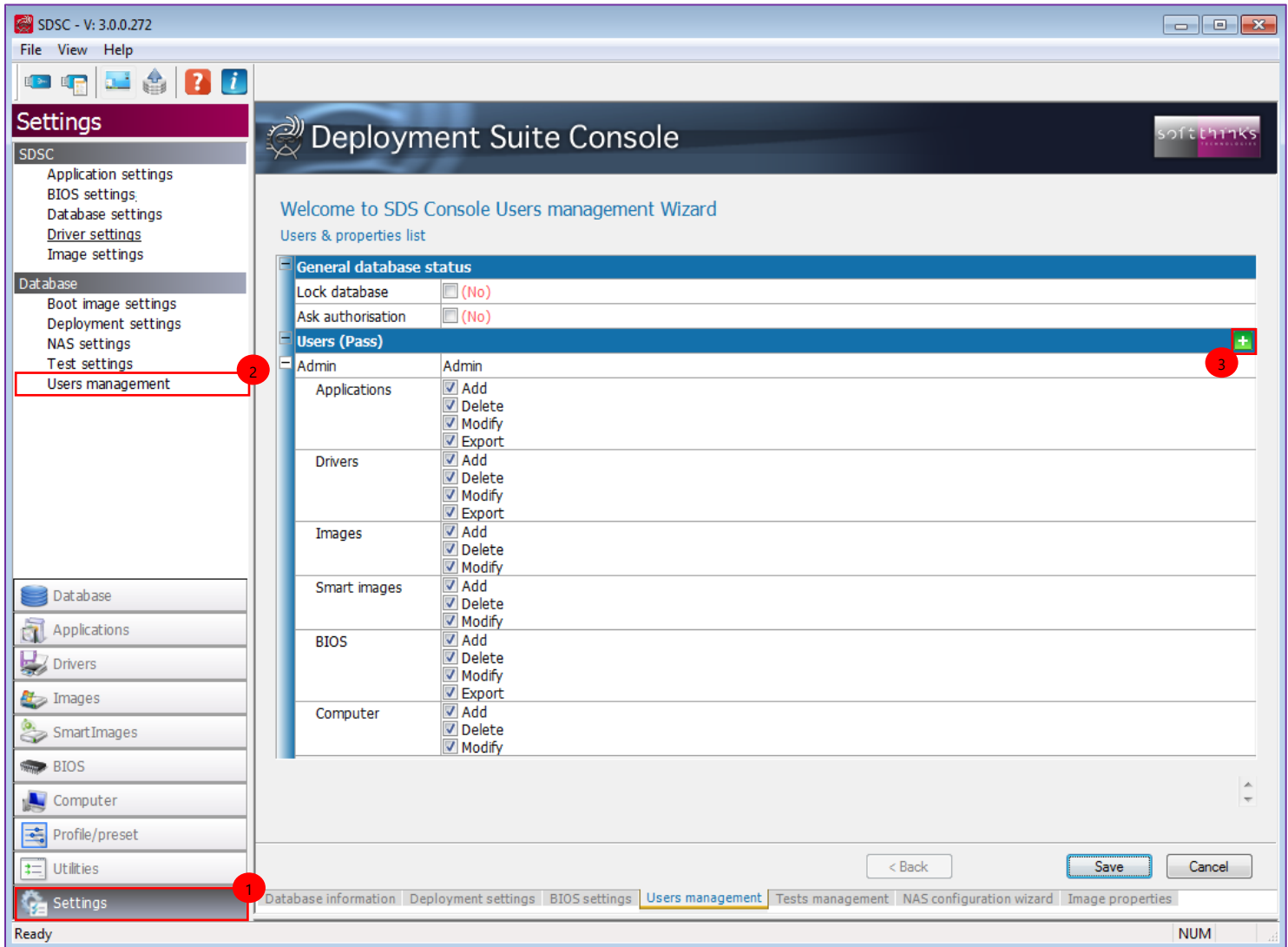
< Back Save Test Cancel

- **Application to start:** Executable to launch (.bat, .cmd or .exe)
- **Command line:** Executable command line arguments
- **Remove application:** "Yes" to remove the test tool after its execution
- **Show application:** "Yes" to show the test tool UI
- **Success code:** Value returned by the test tool in case of success
- **Failed code:** Value returned by the test tool in case of failure
- **Stop if failed:** "Yes" to stop the process if the test tool returned a failure
- **Log file:** Path where the test tool log is generated (will be sent with other logs if the "send log" option is checked)

Users management

This wizard allows you to restrict access to a database.

1. Click on the "Settings" tab 1
2. Click on "User management" 2



General database status

- **Lock database:** Restrict the access to the database to the administrator only
- **Ask authorization:** Restrict the access to the database to selected users

Users (Pass)

You can add a user by pressing the + button 3 and then define the user's rights for Add, Delete, Modify and Export database components for each component category (Images, Smart Images, Applications, Drivers, BIOS).

Consulting the activities from all sites and generating reports through the Dashboard

The SDS Dashboard centralizes the statistics from all your sites, view the activity in real-time, and allows you to generate reports.

Please refer to dedicated User Guide for more information.

Troubleshoot guide

Symptom	Potential root cause	Solution
Network error during the deployment to a device	Network driver missing in the boot image	<ol style="list-style-type: none">1. Ensure that the driver for the network card you are using is in SDS Database. If not, please add it (See Adding a driver ("Add driver" operation)).2. Then, please inject it in your boot image (See Injecting a driver ("Inject Driver(s)" operation))
Error connecting to WDS server share while booting on a device	Server credentials might have changed	<ol style="list-style-type: none">1. Review and update if needed the server credentials as described in Configure the Deployment launcher
Nomad Disk not recognized		<ol style="list-style-type: none">1. Open the SDS Console2. Click on the « Utilities » tab3. Click on « USB stick report »4. Scan the disks

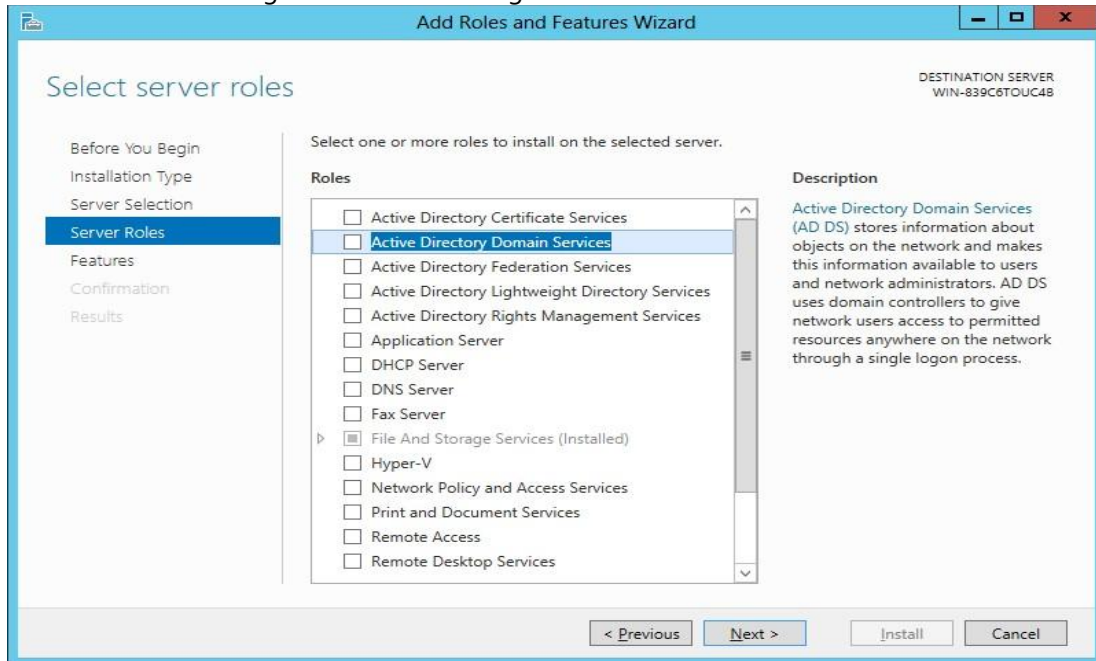
Appendix

How to configure Windows Server

The screenshots below might change depending on the Windows Server version used.

Active Directory domain services

1. Open the Server Manager Dashboard, install « AD DS Services » or « Active Directory domain services » by clicking on « Add Roles and Features » or through the menu « Manage » and then « Add Roles »:

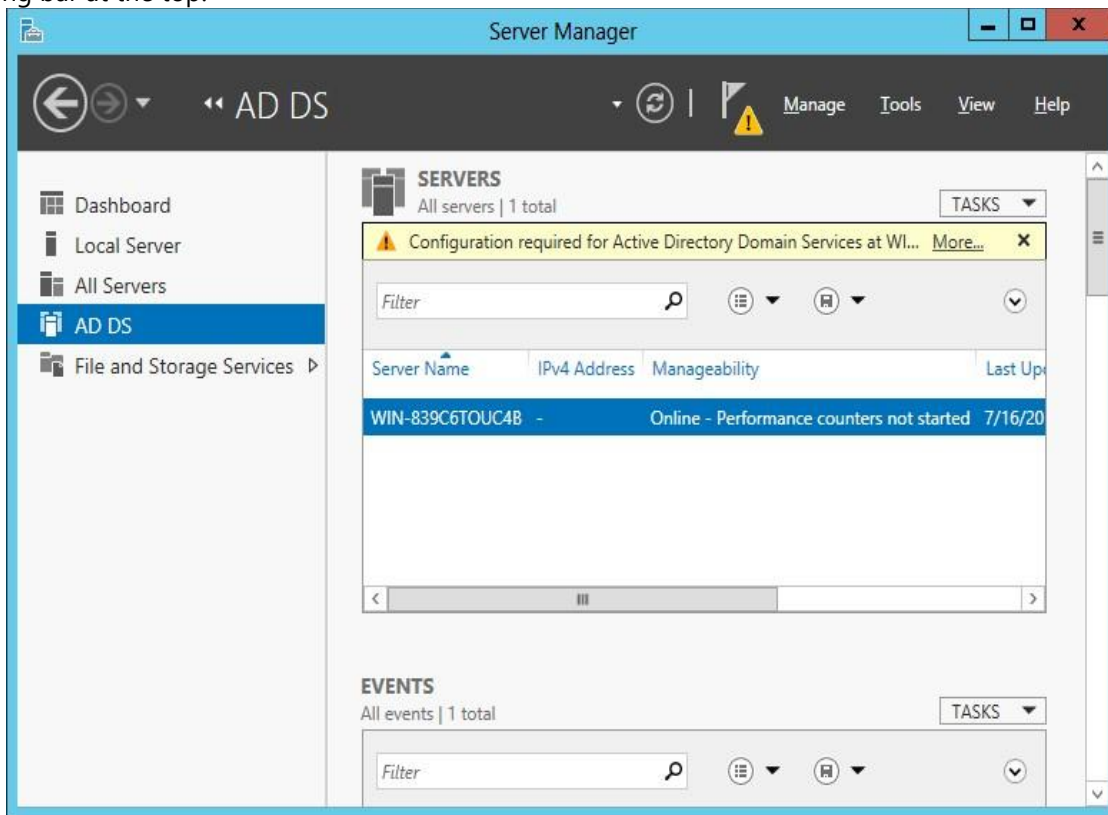


2. Click on Next until reaching the Confirmation screen and put a Check in the box which says "Restart the Destination Server Automatically if required.":

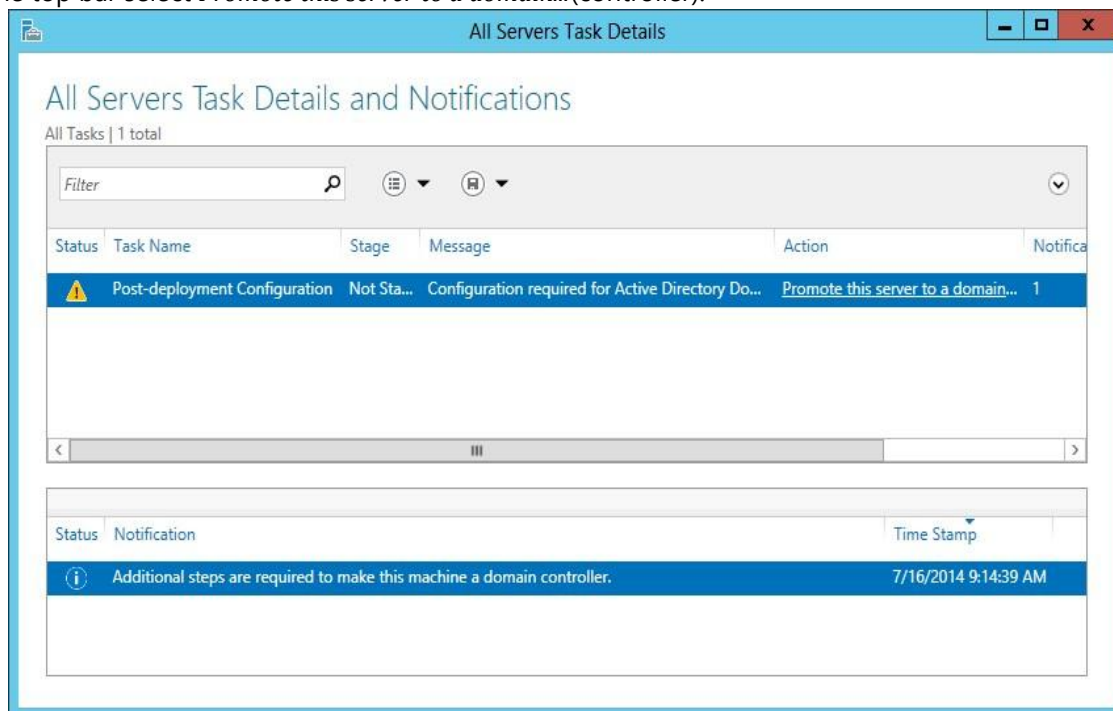


3. Select Yes on the confirmation box, then click Install on the main screen. Click close when it has completed installing.

4. In Roles and Server Groups on the Server Manager Dashboard Click on the AD/DS box and Click *More* on the yellow warning bar at the top:



5. On the top bar select *Promote this server to a domain...(controller)*:



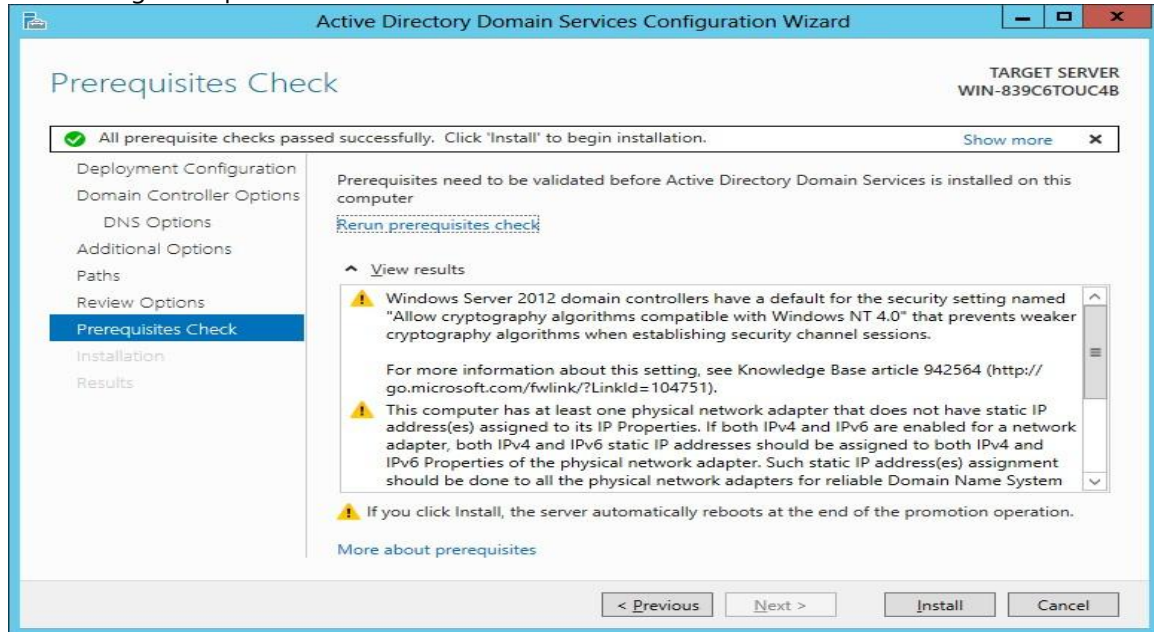
6. In Deployment Configuration, select “Add a new forest” and put SDS.com in the Root domain name box:

The screenshot shows the 'Active Directory Domain Services Configuration Wizard' window. The title bar includes standard Windows window controls. The main window has a blue header with the title 'Active Directory Domain Services Configuration Wizard'. On the left is a navigation pane with the following items: 'Deployment Configuration' (highlighted in blue), 'Domain Controller Options', 'Additional Options', 'Paths', 'Review Options', 'Prerequisites Check', 'Installation', and 'Results'. The main content area is titled 'Deployment Configuration'. In the top right corner, it says 'TARGET SERVER WIN-839C6TOUC4B'. Below the title, there are three radio buttons under the heading 'Select the deployment operation': 'Add a domain controller to an existing domain', 'Add a new domain to an existing forest', and 'Add a new forest' (which is selected). Below this, under the heading 'Specify the domain information for this operation', there is a text box labeled 'Root domain name:' containing the text 'SDS.com'. At the bottom of the window, there are four buttons: '< Previous', 'Next >', 'Install', and 'Cancel'. A link 'More about deployment configurations' is located at the bottom left of the main content area.

7. In Domain Controller Options, type in the password Softthinks1 and then confirm it:

The screenshot shows the 'Active Directory Domain Services Configuration Wizard' window, now on the 'Domain Controller Options' step. The navigation pane on the left has 'Domain Controller Options' highlighted in blue. The main content area is titled 'Domain Controller Options'. In the top right corner, it says 'TARGET SERVER WIN-839C6TOUC4B'. Below the title, there are two dropdown menus under the heading 'Select functional level of the new forest and root domain': 'Forest functional level:' and 'Domain functional level:', both set to 'Windows Server 2012'. Below this, under the heading 'Specify domain controller capabilities', there are three checkboxes: 'Domain Name System (DNS) server' (checked), 'Global Catalog (GC)' (checked), and 'Read only domain controller (RODC)' (unchecked). Below this, under the heading 'Type the Directory Services Restore Mode (DSRM) password', there are two password fields: 'Password:' and 'Confirm password:', both containing masked characters (dots). At the bottom of the window, there are four buttons: '< Previous', 'Next >', 'Install', and 'Cancel'. A link 'More about domain controller options' is located at the bottom left of the main content area.

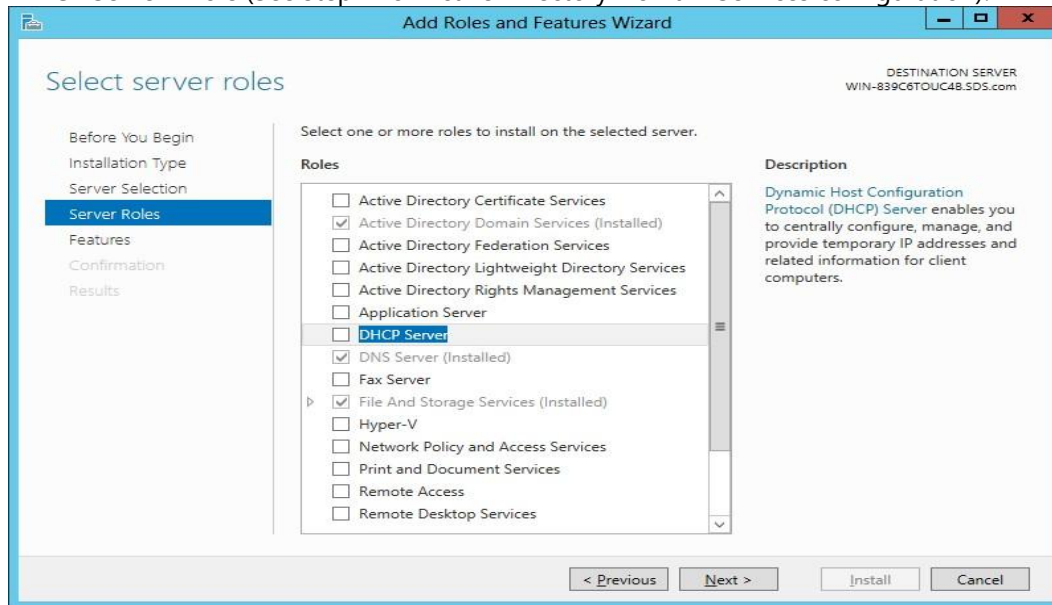
8. Click Next until reaching Prerequisites Check screen:



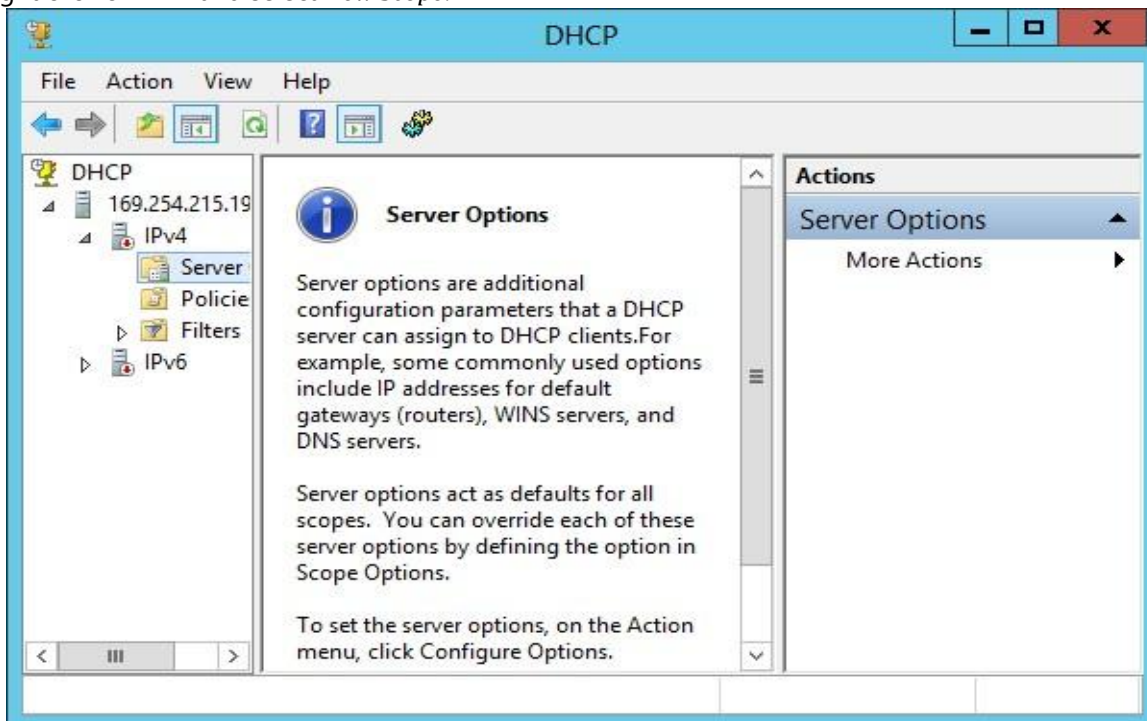
9. If all Prerequisite checks passed successfully then click Install. Note: You must have the NIC plugged into a switch or the TCP/IP check will fail.

DHCP Server


1. Ensure that the Ethernet connection is working
2. Add the « DHCP Server » role (See step 1 for Active Directory Domain Services configuration):



3. Follow the configuration wizard (let default values) and click on Install in the last screen after having checked the option "Restart the Destination Server Automatically if required."
4. From the Server Manager Dashboard Select Tools then *DHCP*, expand out the arrows for 169.254.xxx.xxx and then for IPv4. Right click on IPv4 and select *New Scope*:

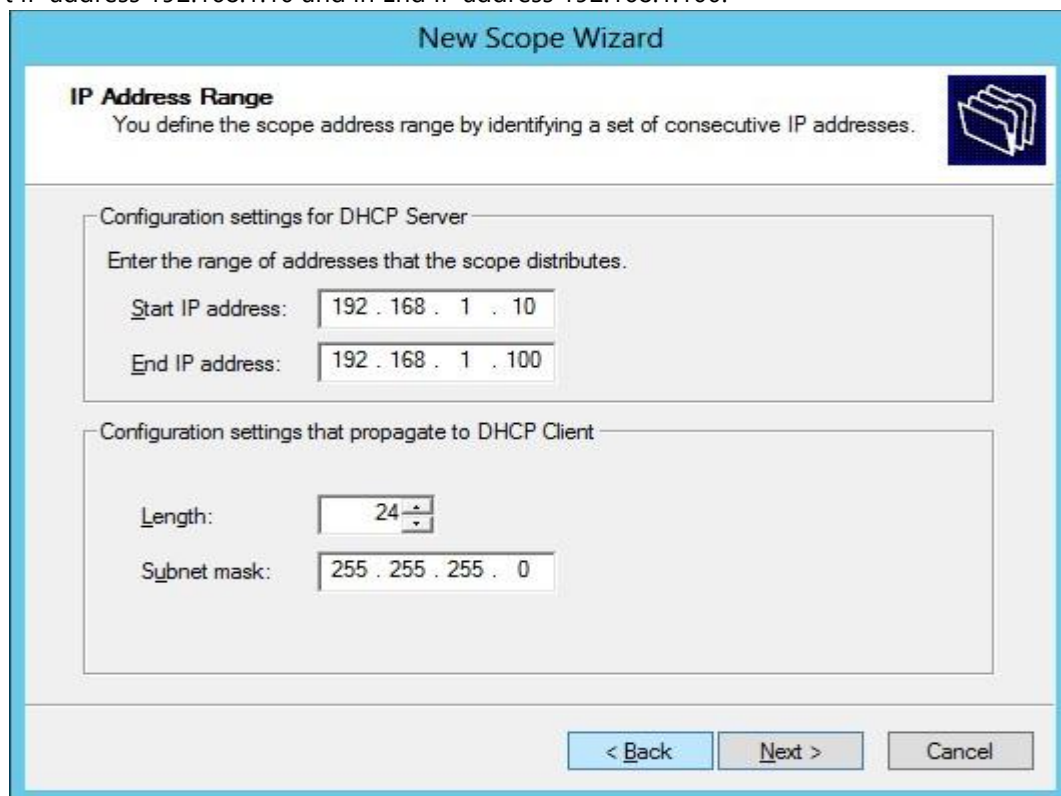


5. Type SDS in as the Name and click Next.



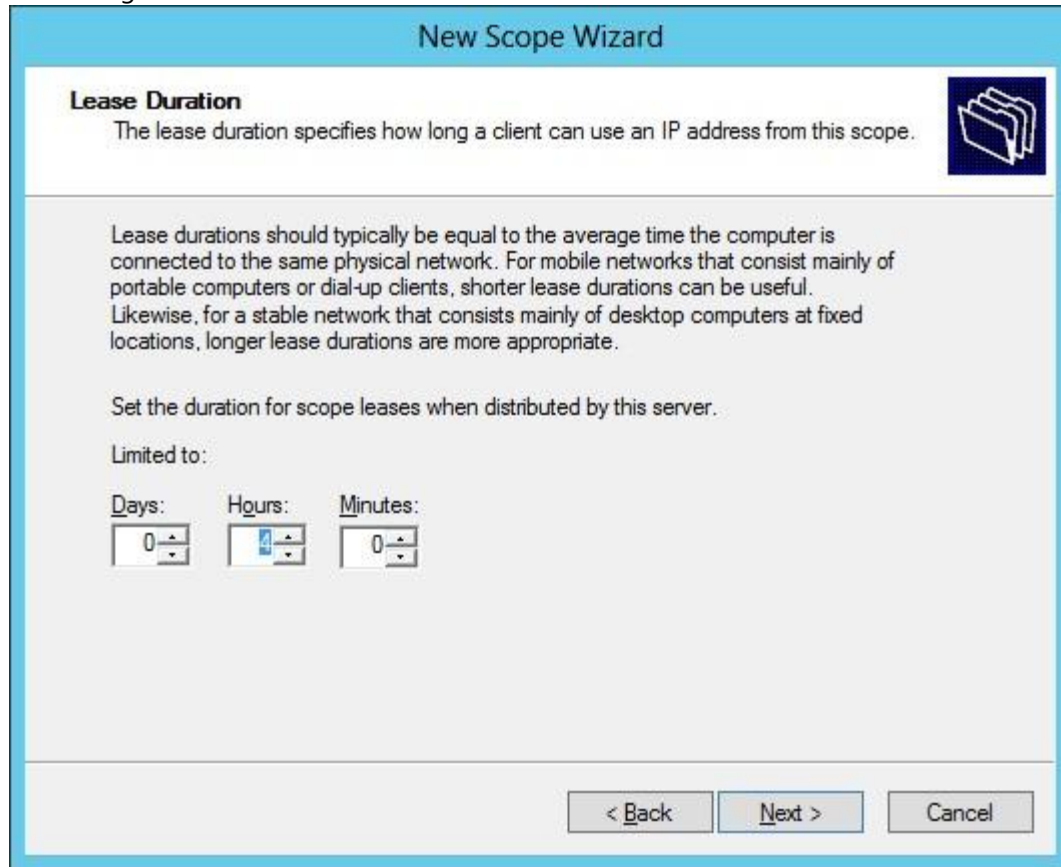
The screenshot shows the 'New Scope Wizard' window with the 'Scope Name' tab selected. The window has a blue title bar and a light blue header. Below the header, there is a section titled 'Scope Name' with a folder icon. The text says: 'You have to provide an identifying scope name. You also have the option of providing a description.' Below this, there is a prompt: 'Type a name and description for this scope. This information helps you quickly identify how the scope is to be used on your network.' There are two input fields: 'Name:' with the value 'SDS' and 'Description:' which is empty. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

6. Type in Start IP address 192.168.1.10 and in End IP address 192.168.1.100:



The screenshot shows the 'New Scope Wizard' window with the 'IP Address Range' tab selected. The window has a blue title bar and a light blue header. Below the header, there is a section titled 'IP Address Range' with a folder icon. The text says: 'You define the scope address range by identifying a set of consecutive IP addresses.' Below this, there is a section titled 'Configuration settings for DHCP Server' with a prompt: 'Enter the range of addresses that the scope distributes.' There are two input fields: 'Start IP address:' with the value '192 . 168 . 1 . 10' and 'End IP address:' with the value '192 . 168 . 1 . 100'. Below this, there is a section titled 'Configuration settings that propagate to DHCP Client'. There are two input fields: 'Length:' with the value '24' and 'Subnet mask:' with the value '255 . 255 . 255 . 0'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

- Click Next and Next Again and then set the Lease Duration to 4 hours



The screenshot shows the 'New Scope Wizard' window, specifically the 'Lease Duration' step. The window has a blue title bar and a light blue border. The title 'New Scope Wizard' is centered at the top. Below the title bar, the section 'Lease Duration' is highlighted in a light blue box. To the right of this section is a small icon of a folder with a document. The text below the section explains that the lease duration specifies how long a client can use an IP address from this scope. It provides guidance on setting the duration based on the network type: mobile networks (shorter durations) vs. stable networks (longer durations). Below this text, it says 'Set the duration for scope leases when distributed by this server.' and 'Limited to:'. There are three spin boxes for 'Days', 'Hours', and 'Minutes'. The 'Hours' spin box is currently set to 4. At the bottom of the window are three buttons: '< Back', 'Next >', and 'Cancel'.

New Scope Wizard

Lease Duration

The lease duration specifies how long a client can use an IP address from this scope.

Lease durations should typically be equal to the average time the computer is connected to the same physical network. For mobile networks that consist mainly of portable computers or dial-up clients, shorter lease durations can be useful. Likewise, for a stable network that consists mainly of desktop computers at fixed locations, longer lease durations are more appropriate.

Set the duration for scope leases when distributed by this server.

Limited to:

Days: Hours: Minutes:

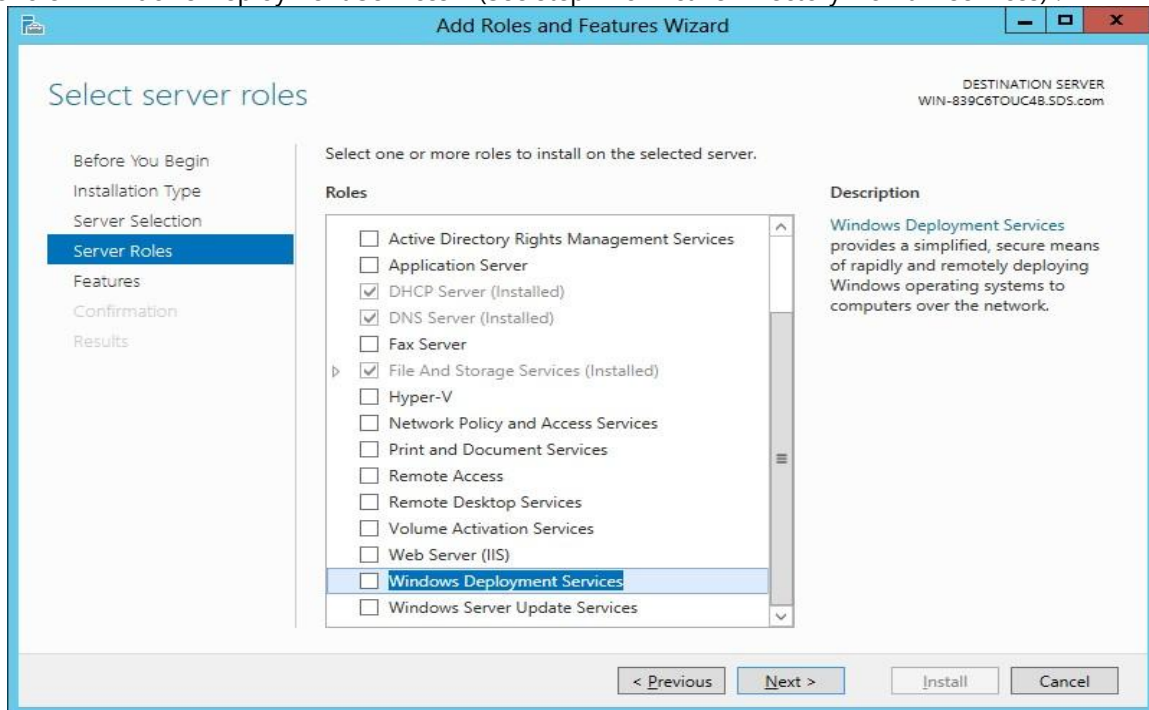
0 4 0

< Back Next > Cancel

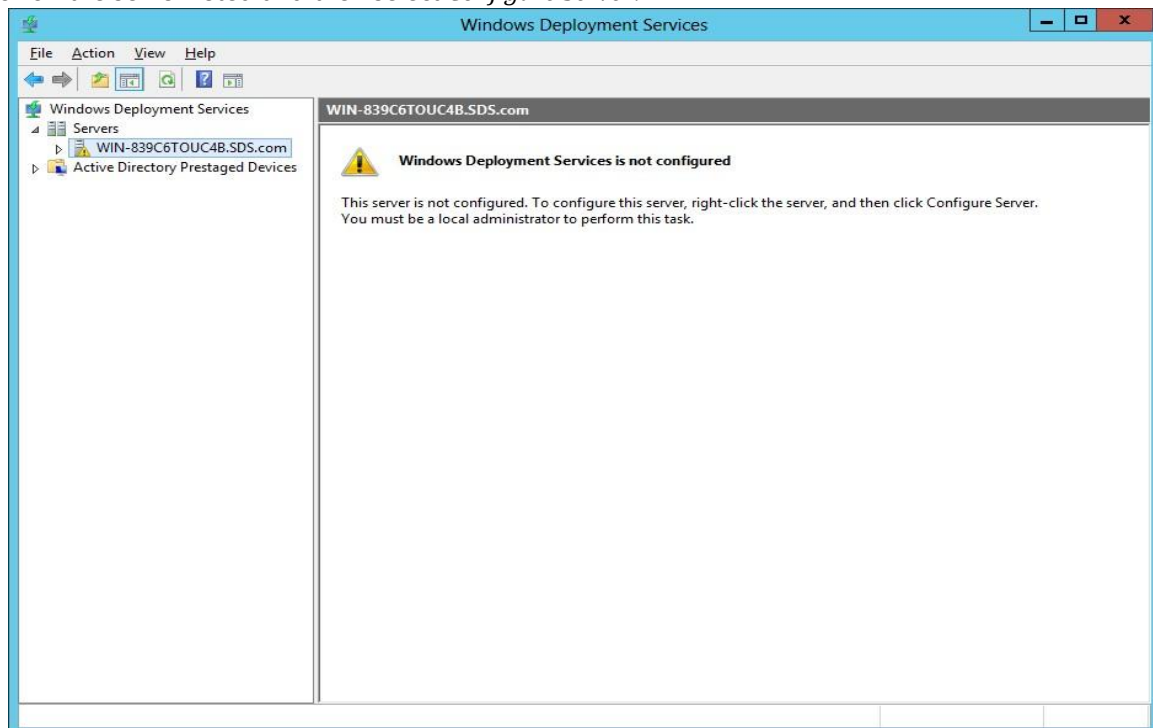
- Click Next, Next, Next, Next, Next, Next, and then Finish. Close out of the DHCP Window.

Windows Deployment Services

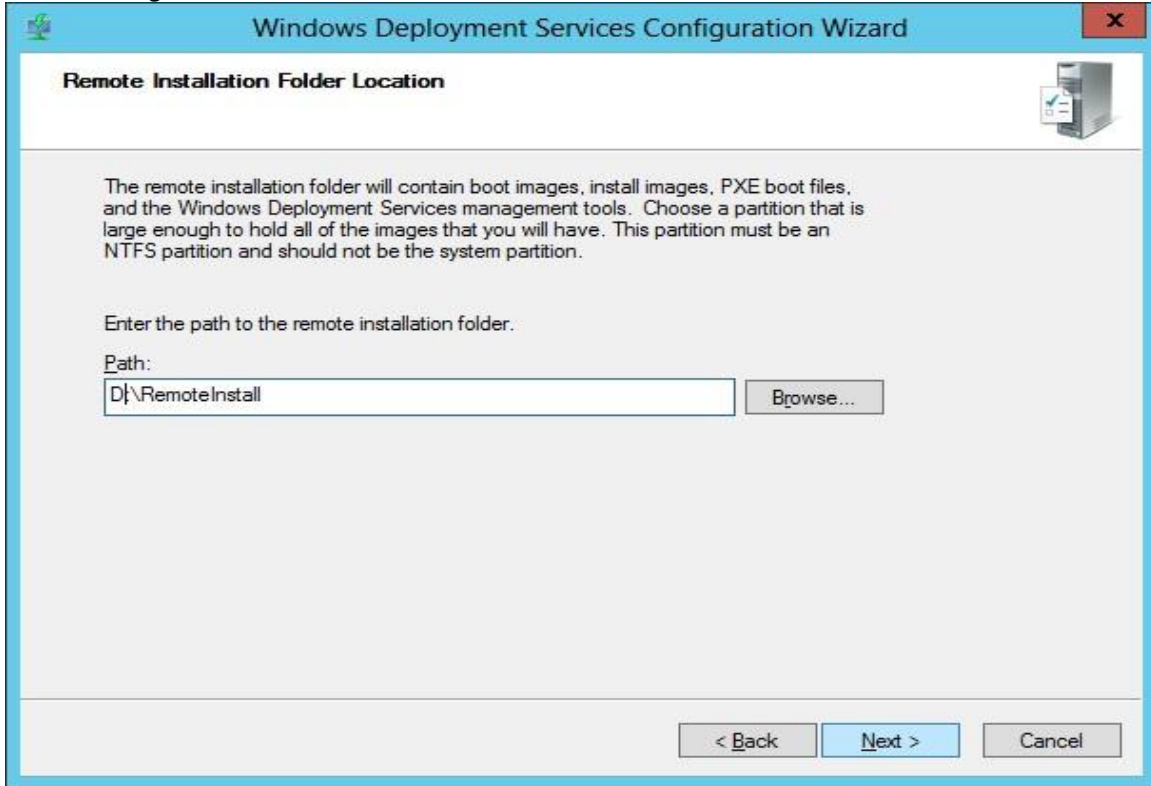
1. Add the role « Windows Deployment Services » (See step 1 for Active Directory Domain services) :



2. Follow the configuration wizard (let default values) and click on Install in the last screen after having checked the option "Restart the Destination Server Automatically if required."
3. From the Server Manager Dashboard Select Tools then *Windows Deployment Services*. Expand the arrow by Servers, right click on the server listed and then select *Configure Server*:



4. In the Path box change the C:\RemoteInstall to D:\Remote Install:



Windows Deployment Services Configuration Wizard

Remote Installation Folder Location

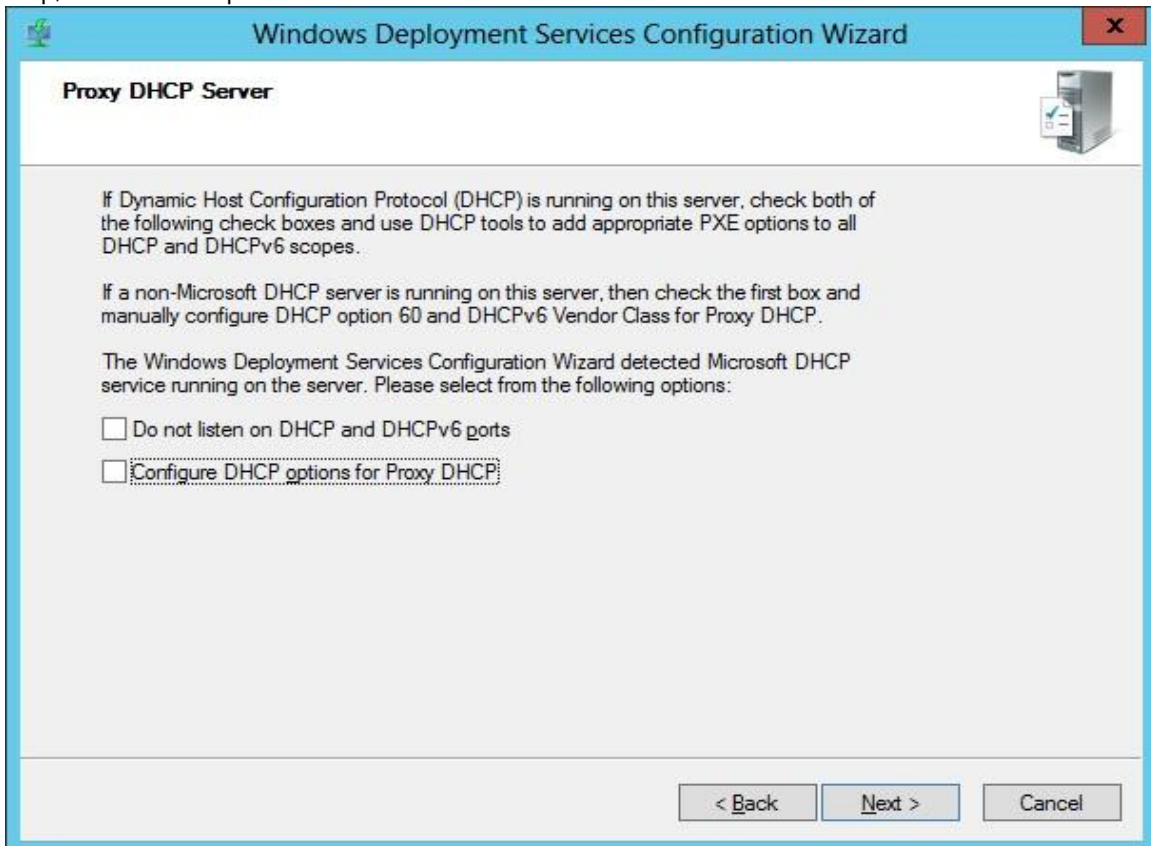
The remote installation folder will contain boot images, install images, PXE boot files, and the Windows Deployment Services management tools. Choose a partition that is large enough to hold all of the images that you will have. This partition must be an NTFS partition and should not be the system partition.

Enter the path to the remote installation folder:

Path:

< Back Cancel

5. On next step, check the 2 options:



Windows Deployment Services Configuration Wizard

Proxy DHCP Server

If Dynamic Host Configuration Protocol (DHCP) is running on this server, check both of the following check boxes and use DHCP tools to add appropriate PXE options to all DHCP and DHCPv6 scopes.

If a non-Microsoft DHCP server is running on this server, then check the first box and manually configure DHCP option 60 and DHCPv6 Vendor Class for Proxy DHCP.

The Windows Deployment Services Configuration Wizard detected Microsoft DHCP service running on the server. Please select from the following options:

☐ Do not listen on DHCP and DHCPv6 ports

☒ Configure DHCP options for Proxy DHCP

< Back Cancel

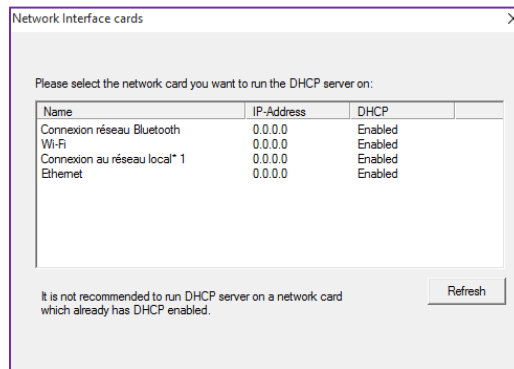
6. Select Respond to all client computers (known and unknown):



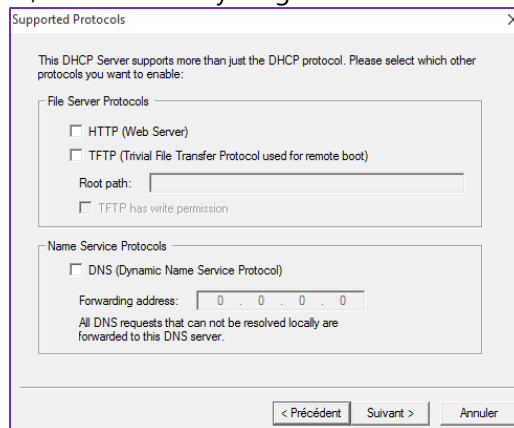
7. Close out of the Windows Deployment Services Window when it completes.
8. Ensure that the remote installation folder set in step 4 is shared as « reminst » with Full Control to « Everyone »
9. Verify that PXE is working with a test PC. If so, execute SDS installer (launch setup.exe in installer folder).

How to configure DHCP on a non-server edition of Windows

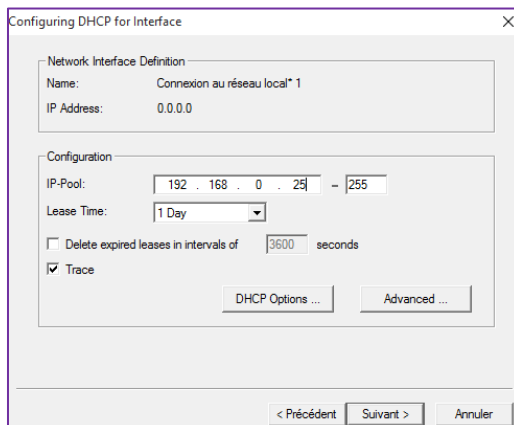
1. Download DHCP Server from <http://www.dhcpserver.de/cms/>
2. Copy the folder dhcpsrv2.5.2 to remoteinstall folder
3. Launch dhcpcwiz.exe
4. Click on "Next >" button
5. Select your LAN card, and click on "Next >" button:



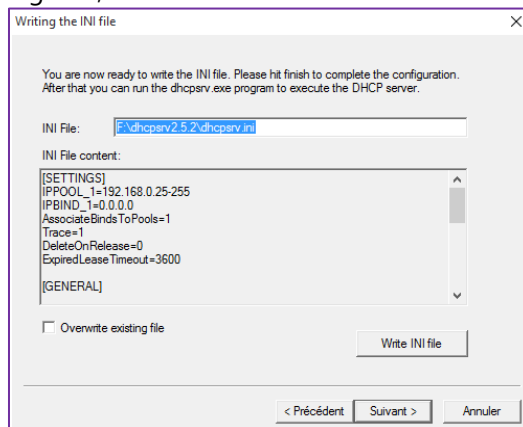
6. In the "Supported Protocols" screen, don't select anything and click on "Next >" button:



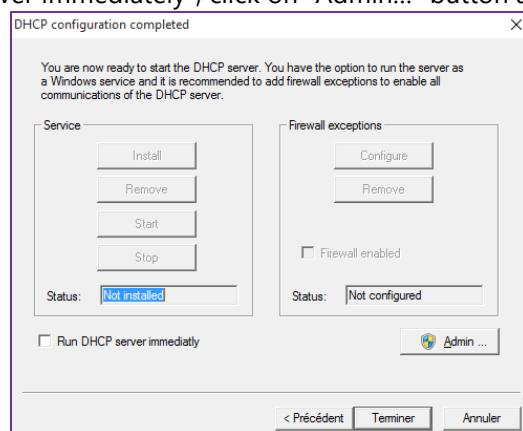
7. Select you IP range and click on "Next" button:



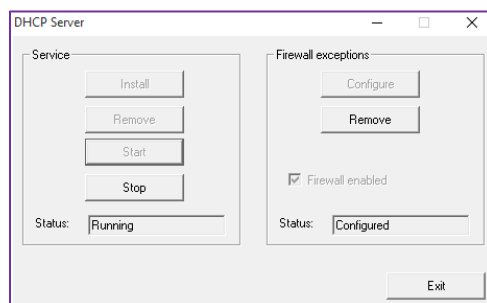
8. Check the option "Overwrite existing file", click on "Write INI file" and then click on "Next >" button:



9. Check the option "Run DHCP server immediately", click on "Admin..." button and then on "Finish" button:



10. The DHCP service is now running:



How to customize the welcome menu

Script.xml

Initially we need to declare the module SDSWelcome in the « Components list »:

```
<Components_List>
<!-- Modules loaded at startup...-->
    <component Name="Welcome" Path="MODULES\SDSwelcome.dll" Id="101">
    </component>
```

Then, we have to call the module:

```
<Item Name="Example" ... >
    <!-- SDSWelcome -->
    <Module Id="101" ConfigFile="Xxxx.ini" Param1="0" Param2="0" FullScrn="0">
</Module>
```

There is no parameter for SDSWelcome module but we need to declare it for the module call.

Since **SDS 18.0**, script variables are now fully using 'unsigned long' range from 0 to 0xFFFFFFFF.

SDSWelcome.ini

In the section « General » you define the main settings:

Mode is the user interface you want (radio buttons, check box, combo box)

Nb_Btn_Top = Number of buttons on top of the screen.

Nb_Btn_Down = Number of buttons in the main part.

Btn_Top_1 = first button on top.

We can define the buttons type (on top) we want, text field (Edit control -> 0) or combo box (Combo control -> 1).

In this example, we define a specific rule.

The « button » is a **text field** that accepts only numeric characters and having a max length of 9.

To validate you need **9 characters**. The digit is **divided in 2** parts. The first part is only one **numeric character and has to be 0**. The second part contains **8 numeric characters** (no other rules).

```
Type_Btn=0                -> text field
; 0 -> Edit control
; 1 -> Combo control
```

```
Btn_Text=IDS_TEXT_1
```

```
Nb_Part=2                 -> divided in 2 parts
```

```
Nb_Digit_Part_1=1         -> The digit part 1 length is 1
; x > 0 Length part = x; x = -1 No limit
```

```
Type_Digit_Part_1=0|0     -> the first character has to be numeric and equal to 0
```

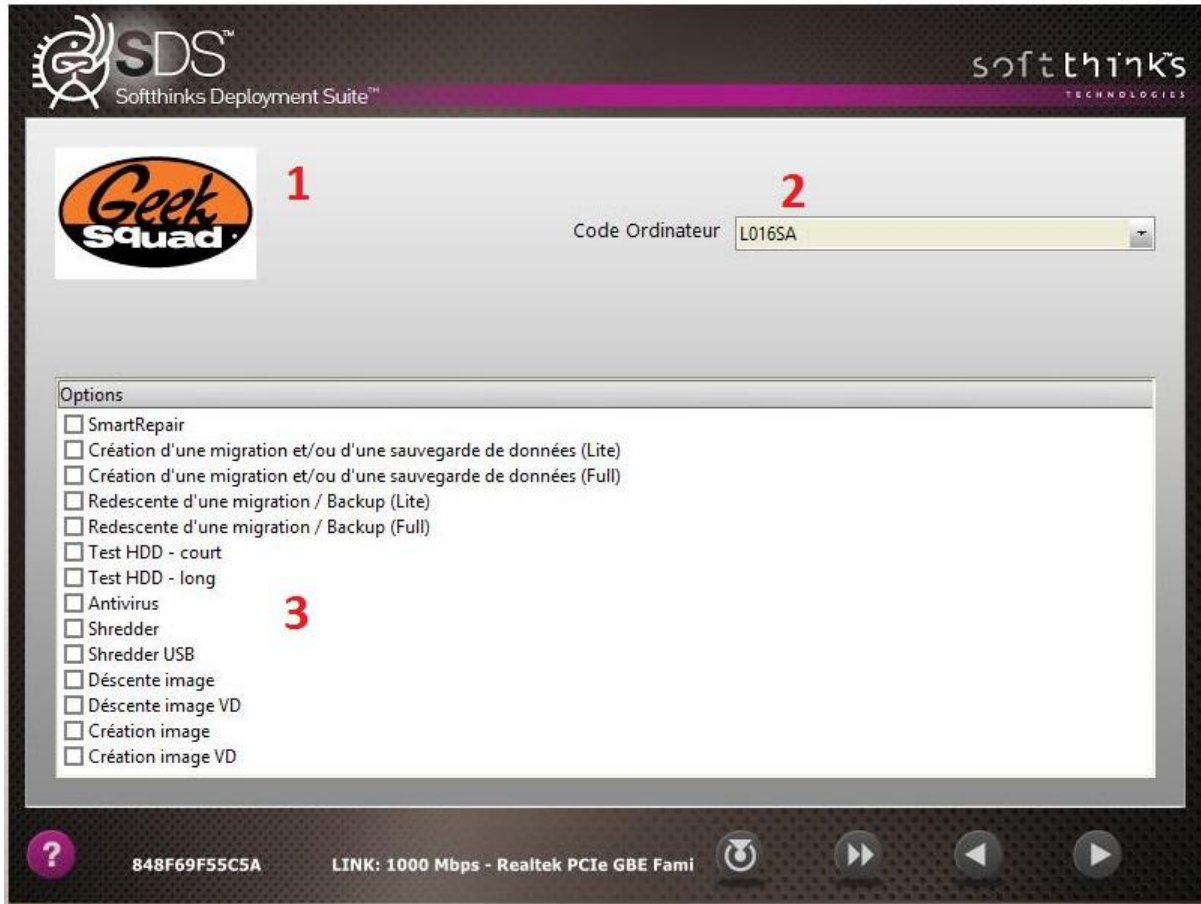
; 0 -> Numeric
; 1 -> Alpha
; 2 -> AlphaNumeric
; | char (digit must be char)

Nb_Digit_Part_2=8
Type_Digit_Part_2=0 **-> 8 numeric characters**

Min_Length=9
; x > 0 string length must be sup or equal to x; x = -1 no min

Max_Length=9 **->the string length is equal to 9**
; x > 0 string length must be inf or equal to x; x = -1 no max

Example



Please note that “;” in the beginning of the line means that you are commenting.

In this example, we have the following settings:

[General]

; 0 -> radio button

; 1 -> CheckBox

; 2 -> Button

Mode=2 -> The main menu will be a buttons menu

Nb_CustomAction=0

; 0 -> No logo

; 1 -> show logo

; logo file has to be named logo.png and put in Windows\System32

Logo=1

; max 4

Nb_Btn_Top=2 ; 2 buttons

; mode = 0 -> 5 max | mode = 1 -> 12 max | mode = 2 -> 10 max

Nb_Btn_Down=4

*;HardwareCheck=x -> 0 no check, 1 check and display dialog, 2 check and exit
;No more used. Kept for compatibility
HardwareCheck=0*

DODCheck=0 ; To know if wipe ran correctly. In case of refurbishing it can be useful. SDSWelcome if DOD flag is present you will have a button to continue

BatteryCheck=0 ; Check the battery level defined in section BattLevelcheck. If battery level is too low you will get a pop up warning. If 0 we check if the device is plugged to AC power

*[BattLevelcheck]
Platform= ; names separated by ','
BatteryLevel= ; Percentage*

*[Logo]
JPG=Logo.jpg*

*[Btn_Top_1]
; 0 -> Edit control
; 1 -> Combo control
Type_Btn=0 ; Edit control
Btn_Text=IDS_TEXT_1 ; Text in front of the control ("ID" in our example)
Nb_Part=1 ; Useful to split the contents of the control (for example an field with ...). Here we have 1 part which is the default value*

*; TO DEFINE Edit field mask
; x > 0 Length part = x; x = -1 No limit
Nb_Digit_Part_1=-1*

*; 0 -> Numeric
; 1 -> Alpha
; 2 -> AlphaNumeric
; | char (digit must be char)
Type_Digit_Part_1=2 ; 1st block contains only letters, no numbers
Nb_Digit_Part_2=6 ; 2nd block contains 6 letters or numbers
Type_Digit_Part_2=2*

*; x > 0 string length must be sup or equal to x; x = -1 no min
Min_Length=1*

*; x > 0 string length must be inf or equal to x; x = -1 no max
Max_Length=-1*

*[Btn_Top_2]
; 0 -> Edit control
; 1 -> Combo control
Type_Btn=1 ; Dropdown combo box*

Btn_Text=IDS_TEXT_2

Nb_Entries=2

Entry_1=IDS_COMBO_1_DEMO

Entry_2=IDS_COMBO_2_DEMO

[Btn_Down_1]

Result_Code=1

Btn_JPG=Repair_auto.png

Btn_Text=IDS_BTN_1

[Btn_Down_2]

Result_Code=2

Btn_JPG=Repair.png

Btn_Text=IDS_BTN_2

[Btn_Down_3]

Result_Code=3

Btn_JPG=Refurb.png

Btn_Text=IDS_BTN_3

[Btn_Down_4]

Result_Code=4

Btn_JPG=OEM.png

SDSWelcome.xml

For each button defined previously in the .ini file, we need to write the corresponding text and translation.

```
<string ID= « IDS_MON_BOUTON_1 »>  
  <en-US> My translation </en-US>  
  <fr-FR> My button 1 </fr-FR>
```

How to customize the repair screen

We are still in the SDSWelcome module. In SDSWelcome.ini we have Result_code=2 and in script.xml if we have result_code=2 we relaunch SDSWelcome module.

SmartRepair

- User data and settings backup

- Apply user data and settings backup

- SDS image or SmartImage creation

- SDS image deployment

- Updates and Report

- Hardware Check

- Windows Diagnostics

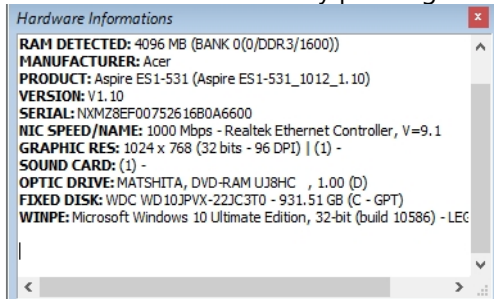
Repair.ini

You can preselect some options by default (the user cannot uncheck them).

You can also link some options to others, meaning that if the user selects an option the wizard will automatically select another option that we will have linked (MultiLink section).

How to get hardware information from SDS UI

You can get hardware information at any moment from the SDS UI by pressing CTRL+I:



How to get logs required for support purpose

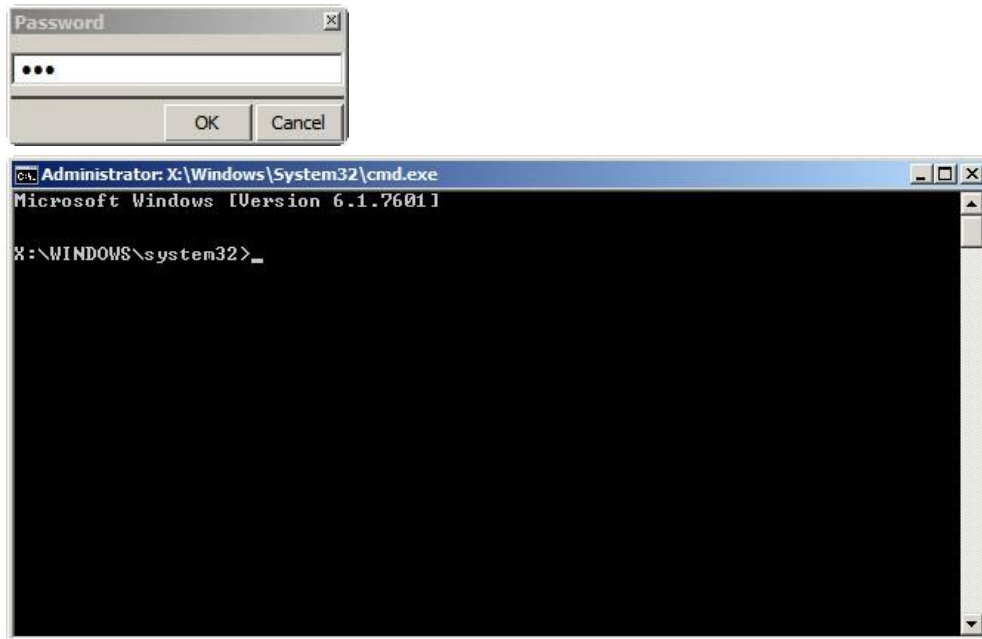
When an error occurs during any process, it is important to grab the logs which will be very helpful in order to diagnose the issue and solve it.

On client side, the logs from the RAMDrive R: are temporary and used to diagnostic a deployment in case of troubles. They are duplicated on the server in `reminst\sdkdb\temp`. It means that the temp folder will have a folder with all deployment log for each computer booting in WinPE environment

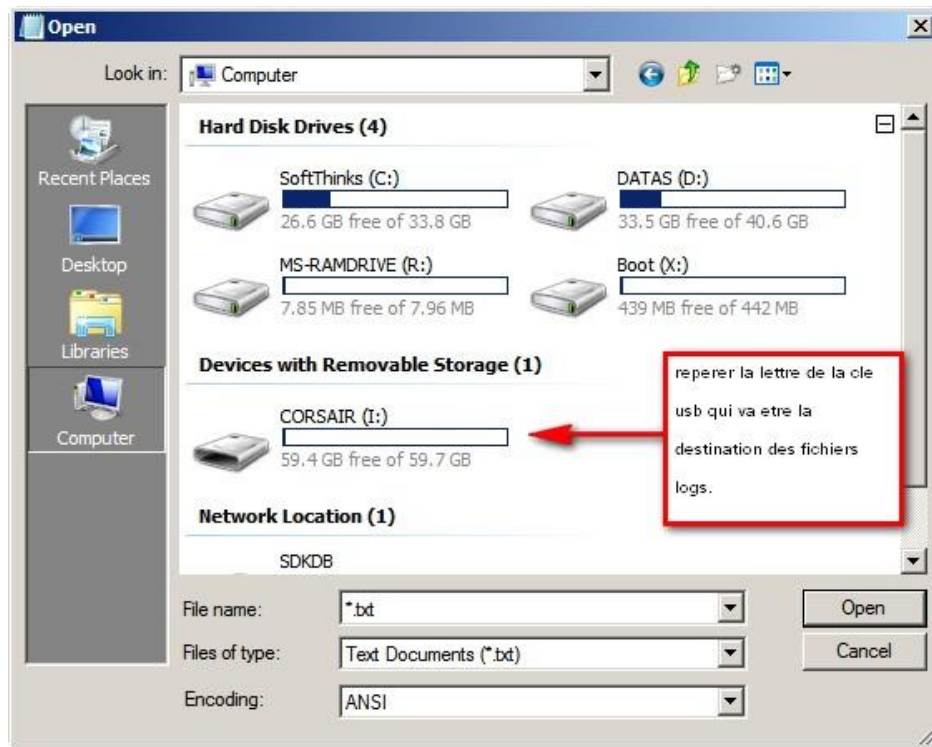
Some logs are generated by SDS product and others from the Microsoft WinPE boot process.

The XML

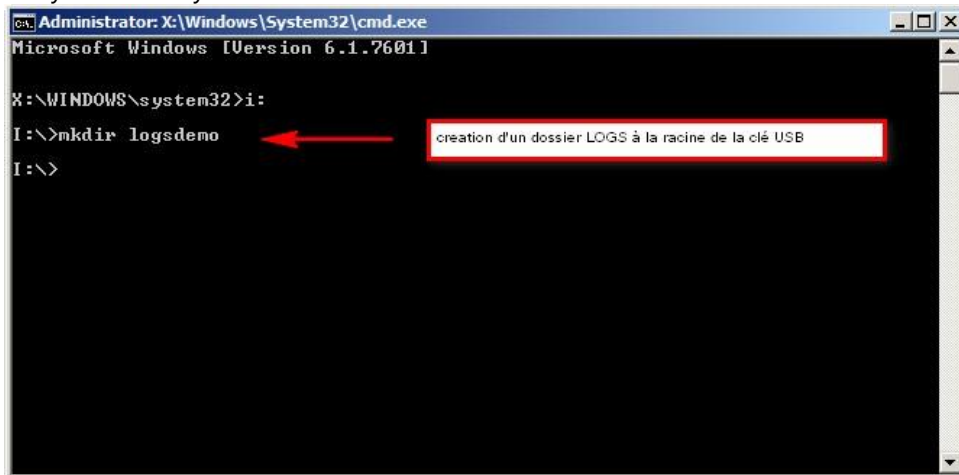
1. Press Ctrl + Alt + D to open a command prompt (press Ctrl + Alt + D). If a dialog box appears to ask you a password, type "sds" and click on "OK" button:



2. Plug a USB key and make note of the letter which is assigned to it. You can launch notepad.exe and select "Open" command to see all the drive letters:



3. Create a folder on your USB key:



4. Go to the RAM Drive R:




```
Administrator: X:\Windows\System32\cmd.exe
Microsoft Windows [Version 6.1.7601]

X:\WINDOWS\system32>notepad
X:\WINDOWS\system32>r: 
```

Envoyer R: pour entrer dans le RAMDrive qui contient l'ensemble des fichiers logs en fin de deploieement

5. Copy all the files from the RAM Drive to your USB Key:



```
Administrator: X:\Windows\System32\cmd.exe
Microsoft Windows [Version 6.1.7601]

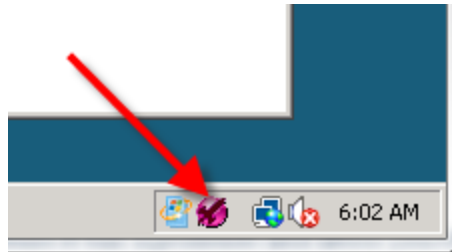
X:\WINDOWS\system32>i:
I:\>mkdir logsdemo
I:\>cd logsdemo
I:\logsdemo>r:
R:\>xcopy *.* i:
R:deploylauncher.ini
R:001321BE33C3_Flow.log
R:001321BE33C3_Flow.xml
R:Selector.ini
R:RSSelect.ini
R:mbr.ini
R:CSP.DAT
R:dsk_S062.hex
R:deploy_jukebox.exe.sds.log
9 File(s) copied
R:\>
```

copier l'ensemble des fichiers vers la clé USB.

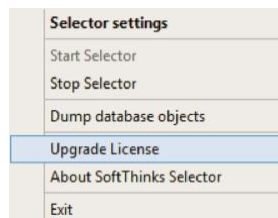
How to update the license

Please do the following steps to send us the licensing code for the server and we can send you back an activation code.

1. Go to the desktop of the server.
2. Look for a small icon will by your clock that is purple/pinkish and says SoftThinks Selector Service when you do a mouse over.
 - a. If that Icon is not there, navigate to the Remoteinstall\SDKDB\Selector directory and run SelectorSRVG.exe and the icon will appear
 - b. You may have to click the arrow next to the clock to show all the running icons:



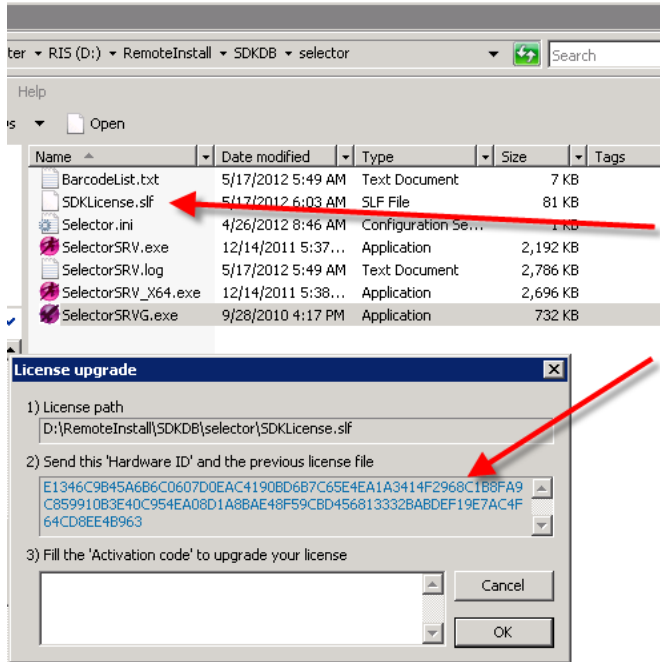
3. Right Click on this icon and select Upgrade License:



4. The License Upgrade Dialog box will open:



5. Send us the text from Step 2 in the License Upgrade Screen, and the SDKLicense.slf file from the RemoteInstall\SDKDB\Selector directory:

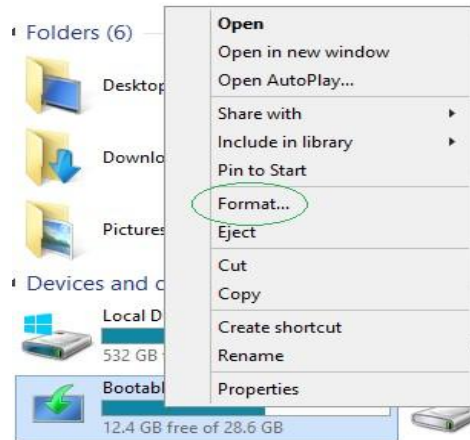


6. Once we have that we can send you back the upgrade key that you will paste into the "Fill the 'Activation code' to upgrade your license field, then click OK to renew the license.

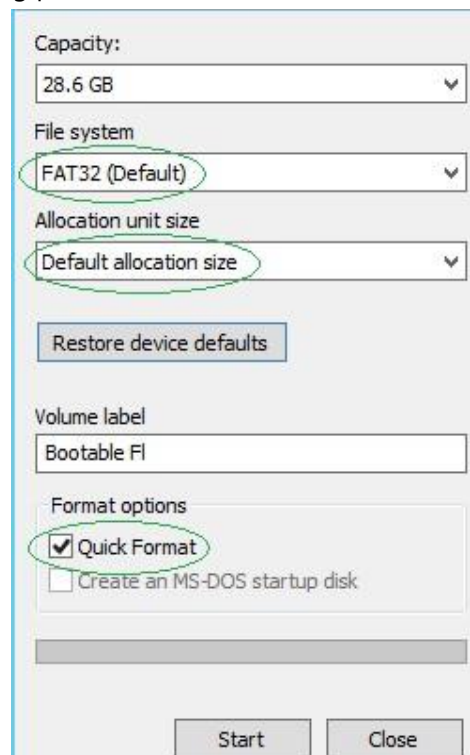
NOTE: Do not close the License Upgrade window until you get the Activation code from us.

How to format a USB Flash Drive before converting it to a SDS USB Flash Drive

1. Plug flash drive of at least 8GB into USB port on server.
2. Open File Explorer and locate the flash drive
3. Right click on the flash drive and select "Format":



4. Select Restore Device default. In most cases this will set the format to "FAT32" and "Default Allocation Size". If it does not, select these options from the corresponding pull-down menus. Select "Quick Format" check box:



6. Click Start.

How to boot from Bootable USB Flash Drive with USB Ethernet adapter

The Bootable USB Flash Drive will allow a unit that does not have an Ethernet port onboard to connect to the SDS Server using a USB Ethernet Adapter.

1. Ensure the device, laptop, desktop or tablet PC is able to boot to USB in the units BIOS.
2. Plug Bootable USB Flash Drive into an available USB port.
3. Plug USB Ethernet adapter into USB port and connect to network via Ethernet cable.
4. Power on the device and it should boot to the USB drive as default.

Note: Most brands of USB Ethernet Adapters are supported by the boot image on the USB Flash Drive or have drivers built into the adapter. On rare occasions, the boot image might not have the driver needed for the USB Ethernet Adapter. This driver can be added to the boot image through the SDS Console (See [Injecting drivers \("Inject Driver\(s\)" operation\)](#)).

How to prepare the database for the “Update database components” feature

1. Define the baseline (the deploy folder, and deploy64 selector) with all files updated.
2. Open the console by selecting the master.log from the reference database
3. Export into xml and rename it to update.xml (this file will be required on the FTP to accelerate the comparison between the base used and the baseline).
4. Prepare a sdkdb_update folder containing the deploy64, deploy, and selector folders from the baseline + update.xml. It is mandatory that the update.xml file corresponds to the deploy, deploy54 and selection contents in terms of files (version & CRC) and if there is any difference the update.xml file must be regenerated.

How to edit SPL Files

SPL File Naming Convention

The existing sales order system and manufacturing process should be considered when deciding the naming convention to allow for a seamless integration.

The SPL file name must begin with "S" and not exceed 11 characters including "S".

Example: S1234567890.SPL or SModelx.SPL.

Do NOT use any characters other than Alphanumeric ones (NO spaces, dashes, punctuation, etc.).

Dynamic SPL Naming Convention

Here are some examples that can be used to create a dynamic SPL per system:

- S%SerialNumber%.SPL
- S%SalesOrderNumber%.SPL

Static SPL Naming Convention

Here is an example that can be used to create a static SPL for multiple systems:

- S%ProductName%.SPL

System DMI Requirements

Here are the pre-defined System DMI field requirements for deployment using an SPL file. The chosen DMI field must match the name of the SPL file naming convention.

System DMI Serial Number Field

An Original Equipment Manufacturer (OEM) or an Original Design Manufacturer (ODM) may choose to use the system DMI serial number field (Type1 or Record1):

- Serial Number (SS): %SerialNumber%
- Serial Number (SS): %SalesOrderNumber%

System DMI Product Name Field

An OEM or ODM may choose to use the system DMI product name field (Type1 or Record1):

- Product Name (SP): %ProductName%

The DMI field name must not begin with (S) and not exceed 10 characters.

Ex: 1234567890 or Modelx. Do NOT use any characters other than Alpha/Numeric (NO spaces, dashes, etc.).

Note: The OEM or ODM is responsible for creating the SPL file. This will require development efforts to setup and maintain a translation program. The translation program will need to convert the existing part numbers to the SDK part number format and generate the SPL file.

SDK Part Number Format

The format used for part number scheme and revision control is the following:

- XXXXXX-XXX-XXX

Here are the pre-defined part number format requirements for deployment.

- A = Applications
Ex: A00001-001-001
Applications using silent installs, MSI, Installshield, etc.
- D = Drivers (Required if PnP is not used)
Ex: D00001-001-001
Device drivers using a PnP enumeration via .inf files.
- Q = QFE
Ex: Q00001-001-001
Security patches and updates.
- B = Bundle
Ex: B00001-001-001
Applications tied to hardware (link to PnP device ID).
- S = OS
Ex: S00001-001-001
Operating System.
- I = Smart Image
Ex: I00001-001-001
Smart Image may contain combination of hardware and software.
- P = Partition Scheme (hard coded)
Ex: P00001-001-001
Partition scheme based on hard coded numbers.
- T = Tools
Ex: T00001-001-001
Tools used for enabling/disabling SDK features (See SDK switches section).
- Z = Tests
Ex: Z00001-001-001
Optional deployment tests as specified by the OEM/ODM (See SDK switches section).

Definable Partition Number (Recommended)

- P0111D-p01-100-1 ; User partition, Windows primary, NTFS format, drive letter assigned, use 100% of total hard disk space.
- P 0111D-p01-050-1 ; User partition, Windows primary, NTFS format, drive letter assigned, use 50% of total hard disk space.
- P0112D-p01-100-1 ; User partition, Windows primary, FAT32 format, drive letter assigned, use 100% of total hard disk space.
- P0112D-p01-050-1 ; User partition, Windows primary, FAT32 format, drive letter assigned, use 50% of total hard disk space.
- P0211E-p01-050-1 ; Partition 2, Windows primary, NTFS format, drive letter assigned, use 50% of total hard disk space.
- P0212E-p01-050-1 ; Partition 2, Windows primary, FAT32 format, drive letter assigned, use 50% of total hard disk space.
- P0212E-p01-025-1 ; Partition 2, Windows primary, FAT32 format, drive letter assigned, use 25% of total hard disk space.
- P0311E-p01-025-1 ; Partition 3, Windows primary, NTFS format, drive letter assigned, use 25% if total hard disk space.
- P0312E-p01-025-1 ; Partition 3, Windows primary, FAT32 format, drive letter assigned, use 25% of total hard disk space.

Hard Coded Partition Number

- P00001-000-000 ; No recovery solution.
- P00001-510-000 ; Create system recovery folder, hidden and protected.
- P00001-534-950 ; Create recovery partition at start of disk, hide recovery partition, hide F10 boot key, swap partition table, auto-sizing + 500 MB reserved.
- P00001-536-950 ; Create recovery partition at start of disk, hide recovery partition, show F10 boot key, swap partition table, auto-sizing + 500 MB reserved.
- P00001-537-900 ; Create recovery partition at start of disk, show recovery partition, show F10 boot key, swap partition table, auto-sizing + 1000 MB reserved.
- P00001-537-950 ; Create recovery partition at start of disk, show recovery partition, show F10 boot key, swap partition table, auto-sizing + 500 MB reserved.
- P00001-537-400 ; Create recovery partition at start of disk, show recovery partition, show F10 boot key, swap partition table, 4000 MB Absolute RP size.
- P00001-538-950 ; Create recovery partition at end of disk, hide recovery partition, hide F10 boot key, swap partition table, auto-sizing + 500 MB reserved.
- P00001-541-950 ; Create recovery partition at end of disk, hide recovery partition, show F10 boot key, swap partition table, auto-sizing + 500 MB reserved.
- P00001-540-950 ; Create recovery partition at end of disk, show recovery partition, hide F10 boot key, swap partition table, auto-sizing + 500 MB reserved.
- P00001-539-900 ; Create recovery partition at end of disk, show recovery partition, show F10 boot key, swap partition table, auto-sizing + 1000 MB reserved.
- P00001-539-950 ; Create recovery partition at end of disk, show recovery partition, show F10 boot key, swap partition table, auto-sizing + 500 MB reserved.
- P00001-539-400 ; Create recovery partition at end of disk, show recovery partition, show F10 boot key, swap partition table, 4000 MB absolute recovery partition size.

SDK Switches

- T00003-700-001 ; Do no production management.
- P00001-000-000 : No recovery solution.
- Z00001-600-001 ; Run no tests.
- T00012-001-001 ; Disable PnP over SPL selection.

SPL files example

- P0111D-p01-100-1 ; User partition, Windows primary, NTFS format, drive letter assigned, 100% use of remaining hard disk space
- A00061-001-001 ; Branding in Windows (wallpaper)
- T00001-001-001 ; Branding in recovery UI
- S00029-001-001 ; XP Home SP2 English v.1, Windows XP (English)
- A00219-001-001 ; Roxio
- A00226-001-001 ; Application
- A00224-001-001 ; .net Framework
- D00003-002-001 ; Intel 845 G Chipset System 5.0.2.1003
- D00006-001-001 ; Intel 865 Integrated Video Driver
- D00026-001-001 ; RealTek LAN driver 5.606.811.2003

How to edit Data Backup configuration file

You can customize the Data Backup behavior by manually editing the SDSBackupMigration.ini file located in \SDSDB\Deploy\Windows\System32\modules\SDSFileBackup.

There are 3 types of Data Backup which can be set through this configuration file:

- **Backup** : Users files backup
- **Light Migration** : Users files & Settings and OS settings backup
- **Full Migration** : Users files & Settings, Applications settings and OS settings backup

[SDSFileBackup]

; AutomaticBackup : 0 for Automatic / 1 for Manual

AutomaticBackup=0

CountDown=500

; ArchiveName: Backup name that will appear in Data Backup UI if UserNameType is set to 0

ArchiveName=My Backup

; Backup destination (combination of <NAME> <S/N> and <MAC>)

ArchiveDestination=W:\<NAME>\<NAME>_<S/N>_Backup

; UserNameType: 0 to use the Backup name / 1 to use the MAC Address / 2 to use the Serial Number / 3 to use

; the result of a module (requires to specify the module ID and the value to read in NameType3)

; In the example below, we will use the Account Number value set by module SDS Welcome (121)

UserNameType=3

NameType3=<121>< Account number: >

ArchivePassword=

CapturePhoto=1

CaptureAudio=1

CaptureVideo=1

CaptureDoc=1

CaptureEmail=1

CaptureFinancial=1

CaptureOthers=0

; Map: 1 if you wish to store data backups in a folder outside of SDKDB structure or another device

Map=1

; If Map is set to 1 you need to specify the following information for the data backup target location:

MapDrive=W

Login=

Password=

Domain=

; UncPath=\\<Server IP address>\<shared folder >

UncPath=\\192.168.x.x\x

UncPath2=\\192.168.x.x\x

UncPath3=\\192.168.x.x\Migration

How to manually edit WTM configuration files

The SDSconsole for WTM settings use the following files in SDKDB\ENV_FILES\WINVISTA_10_64 or winvista_10:

- WindowsTestManager.xml
- WindowsTestManager_Btn.xml

WindowsTestManager.xml

WindowsTestManager.xml lets you configure all the settings (and also the custom tests) with the SDS Console Test part

```
<root>
  <Settings>
    <mode>auto</mode>      //manual or auto
    <sigverif>on</sigverif> //Check if drivers are signed or not
    <devmanager_on_error>on</devmanager_on_error> //Device manager
    <eventviewer_error_report>warning</eventviewer_error_report>
    <Start_in_Audit>off</Start_in_Audit>
    <Start_If_Conflict>on</Start_If_Conflict>
    <ShowSysPrepBTN>off</ShowSysPrepBTN>
    <Rapport_If_Success>on</Rapport_If_Success>
    <Rapport_If_Failed>on</Rapport_If_Failed>
    <ShowEvent>off</ShowEvent>
  </Settings>
  <Multimedia>
    <Test_WAVE>on</Test_WAVE> //Define all the multimedia tests you want
    <Test_MIDI>on</Test_MIDI>
    <Test_MP3>on</Test_MP3>
    <Test_MIC>on</Test_MIC>
    <Webcam_chk>on</Webcam_chk>
    <Test_HeadPhone>off</Test_HeadPhone>
  </Multimedia>
  <Network>
    <LAN> //Define all LAN tests you want
      <TestLan>on</TestLan>
      <AutoDHCP>on</AutoDHCP>
      <AutoDNS>on</AutoDNS>
      <IP>192.168.X.X</IP>
      <MASK>255.255.255.0</MASK>
      <GATEWAY>192.168.X.X</GATEWAY>
      <DNS1>X.X.X.X</DNS1>
      <DNS2>X.X.X.X</DNS2>
    </LAN>
    <WLAN> //If you want to test a specific WLAN
      <TestWlan>on</TestWlan>
      <SSID>TEST</SSID>
      <AUTH>open</AUTH> > // Open, shared, wpa, wpa2, wpapsk, wpa2psk
      <ENC>WEP</ENC // none,wep, tkip, aes
      <KEY>XXXXXXX</KEY>
    </WLAN>
    ← cf. end document for Wifi Configuration→
  </Network>
  <Oemreset>
    AutoReSeal=on
    Time=15
  </Oemreset>
  <Custom_test>
    <name>hddcheck</name> //add HDD Check
    <FilePath>C:\WinTEST\HDcheck\hddcheck.cmd</FilePath> //Path of hddcheck.cmd
    <Args></Args>
    <Auto_remove>on</Auto_remove> //Removed automatically after being used
    <Show>on</Show>
  </Custom_test>
</root>
```

```
<Succes_Code>0</Succes_Code>
<Stop_on_fail>off</Stop_on_fail>
<LogFile>C:\WinTEST\HDcheck\diagerror.log</LogFile> //change with the real path
</Custom_test>
<Custom_test_1>
  <name>BurninTest</name>
  <FilePath>C:\WinTEST\BurnInTest8\bit.exe</FilePath> //Path of bit.exe
  <Args>-L 0,0,0,0 -D 1 -R -X -C CPU+RAM+3D.bitcfg</Args> //Arguments (see doc Console_-
_BurningTest Integration Audit Mode for Generic Image)
  <Auto_remove>on</Auto_remove> //Removed automatically after being used
  <Succes_Code>666</Succes_Code>
  <Show>on</Show>
  <LogFile>C:\WinTEST\BurnInTest8\burnsdiag.log</LogFile> //same path defined in your .bitcfg
</Custom_test_1>
  ← cf. end document to send burnin test logs to the server→

<Custom_test_2>
  <name>Smart_Info</name>
  <FilePath>C:\WinTEST\InfoSmart\Info_Smart.exe</FilePath> //Path of Info_Smart.exe
  <Args>%DEPLOY_LOG%</Args>
  <Auto_remove>on</Auto_remove> //Removed automatically after being used
  <Show>on</Show>
  <Succes_Code>0</Succes_Code>
  <Stop_on_fail>off</Stop_on_fail>
  <LogFile> </LogFile>
</Custom_test_2>
<Custom_test_3>
  <name>Keyboard Test</name>
  <FilePath>C:\WinTEST\KeyboardTest\KeyboardTest.exe</FilePath> //Path of KeyboardTest.exe
  <Args></Args>
  <Auto_remove>on</Auto_remove> //Removed automatically after being used
  <Show>on</Show>
  <Succes_Code>0</Succes_Code>
  <Error_Code>1</Error_Code>
  <Stop_on_fail>off</Stop_on_fail>
  <LogFile></LogFile>
</Custom_test_3>
<Custom_Report>
  <Status>on</Status>
  <Check_nb>10</Check_nb> //Number of buton you define in WindowsTestManager_CustomReport.xml
</Custom_Report>
<Network_Log> //Setup this part to send the logs back to the server
  <Letter>N</Letter>
  <Domain>XX.com</Domain> //Your domain
  <Login>XXXXXX</Login> //You login
  <Pass>XXXX</Pass> //Your password
  <Path>\\xxx.xxx.x.x\reminst\sdkdb</Path> //Your IP or your Server name
  <SendLog>on</SendLog> // Send logs to the server when exists
</Network_Log>
</root>
```

WindowsTestManager_Btn.xml

The **WindowsTestManager_Btn.xml** file that you can find in the WinTEST root, allows you to modify your main menu (add, remove items)

Enter the same as you did previously in WindowsTestManager.xml.

```
<root>
  <Btn>
    <Custom_test>
      <name>windows_check</name>
    </Custom_test>

    <Custom_test>
      <name>multimedia</name>
    </Custom_test>

    <Custom_test>
      <name>network_settings</name>
    </Custom_test>

    <Custom_test>
      <name>BurninTest</name>
    </Custom_test>

    <Custom_test>
      <name>hddcheck</name>
    </Custom_test>

    <Custom_test>
      <name>Keyboard Test</name>
    </Custom_test>

    <Custom_test>
      <name>custom_report</name>
    </Custom_test>

    <Custom_test>
      <name>report</name>
    </Custom_test>

  </Btn>
</root>
```

Examples

WIFI configuration:

AUTH	ENC
WPA WPAPSK	TKIP
WPA2 WPA2PSK	AES
OPEN	NONE WEP
SHARED	WEP

Examples for the Wi-Fi

```
<WLAN>
  <TestWlan>on</TestWlan>
  <SSID>TEST</SSID>
</WLAN>
```

```
<WLAN>
  <TestWlan>on</TestWlan>
  <SSID>TEST</SSID>
  <AUTH> WPA2</AUTH>
  <ENC>AES</ENC>
  <KEY>XXXXXXX</KEY>
</WLAN>
```

```
<WLAN>
  <TestWlan>on</TestWlan>
  <SSID>TEST</SSID>
  <AUTH>open</AUTH>
  <ENC>WEP</ENC>
  <KEY>XXXXXXX</KEY>
</WLAN>
```

How to setup wipe rack view

You need to adjust the script and configuration files in the following way to activate rack mode view:

1. Adjust SDSShredder module param1 in the script.xml:

```
<Module Id="96" ConfigFile="<NASMAP:.\array_config.ini>" Param1="0x00000422"  
Param2="0x00000000" FullScrn="0"></Module>
```

- a) Add 0x400 to the param1 to activate the rack view
- b) Specify the algorithm to use in param2 as for the standard view

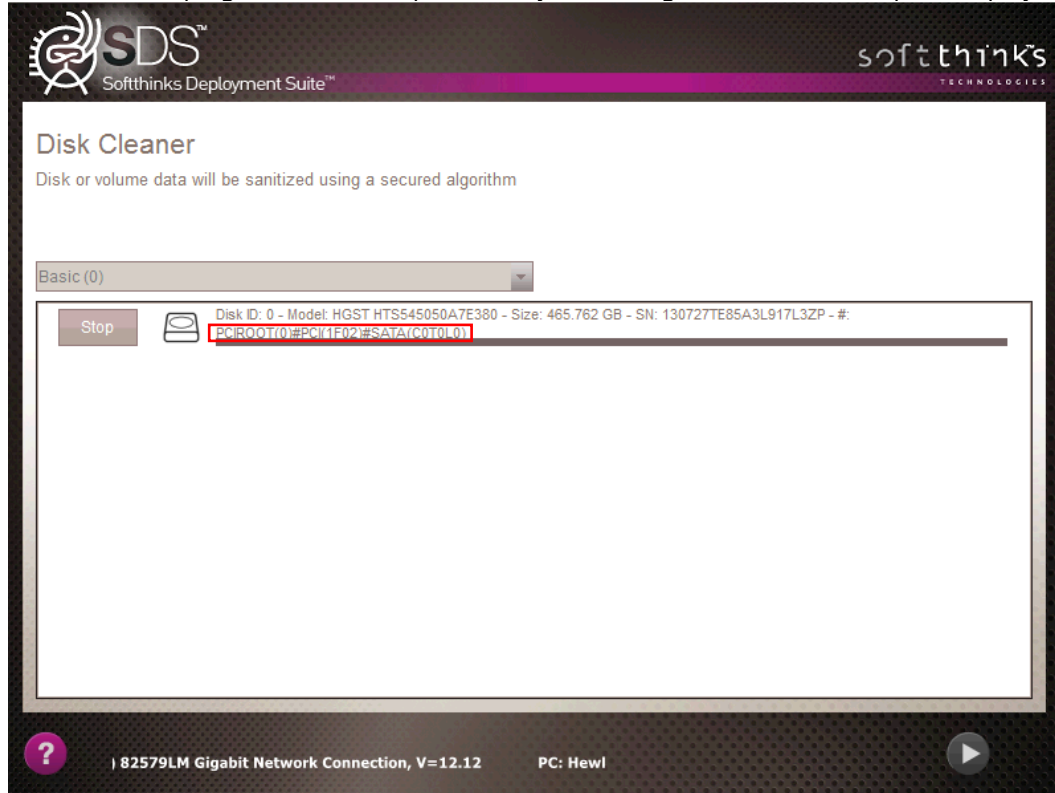
2. Adapt the configuration file array_config.ini (located next to deploy_jukebox.exe) to the rack layout:

```
[Config]  
; Default configuration file for a 24 ports bay rack to adapt to the rack layout  
  
; Number of rows  
Row=4  
  
; Number of columns  
Column=6  
  
; Display bay index number in upper left corner  
Show_Bay_Index=1  
  
; Method to retrieve SAS address when a disk is connected through a SAS port  
; 0 - Diskpart connector path (Connector index X / path PCIR00T(X)#PCI(Y)#SATA(Z))  
; 1 - SCSI path (PortNumber:PathID:TargetID:LUN) - LSI SAS2 HBA (92XX)  
; 2 - SCSI path (PortNumber:PathID:TargetID:LUN) - LSI SAS3 HBA (93XX)  
; 3 - Full level connector PCI address  
HBA_Type=0  
  
; File use as background bitmap for each disk bay  
BackGround=.\bay_background.bmp  
  
; Connectors path: replace each index value by the real connector / sas disk address  
Connectors=1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24  
; if HBAR_Type=1 or 2: Connectors=1:0:100:0,1:0:101:0,....,  
; To use several connector entries, specify the serial number returned by the command  
wmic "SELECT SerialNumber FROM Win32_BIOS"  
Connectors_<SerialNumber>= 1,2,3,PCIR00T(0)#PCI(1F02)#SATA(C04T00L00),5,6,7,...
```

- a) Set the number of rows and columns (4 and 6 respectively for a 24 bays rack as below):

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24

- b) Configure the connectors: All connector addresses must be filled manually regarding the hardware or the way you plug connectors. So basically you have to find the real connector path or SAS address manually.
- 1) For non SAS cards, you can grab the connector path from SDSShredder classic view or from Diskpart:
- a. In classic view, plug a disk to each port one by one and grab the connector path displayed:



- b. With DISKPART DETAIL DISK command, grab the Location Path:

```
X:\WINDOWS\SYSTEM32>DISKPART.EXE

Microsoft Diskpart version x.y.zzzz

Copyright (C) 1992-2018 Microsoft Corporation
On computer: <computer name>

DISKPART> SELECT DISK <DISK NUMBER>

Disk <DISK NUMBER> is now the selected disk.

DISKPART> DETAIL DISK

HGST HTS54505017E380
Disk ID :
Type    : SATA
Status  : Online
Path    : 1
Target  : 0
LUN ID  : 0
Location Path : PCIROOT(0)#PCI(1F02)#SATA(C0T0L0)
```

Note: USB disk could not be identified by diskpart or third party tool so you need to start shredder module in classic view mode to retrieve connector path

- 2) For SAS cards, you can use a third party tool to dump SAS address. For LSI cards, you can use SAS2 / SAS3 IR Configuration Utility (SAS2IRCU/SAS3IRCU):

```
LSI Corporation SAS2 IR Configuration Utility.
Version 20.00.00.00 (2014.09.18)
Copyright (c) 2008-2014 LSI Corporation. All rights reserved.

-----
Index      Adapter      Vendor  Device      SubSys  SubSys
Type       ID          ID      ID          Ven ID  Dev ID
-----
0          SAS2008     1000h   72h         00h:03h:00h:00h  1000h  3020h
-----
SAS2IRCU: Utility Completed Successfully.

LSI Corporation SAS2 IR Configuration Utility.
Version 20.00.00.00 (2014.09.18)
Copyright (c) 2008-2014 LSI Corporation. All rights reserved.

Read configuration has been initiated for controller 0
-----
Controller information
-----
Controller type           : SAS2008
BIOS version              : 7.39.02.00
Firmware version          : 20.00.07.00
Channel description       : 1 Serial Attached SCSI
Initiator ID              : 255
Maximum physical devices  : 255
Concurrent commands supported : 3432
Slot                      : 32
Segment                   : 0
Bus                       : 3
Device                    : 0
Function                  : 0
RAID Support              : No
-----
IR Volume information
-----
-----
Physical device information
-----
Initiator at ID #255

Device is a Hard disk
Enclosure #               : 1
Slot #                    : 1
SAS Address                : 4433221-1-0200-0000
State                     : Ready (RDY)
Size (in MB)/(in sectors) : 238475/488397167
Manufacturer              : ATA
Model Number              : WDC WD2500JD-22H
Firmware Revision         : 2D08
Serial No                 : WDWMAL71031724
GUID                     : N/A
Protocol                  : SATA
Drive Type                : SATA_HDD
```

```
Device is a Hard disk
Enclosure #           : 1
Slot #               : 4
SAS Address           : 4433221-1-0700-0000
State                 : Ready (RDY)
Size (in MB)/(in sectors) : 1907728/3907027054
Manufacturer          : ATA
Model Number          : WDC WD20EFRX-68A
Firmware Revision     : 0A80
Serial No             : WDWMC300243776
GUID                  : 50014ee058c98893
Protocol              : SATA
Drive Type            : SATA_HDD

Device is a Hard disk
Enclosure #           : 1
Slot #               : 6
SAS Address           : 4433221-1-0500-0000
State                 : Ready (RDY)
Size (in MB)/(in sectors) : 476940/976773167
Manufacturer          : ATA
Model Number          : TOSHIBA MK5056GS
Firmware Revision     : 3D
Serial No             : 21LBTk3HT
GUID                  : 5000039311505d92
Protocol              : SATA
Drive Type            : SATA_HDD

-----
Enclosure information
-----
Enclosure#           : 1
Logical ID           : 500605b0:01bd1520
Numslots             : 8
StartSlot            : 0
-----

SAS2IRCU: Command DISPLAY Completed Successfully.
SAS2IRCU: Utility Completed Successfully.
```

Note: For each SAS disk, DISKPART is not accurate in reporting valid connector path because they were reused once disk is removed or added. We need for this to talk to HBA SAS card to find real SAS address behind HBA chipset

Here is an example view with mixed disk SATA+USB, you could setup what you need according your hardware. The config file looks like this since there is no HBA SAS card plugged here.

```
Connectors=PCIR00T(0)#PCI(1F02)#SATA(C00T00L00),PCIR00T(0)#PCI(1D00)#USBROOT(0)#USB(1)#USB(3),
3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24
```

With HBA card installed, you need to add the proper SAS address (without dash '-') for each disk bay index separated by comma:

```
Connectors=4433221102000000,4433221107000000,4433221105000000,4,5,6,7,8,9,10,11,12,13,14,15,
,16,17,18,19,20,21,22,23,24
```


How to setup the auditing module

You need to create a question file and fill properly IDS strings according to the question specified. The syntax is pretty simple and described below.

Script.xml usage:

```
<Module Id="xxxx" ConfigFile=".\\QuestionDefinition.txt" Param1="0x0" Param2="0x0" FullScrn="0"></Module>
```

param1: 0x1 - Automatically adjusting column size regarding question

param2: N/A

Return Result Code

1 = error

0 = OK

QuestionDefinition.txt syntax:

```
; A question is displayed only if they are not part of conditional choice.
; All questions are displayed in their index order IDS_QUESTION1, then IDS_QUESTION2...
; Question prefixed by ';' in front of the line are commented, and so not displayed
; Questions can contain special characters through XML syntax ('< 5' would become <en-US>&lt;5</en-US>)
; By default, the first answer is selected except if you are forcing it by inserting the index (0
based) of the answer to preselect right after the question (IDS_QUESTION<x>,<preselected index>:...)
; If a question has only one value, it's an edit control. You can make it read-only by prefixing the
value by the character 'R' (IDS_QUESTION<x>:R,<IDS_EDIT_CONTROL_VALUE>)
; If a question has several values, it's a combo box. You can make it read-only and specify is this
case which is the selected response (IDS_QUESTION<x>:R<y>,<IDS_VALUE_<y>,<IDS_VALUE_<z>)
; %CPU% is a special keyword to replace answer on the fly could be one of the followings:
; Generic: CPU, RAM
; SMBIOS Area 0: BIOS_VENDOR, BIOS_DATE, BIOS_SIZE, BIOS_VERSION
; SMBIOS Area 1: SYSTEM_MANUFACTURER, SYSTEM_PRODUCT, SYSTEM_VERSION, SYSTEM_SERIAL, SYSTEM_UUID,
SYSTEM_SKU
; SMBIOS Area 2: BOARD_MANUFACTURER, BOARD_PRODUCT, BOARD_VERSION, BOARD_SERIAL

; Question 1 below is a simple question with 3 choices (3rd one preselected) which doesn't raise any
other question:
IDS_QUESTION1,2:IDS_VAL1,IDS_VAL2,IDS_VAL3

; Question 2 below is a 3 choices question (3rd one preselected) which raises 2 other questions
(Question3 and Question4) if the 2nd choice (IDS_VAL1) is selected:
IDS_QUESTION2,2:IDS_VAL2,IDS_VAL1=IDS_QUESTION3+IDS_QUESTION4,IDS_VAL3

; Question 3 and 4 below are a 2 choices question (1st one selected) which are displayed only if 2nd
choice has been selected for Question 2. Question 4 is a read-only combo box with 2nd choice selected
IDS_QUESTION3,0:IDS_VAL4 ,IDS_VAL5
IDS_QUESTION4:R1,IDS_VAL6, IDS_VAL7

; Question 5 below is a 2 choices question (2nd one preselected) which raises question 4 under
question 5 when the 1st choice (IDS_VAL1) is selected
IDS_QUESTION5,1:IDS_VAL1=IDS_QUESTION4,IDS_VAL2

; Questions 6 and 7 are edit controls. Question 7 is read-only
IDS_QUESTION6:%CPU%
IDS_QUESTION7:R,%RAM%
```

How to disable automatic deployment when a profile/preset is matching the system

You can either skip the profile dialog by setting the value `ShowProfileDialog` to 0 in the section `[General1]` of `Deployjb.ini` (See [DeployJB.ini](#)) or you can prevent to search for profiles in a specific folder by modifying the value `SEARCH_MODE` in the section `[General1]` of `SDSProfiles.ini` (See [SDSProfiles.ini](#)).

BurnInTest

BurnInTest Disk Test Suite

This suite contains a number of tests that exercise the mass storage units (hard disk or otherwise) connected to the computer.

These tests can be on the File System (e.g. NTFS disk volume C:) or directly to the physical disk (e.g. physical disk 1, not using a file system like NTFS).

The physical disk test is available on unformatted disks and formatted disks that do not contain Windows installations or paging files.

On WinPE environment, only unformatted disks are supported for the physical disk test.

By default drive C: is used for the hard disk but this can be changed from the Preferences Dialog and up to 50 drives can be selected for simultaneous testing. From this 50 it is possible to select combinations of available floppy disks, hard disks and flash drives.

Drives can be connected via the IDE bus, SATA, eSATA, SCSI, USB, Firewire or any other method supported by Windows.

You can select one of the following test modes or choose to automatically cycle between the patterns. This selection is done in the preferences window. Possible test modes are:

- Default (Cyclic)
- Sequential data pattern (0,1,2...255)
- Random data with random seeking
- High Low frequency data overwrite (10101 then 00001)
- Butterfly seeking
- Binary data pattern 1 (10101010)
- Binary data pattern 2 (01010101)
- Zeros data pattern (00000000)
- Ones data pattern (11111111)
- Random data pattern
- User defined test pattern
- Quick physical drive test
- Physical drive read test

During each test cycle (except Butterfly seeking and Quick physical drive test) a file is created and verified on the disk.

For the physical disk test there is no file system (e.g. NTFS) to write 'visible' files. As such BurnInTest will create 'virtual' files directly to the disk. This will destroy any data on the disk. The physical drive test in general will be much faster than the formatted drive test and provide better results.

The only exception is the Physical drive read test which will only read directly from the physical disk, and hence will not overwrite any data on the disk.

The size of the file is equal to a certain percentage of the disks capacity and all files are created in the root directory of the drives selected. The default file size is 1.0% of the disk size. For small capacity drives, like floppy disks, there is a minimum file size of 32KB. It is possible to change the default file size percentage from the preferences window.

Each test file is filled with a coded number sequence (a Pattern) that is used to verify the correct operation of the disk when the file is verified (read). Files are created in the free space on the disk until the disk is at least 94%* full (we'll refer to this as the 'full' level). When the disk has reached this limit, all the test files are deleted and the test starts again.

(*) 94% is used on disks that have a swap file or a Windows directory. A limit of 94% is used to ensure that some space is kept for use by other applications (including the windows swap file). On disks that do not have a swap file or a Windows directory, between 99.5% and 100% of the disk will be used.

A number of test modes perform additional testing to that described above. These are described below:

Random data with Random seeking consists of 2 repeating steps, (1) Writing, reading and verifying a test file with random data and (2) Seeking two random locations in the test files and reading or writing data blocks at this location.

(1) BurnInTest generates 7 unique blocks of random data for each disk under test (the block size is determined by the User preferences settings e.g. 16KB). BurnInTest sequentially writes a file using the first block of random data, followed by the second, third, forth, fifth, sixth and seventh and then the first etc, until the file size specified is reached (e.g. 0.1% of the disk size). After writing this test file with the random test data, the data is read sequentially and verified against the test data written.

(2) Following the writing and verifying of each file, the random seek part of the test starts. BurnInTest will select a test file at random (1..n, where n is the number of the test file that has already been written to disk). It will then select a random block within that test file (i.e. an offset into the file of, block number x block size, eg. 10 * 16KB = 160KB). BurnInTest will seek to this position in the test file and take an action. BurnInTest, at random, will either (i) read and verify a block at this position in the file or (ii) write a block at this position in the file. This process is repeated the number of times specified by the user in the disk preferences "seek count" field.

Steps (1) and (2) are repeated until the disk full level is reached. At this point, all the test files written to disk will be deleted and the process will be repeated.

The Random seeking mode is not supported when the Raw disk test mode is selected.

High Low frequency data overwrite works by first writing a file with a high frequency pattern with each byte set to 0xAA (1010 1010 1010 1010...), then overwriting this with a low frequency pattern 0x08 0x42 0x10 0x84 0x21 (1000 0100 0010 0001 0000 1000 0100 0010 0001) and then verifying that the low frequency pattern has been fully and correctly written. Note: This test pattern will write more data than it reads/verifies, this is the reason the MB Written and MB verified shown on the disk test window may not be equal.

Butterfly seeking works by detecting the hard disk geometry (number of cylinders etc) and then seeking between cylinder 0 and cylinder X and back to cylinder 0. This is repeated the user specified 'seek count' times, before X is incremented by 1. This is repeated until the last cylinder on the Volume is reached. The number of operations reported refers to the number of combined Seek/Read operations.

Note: (1) that this test is only supported in Windows XP and above on non-Floppy, non-optical drives.

(2) Performing a seek in many cases does not move the disk driver head, to ensure the disk drive head is moved to the seek position, a small read (of the Sector size) is done at each seek position. Also, incremental offsets of the sector size are used for the 'X' seek and the return to '0' seek, to ensure that the disk drive cache is overflowed and physical disk seeks consistently occur (once the disk cache has overflowed).

- (3) Disk drive geometry may be faked or translated by hard disks/device drivers and may not be the actual drive geometry.
- (4) The Cylinders, track and sector size used are typically logical values provided by the hard disk.
- (5) Up to 8 different physical extents per Volume (or Drive letter) are supported in the butterfly seeking test.
- (6) As with other disk tests, if a physical disk is partitioned into multiple volumes (drives) and testing is simultaneously carried out on these volumes, the nature of the test will change. In the case of Butterfly seeking, the movement of the physical disk drive head will not reflect butterfly seeking, but something between butterfly seeking and random seeking, as the seeks for volume 1 go from its logical cylinder 0 to X and the seeks for volume 2 go from its logical cylinder 0 to Y are mixed in time.
- (7) Some disk drive device drivers do not support the supply of disk geometry information that is needed for this test.
- (8) The Raw disk test option does not support the Butterfly seeking test mode and will be skipped. Error reporting may be configured not to report "Butterfly seeking test not supported for this disk" errors. This can be achieved by editing the Error Classifications file (BITErrorClassifications.txt) for Error Number 160 to NONE. For example, changing the line from:
- ```
160,"Butterfly seeking test not supported for this disk", INFORMATION,
 to
160,"Butterfly seeking test not supported for this disk", NONE,
```
- The default setting is to cycle between the patterns. In this case a new pattern will be selected each time the disk has reached the BurnInTest 'full' level. Where the disk drive is a floppy, CD, DVD, or the operating system is Vista (and later) and the user is not running BurnInTest with 'elevated' administrator privileges, then Butterfly seeking will be skipped in the Cyclic testing and a log message reported.

The Quick physical drive test works by writing, reading and verifying virtual test files to the start of the disk, the end of the disk and a random selection in between. This provides for much quicker disk testing.

The Physical disk read test, tests that all sectors on the physical disk can be read. This can be useful for a number of reasons including testing that a disk is the size that it reports it is (we have seen disks and USB Flash Drives that have this issue).

You can chose to log SMART (Self-Monitoring Analysis and Reporting Technology) errors.

Each of the following settings: Slow drive warning threshold, File size, Test pattern and the logging of SMART errors may be configured differently for each disk drive. The disk drive Duty Cycle setting will be used for all drives when the Duty Cycle Override entry is set blank (no value). If a different duty cycle is required for a particular disk drive, a value may be entered in the Duty Cycle Override entry.

The following settings can be configured differently for each drive: Slow drive warning threshold, File size, Test Pattern and Log SMART errors. To use the general disk drive Duty cycle for each disk just set the Duty Cycle override value to blank (no value), otherwise set the required value per disk. If an error is detected in the coded number sequence then the error count is incremented. The numbers of bytes written and read from the disk are displayed in the test window. The addition of these two values is displayed in the main window.

#### BurnInTest Disk Self-Test

The Disk Self-Test (DST) is a set of built-in routines implemented by the vendor to perform failure diagnostics on the disk. The execution of the DST and the retrieval of the test results are defined by the ATA industry standard. Most drives that conform to this standard implements this set of built-in routines.

If the "SMART" option is selected for the disk test, then the DST is run before the standard BurnInTest disk test. If the "-f" command line parameter is also specified, then an extended disk self-test is also run. If the DST is not supported by the disk, a message will be logged and the DST skipped.

Disclaimer: It has been observed that some drives that claim to support the Disk Self-Test (DST) standard do not in fact fully support the specification. Some drives report the percentage progress incorrectly, and some drives report their status incorrectly.

## BurnInTest CPU test

The CPU test exercises and verifies a wide range of CPU instructions, at user specified loads. The user selectable sub-categories of the CPU test are:

General purpose instructions (x86) Floating Point Unit (FPU) instructions (x87) CPU extension instructions (x86 extensions).

The specific extension instructions may be selected:

MMX, 3DNow!, SSE, SSE2, SSE3, SSE4.1, SSE4.2 and SSE4a.

Prime number test

Maximum heat test

The numbers displayed in the test window for this test represent how many millions of CPU operations have been performed and verified. Each different CPU test is run for half a second. After all tests have been run the cycle count is incremented. The duty cycle and the CPU speed determine how many operations can be processed during the half second period. Note however that if only the Maximum heat test is selected, then the duty cycle is set to 100% and a single cycle is defined to be 1 trillion CPU operations.

By default, a CPU test is run on each CPU core. The number of CPU tests running a particular subcategory is shown in the test window in the "Threads" column.

The number of CPUs (Packages x cores x threads) that can be tested is up to 256 (where supported by the Operating System). That is, CPUs across multiple "processor groups" can be tested (see Note 2 below).

It is possible to raise an error on a user defined CPU temperature threshold being exceeded. It is also possible to automatically stop testing in this scenario.

The sub-categories of this test are described below:

General purpose instructions: This test exercises and verifies correct operation of CPU instructions from the following groups: Integer mathematics (e.g. add, subtract, multiply and divide)  
Data transfer instructions (e.g. pushing/popping data to/from the stack)  
Bitwise logical instructions (e.g. bitwise and/or/xor) Shift and rotate instructions (e.g. shift data left x number of bits) Logical instructions (e.g. equals)  
Control transfer instructions (e.g. jump on x greater than y)  
String instructions (eg. copy a text string)

Known and random data sets are used to exercise and verify correct operation. On 32-bit systems, 32-bit data sets are used. On 64-bit systems, 64-bit data sets are used. The random numbers are generated regularly to provide a larger data set, as well as ensure that the CPU caches overflow and that this mechanism is tested.

Floating Point Unit (FPU) instructions:

This test exercises and verifies correct operation of CPU instructions from the following groups:

Floating Point math (e.g. add, subtract, multiply and divide)  
Transcendentals (e.g. sine, cosine)  
Load constants (e.g. load Pi)

Known and random data sets are used to exercise and verify correct operation. On 32-bit systems, 32-bit floating point data sets are used. On 64-bit systems, 64-bit floating point data sets are used. The random numbers are generated regularly to provide a larger data set, as well as ensure that the CPU caches overflow and that this mechanism is tested.

#### Extension instructions (x86 extensions):

This test exercises extensions to the x86 CPU instruction set for a variety of applications, such as multimedia.

!: This test exercises and verifies correct operation of CPU 3DNow! instructions, including a sample of moving 3DNow! registers, adding, subtracting, and multiplying. Known and random data sets are used to exercise and verify correct operation. Data sets are pairs of 32-bit floats (eg. x,y), where x and y are 32-bit floats.

MMX: As above, but for MMX instructions. Instructions include moving MMX registers, adding, subtracting, and multiplying.

Data set: 64-bit data sets are used. SSE : As above, but for SSE instructions. Instructions include moving SSE registers, adding, subtracting, and multiplying.

Data set: groups of 4 x 32-bit floats (e.g. a,b,c,d) where a,b,c and d are 32-bit floats.

SSE2: As for the SSE test, but for SSE2 instructions. Data set: pairs of 64-bit floats (e.g. x,y) where x,y are 64-bit floats.

SSE3: As for the SSE2 test, but for SSE3 instructions. Data set: pairs of 64-bit floats.

SSE4.1: As for the SSE3 test, but for SSE4.1. Instructions include a sample of moving registers and multiplication. Data set: pairs of 64-bit integers.

SSE4.2: As for the SSE4.1 test, but for SSE4.2 instructions. Instructions include CRC helper functions. Data set: pairs of 32-bit integers.

SSE4a: As for the SSE4.1 test, but for SSE4.a instructions. Instructions include data extraction functions. Data set: pairs of 64-bit unsigned integers.

AES: A test using the AES instructions.

#### Notes:

1. MMX stand for "Multimedia Extensions".
2. SSE stand for "Streaming SIMD extensions".
3. SIMD stands for "Single Instruction Multiple Data."
4. Tests are only performed if the CPU supports that test. For example, SSE3 tests will only be performed if the CPU supports SSE3.
5. Known and random data sets are used to exercise and verify correct operation
6. The random test data is generated regularly to provide a larger data set, as well as ensure that the CPU caches overflow and that this mechanism is tested.
7. AES stands for Advanced Encryption Standard.

#### Prime number:

This test exercises and verifies correct operation of CPU through the use of a prime number generation algorithm.

#### Maximum heat:

Based on PassMark Software testing of a set of CPU algorithms for different systems, a test has been produced that aims to generate the highest CPU temperature possible by BurnInTest. This test is aimed at checking that the cooling system is capable of doing its job with the system CPU under extreme load, especially when the CPU has been overclocked.



---

**Notes:**

- (1) Some CPU operation tests are only supported in the 32-bit version of BurnInTest. These are: 3DNow!, MMX, Push/Pop stack operations, Transcendental's and Load constants.
- (2) A normal software application only has access to a single "processor group". BurnInTest has been designed to test CPUs across multiple processor groups and hence test more than 64 logical processors. For more information on a "processor groups" see Microsoft's website, an extract is included below:

"The 64-bit versions of Windows 7 and Windows Server 2008 R2 support more than 64 logical processors on a single computer. This functionality is not available on 32-bit versions of Windows. Systems with more than one physical processor or systems with physical processors that have multiple cores provide the operating system with multiple logical processors. A logical processor is one logical computing engine from the perspective of the operating system, application or driver. A core is one processor unit, which can consist of one or more logical processors. A physical processor can consist of one or more cores. A physical processor is the same as a processor package, a socket, or a CPU.

Support for systems that have more than 64 logical processors is based on the concept of a processor group, which is a static set of up to 64 logical processors that is treated as a single scheduling entity. Processor groups are numbered starting with 0. Systems with fewer than 64 logical processors always have a single group, Group 0."

## BurnInTest Memory Test

The Memory test, tests the reliability of the RAM installed in the computer. As BurnInTest runs within windows some of the available RAM is being used by windows and any other applications running. Any memory that is not already in active use will be tested by the Memory test.

The Memory test works by writing a pattern numbers in the RAM, then verifying the numbers read from the RAM match this sequence. The pattern used can change automatically from one cycle to the next.

Possible test patterns are,

1. Sequence (0,1,2...)
2. Binary 1 (10101010...)
3. Binary 2 (01010101...)
4. Zeros (00000000...)
5. Ones (11111111...)
6. Cell adjacency test

The Test pattern may be selected to be one of the above test patterns. Alternatively, the default (Cyclic) setting will cycle through each of the test patterns.

The total amount of free RAM is displayed in the Memory Test Window. Some memory is always left available to avoid Out of Memory Errors, and disk thrashing caused by Windows swapping to disk. The MBs Written and MBs Verified fields on the Memory Test Window are cumulative since the start of the test and can be greater than the size of the installed RAM.

For the Memory test, a cycle is defined to be the number of times the above 3 step sequence is completed. The 'operations' count represents the number of bytes read or written.

It should be noted that not all RAM faults will be detected by this test. This is especially the case if Windows or the Windows cache is using a large proportion of the available RAM. RAM faults may show up as system crashes or disk errors however. RAM fault detection is improved by running a RAM pretest, available with the Standard memory test. See RAM test preferences.

How the tests work:

There are 3 steps that the Sequence, Binary 1, Binary 2, Zeros, and Ones (11111111...) tests goes through. These are:

- 1/ Memory allocation. The test will dynamically allocate and release memory depending on how much is currently available. The amount that has been allocated and is under test is displayed in the Test Ram field.
- 2/ Writing the test data from the low address to the high address.
- 3/ Verifying the test data from the low address to the high address.

The Cell adjacency test aims to find the RAM problem of adjacent memory cells being incorrectly changed when writes occur to a memory cell. A known 8-bit data pattern is written to memory from the high address range to the low address range. Then starting at the low address and testing towards the high address, each byte is checked that it was not altered by an adjacent write in the previous writing of memory and a new 8-bit data pattern is written. A final pass is then made starting at the high address and testing towards the low address, with each byte is checked that it was not altered by an adjacent write in the previous writing of memory.

- **Standard memory test**

The standard memory is the normal test for testing memory. See the description in the RAM test preferences window for more details.

- **Torture test (Memory over-allocation & disk swapping test) (BurnInTest Professional only)**

The torture test is a multi-process memory test. Multiple processes are started in their own virtual address space and each process allocates and tests a block of RAM. This avoids the problem of virtual memory fragmentation which the standard test can experience trying to allocate a single large block of RAM. Each process runs asynchronously, so writing and reading of various memory blocks will take place at the same time in different processes. The other advantage over the standard test is the possibility to over-allocate the RAM. (The standard test attempts to prevent this to avoid disk swapping). Over-allocation takes place when more RAM is used by the torture test than is currently available in the system. This then results in Windows disk swapping memory blocks into a paging file on the disk. This continual swapping to and from the disk places a very heavy load on the system. The I/O activity on the disk will increase dramatically but CPU load can actually decrease as more and

more time is spent waiting for the paging activity to complete. Depending on the level of over-allocation Windows may need to extend the paging file or may even fail as it runs out of available RAM.

- ***Addressing Windows Extension (AWE) memory test (32-bit BurnInTest Professional only)***

The Addressing Windows Extension (AWE) memory test allows a larger area of memory to be tested on 32-bit versions of Windows. It requires some additional administrator user rights. It will also only work in Window XP. See the description in the RAM test preferences window for more details. The advanced memory test is only available in the Professional version of the software.

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