



Maintenance Disk Installation

Date: June 23, 2023

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ThinkPad Maintenance Disk Installation

Requirements

- Download the Advanced Menu Config files: <https://support.lenovo.com/us/en/downloads/DS545236>
- Download the Current Version of Maintenance Utility from Support Site
- **The system being repaired needs to be updated to the latest available BIOS for the system. See the relative BIOS readme for instructions for creating USB bootable BIOS update media. If BIOS is current and verified via support site, the update is not needed.**

USB media

The Lenovo ThinkPad maintenance utility version 1.17 and later can be created for use on a USB memory key / flash drive media. The USB drive creation utility must be created in a Windows 10 environment.

Note1:

- The use of the smallest capacity USB flash drive available is strongly recommended.
- Use of an USB A or USB C flash drive will be required depending on the specific Thinkpad being serviced, ie some systems may only have a USB C port.






Specific Thinkpad models released in 2020 and beyond require keyboard language to be entered into BIOS after planar replacement.

Note2: Thinkpads released in 2020 and beyond require the addition of keyboard language in BIOS after planar replacement. See section at bottom of this document for correct procedure.

Creation of the Maintenance Utility USB key

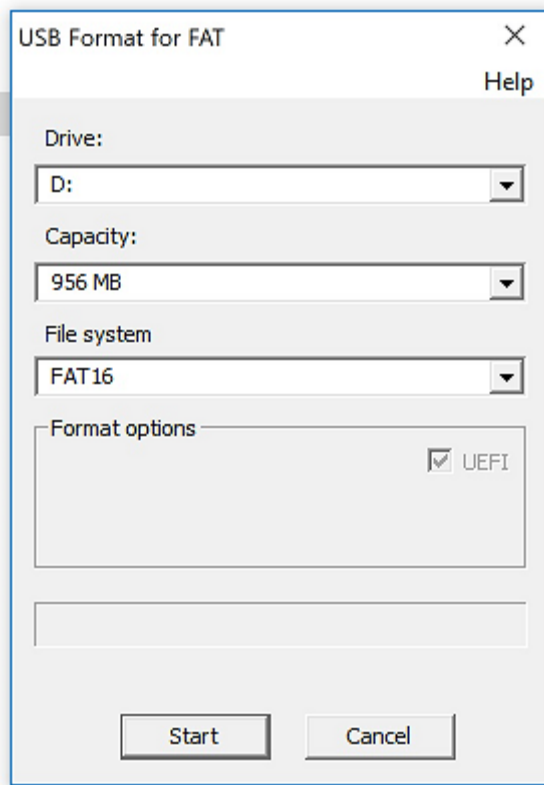
Note: Please remove all USB keys prior to continuing

1 - Download and extract the current version of the UEFI Maintenance Utility from the Lenovo Support site. Once downloaded and extracted to a system, the folder structure will appear as follows:

Name	Date modified	Type
 EFI	8/14/2020 12:48 AM	File folder
 plnsrv.ini	6/22/2020 12:15 AM	Configuration settings
 tpconfig.ini	8/13/2020 10:04 PM	Configuration settings
 USBFMT.INI	5/31/2018 10:56 PM	Configuration settings
 usbfmtpw.exe	6/14/2018 4:13 AM	Application

2 - Insert a USB key desired to be formatted for creation of the Maintenance Utility.

3 - Double-click USBFMTWPW.EXE to launch the USB disk creation utility.



Note: This process will erase all content from the drive specified.

4 - Click **Start** to begin the process and click **Ok** once process has completed.

The resultant USB drive will have a volume name of LENOVOBIOS and have the following directory structure:

\EFI\BOOT\BOOTX64.EFI

Adding Advanced Menu Config Files

1 - Download and extract the Advanced Menu Config files: <https://support.lenovo.com/us/en/downloads/DS545236> to the root of the USB drive created above. Be careful to **ONLY** extract the files and NOT the folder.

Note: The unzip password is Lenovo.

2 - Once complete, the USB drive created above should have the following layout.

Correct			Incorrect		
Name	Date modified	Type	Name	Date modified	Type
EFI	10/1/2021 11:52 AM	File folder	Advanced_menu	1/8/2021 3:24 AM	File folder
Keyboard_ID_list.txt	7/9/2020 6:37 AM	Text Document	EFI	10/1/2021 11:52 AM	File folder
plnsrv.ini	7/20/2021 3:54 AM	Configuration settings			
tpconfig.ini	9/28/2020 4:59 AM	Configuration settings			

Usage

Boot USB Flash drive via ThinkPad F12 menu

Note 1: The drive may show up as USB FDD or similar depending on vendor of drive.

Note 2: When boot with ThinkPad X1 Carbon 9th Gen, X1 Yoga 6th Gen or X13 Yoga Gen2, you will be prompted below message to confirm the BIOS and MEFW version instead of Main Menu.

To boot to Main Menu without below message, need to modify the tpconfig.ini file in the USB Flash drive to remove the comment ';' character from ";Skip_Check = 1" statement.

Please refer [here](#) for detail explanation.

Note 3: Please refer to below links to get EFI ISH Firmware Update tools and readme files.

ThinkPad X1 Carbon Gen 9 and X1 Yoga Gen 6	JP1 ISH FW Update Tool	Readme
ThinkPad X13 Yoga Gen 2	Lx1 ISH FW Update Tool	Readme

```

=====
|   Lenovo Confidential   Lenovo Confidential   Lenovo Confidential   |
|   Copyright (C) Lenovo 2021- .   |
|   Firmware Checker for Service Engineering 1.0.0.1 (Jan 30, 2022)   |
|                                           ThinkPad BIOS Team |
=====

Your system firmware information is,
    BIOS: N32ET75D (1.51 )
    ME: 15.0.0.1318
    ISH: 5.4.1.4449

It is highly recommended to update your system firmware, especially if you've re
placed the LCD parts, the firmware below is required.
    Target BIOS: N32ET71W
    Target ME: 15.0.23.1706
    Target ISH: 5.4.2.4469

Thank you for your support!

Press Enter to restart, or press F1 to continue...

```

Main Menu:

```

ThinkPad Maintenance Utilities V1.20(X64) Lenovo Confidential May.12.2023
=====
1 - Planar service
2 - Set system identification
3 - Assign UUID
4 - Update Configuration Area
5 - EEPROM Operations
6 - PDT
7 - Backup/Restore BIOS Settings

9 - Exit (Shutdown)
Enter the action desired.
?

```

*Note: Option 1 is the only menu item used during planar replacement.

Select Option 1 - Planar Service

1) Add Dummy SN for AMT clear procedure. Use the correct Model Type information followed by 8 random letters and press Enter.

Note: Please make sure to precede the value entered with a '1S' as pictured below.

```
Input new S/N below, or press ESC to exit.
? 1S20N20043US1234QWER

The new S/N data will be set to: (not performed yet)
B0 8SSB20V08307L1HF031077T
C0 1S20N20043US1234QWER
```

2) Utility will search for correct brand name in the plnsrv.ini file and display on the screen. Type "1" to use the brand name found and press Enter.

```
Current brand name is: ThinkPad T490
Brand name was found in plnsrv.ini file: ThinkPad T490

Existing brand name is same to the value found in INI file.
Do you want to use this brand name?(1=YES, 0=NO)
? 1

The brand name will keep current setting:(no change)
ThinkPad T490
```

3) Confirm data is written correctly, Enter '1' to update the EEPROM and see the results.

```

The following data will be written to EEPROM:
- Set S/N data(C0) to: 1S20N20043US1234QWER
- Set brand name: ThinkPad T490
- Create a new random UUID.

- Please confirm(1=YES, 0=NO & Go Back)
? 1

Updating EEPROM contents...

Data has been written to EEPROM successfully. As below:
- Set S/N data(C0) to: 1S20N20043US1234QWER
- Set brand name: ThinkPad T490
- UUID: CC3BE572-041F-B211-A85CAE2DE0FF679B

Press ENTER to continue...
  
```

4) Press Enter and the initial menu will be displayed.

Note: Some systems may request input of keyboard language id. Those systems include: ThinkPad T490, ThinkPad X13/ X13 Yoga, ThinkPad L14/L15, ThinkPad T14s, ThinkPad T14/T15, ThinkPad X1 Yoga 5th Gen, and ThinkPad X1 Carbon 8th Gen

See Additional Information Section below for corresponding 4 digit keyboard language ids.

```

ThinkPad Maintenance Utilities V1.15(X64) Lenovo Confidential Jul.20.2021
-----
1 - Planar service
2 - Set system identification
3 - Assign UUID
4 - Update Configuration Area
5 - Initialize EEPROM

9 - Exit (Shutdown)
Enter the action desired.
?
  
```


5) Type '9' to exit and power off the system.

6) Power system back on. System may flash Unconfiguration in Process and reboot several times. Allow system to reboot as needed.

7) After all reboots complete and system boots to logon screen, reboot the system back to the Maintenance utility key and re-enter the Correct Model and Serial info based upon barcode sticker on thinkpad base cover. Use the above steps in order again.

How to Set Country Code

1. Select "2 - Set system identification"

```
ThinkPad Maintenance Utilities V1.20 (X64) Lenovo Confidential May.12.2023
-----
 1 - Planar service
 2 - Set system identification
 3 - Assign UUID
 4 - Update Configuration Area
 5 - EEPROM Operations
 6 - PDT
 7 - Backup/Restore BIOS Settings

 9 - Exit (Shutdown)
Enter the action desired.
?
```

2. Select "1 - Add SN data to EEPROM"

```
ThinkPad Serial Number Update Utility for Asset ID
-----
1 - Add S/N data to EEPROM
2 - Read S/N data from EEPROM
3 - Delete S/N data from EEPROM

9 - Exit

Enter the action desired.
?
? 1
```

3. Input CC and Country Code

```
Enter the Device Type number.
(ex. B0 - System board Serial Number)
C0 - System-unit Serial Number
CC - Ship to Country Code (DE = Germany)
D0 - DC/DC Card Serial Number
E0 - CPU Card Serial Number

? CC

Enter the Serial Number.

? DE

Type Data
-----
CC  Data is written successfully.
```

4. Select "2 - Read S/N data from EEPROM"

```
ThinkPad Serial Number Update Utility for Asset ID
-----
1 - Add S/N data to EEPROM
2 - Read S/N data from EEPROM
3 - Delete S/N data from EEPROM

9 - Exit

Enter the action desired.
?
? 2

Type Data
-----
B0 8SKYG80NS10JL1HF2AW0024
C0 1S21HMSIT029PF43YD4M
CC DE
```

Additional Information

- [Supported Keyboard Language ID list](#)
- [ISO Country Code list](#)

Service Management Support Center

The SMSC is available from 9 A.M. to 5 P.M. Eastern Standard Time, Monday through Friday. You may find listed below the SMSC contact channels:

- E-mail: **smc@lenovo.com**
- Phone: 800-426-3391