

**TOSHIBA**

**TOSHIBA Drive Common Tool  
(TSBDRV)  
Installation Guide (3.11)**

**Toshiba Electronic Devices & Storage  
Corporation (TDSC)**

## History

Revision	Date	Description
0.1	March 2016	Preliminary release
0.4	May 2016	Bug fix release
0.8	June 2016	NVMe Support and Internal review
0.9	June 2016	Bug fix release
1.0	July 2016	Lock path update
1.1	September 2016	Bug fix release
1.2	September 2016	Legal review
1.3	June 2017	Feature update release
1.4	October 2017	Feature update & Bug fix release
1.5	December 2017	Minor feature update
1.6	February 2018	Feature update & Bug fix release
1.7	June 2018	Defect fix release
2.0	July 2018	Legal update & review
2.1	Oct 2018	Added firewall exception during install
2.2	Nov 2018	Legal update & review
2.3	Jan 2019	Added Default Port Information
2.4	July 2019	Library linking information update
2.5	Jan 2020	Copyright Information update
2.6	Apr 2020	x32 OS support removed
2.7	Jun 2020	Updated Open Source Software information
2.8	Nov 2020	TOSHIBA logo is updated
2.9	Feb 2021	Copyright Information updated
3.0	Apr 2021	Section 1.2 and 2.7 updated
3.1	May 2021	Updated ARM architecture support in: Section 1.2 Supported Operating system Section 2.1 Generic system requisites Section 2.2 Installation Files Note in Section 2.4 Installation on Linux Section 2.4.1 Linux Folder Tree
3.2	June 2021	Updated Section 3 Open Source Software Section 2.2 Installation Files
3.3	Sep 2021	Added Section 2.5 and 2.6 Updated Section 2
3.4	Jan 2022	Updated copyright information Updated section 2.9.1 and 2.9.2
3.5	Jul 2022	Updated copyright information Updated section 6 for EULA
3.6	Jan 2023	Updated copyright information
3.7	Jul 2023	Removed NVMe information from section 1.1 Added Win-11 in section 1.2
3.8	Jan 2024	Updated copyright information

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3.9	Apr 2024	Removed Windows installation, updation and uninstallation sections
3.10	May 2024	Removed tiny core linux section
3.11	Jun 2024	Added Section 3 Troubleshoot steps

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# 1 Introduction

This document describes the method for installing TOSHIBA Drive Common Tool (TSBDRV) which provides the mechanism to manage TOSHIBA drives.

## 1.1 Software configuration

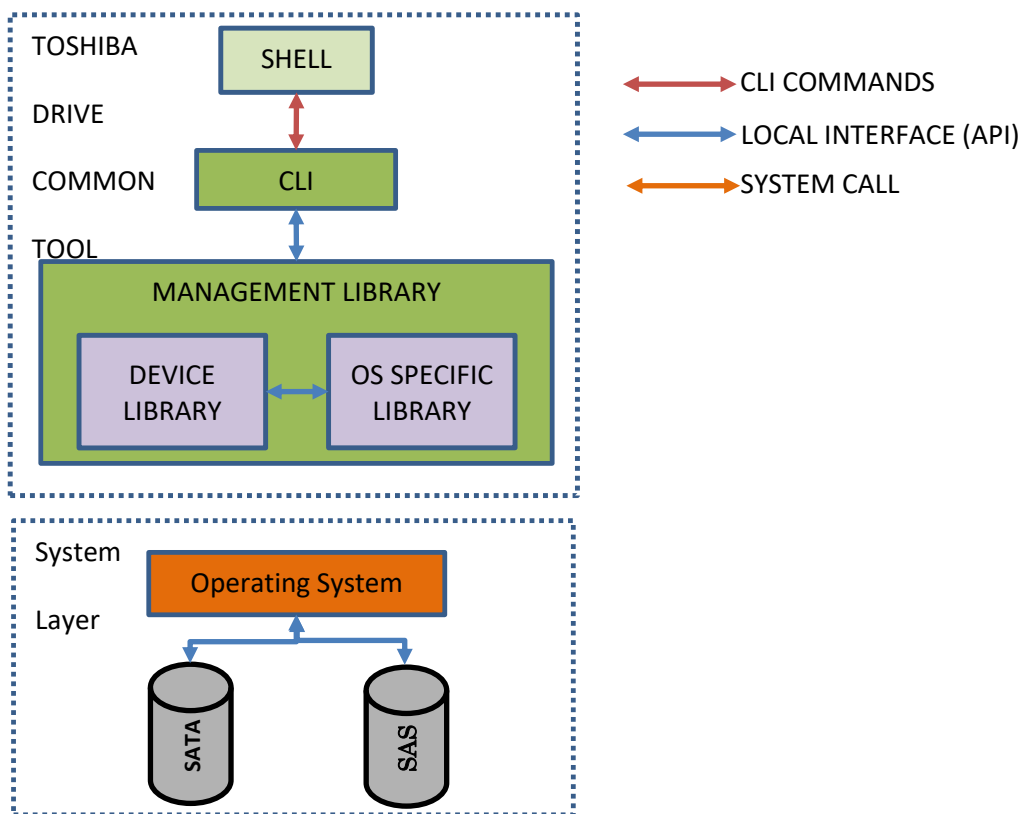


Figure 1: Host software for managing TOSHIBA drives

## 1.2 Supported Operating Systems

Operating Systems supported by the TOSHIBA TSBDRV tool are as follows:

CPU Architecture	OS	Version/Flavors
x64	Windows® 64-bit	Windows® Server 2008 R2
		Windows® Server 2012 R2
		Windows® Server 2016
		Windows® 8.1
		Windows® 10
		Windows® 11
	Linux® 64-bit	RHEL® 6.0 and above
		SLES® 12 SP1 and above
		Ubuntu® 14.04 and above
		CentOS 7 and 8
	FreeBSD 64-bit	FreeBSD 12.2
AArch64	Linux® 64-bit	CentOS 7.0

## 2 TOSHIBA TSBDRV Software Setup

TSBDRV Software Setup can be created using following packages

1. Installation Files
2. Zip Files
3. Standalone Files

### 2.1 Generic system requisites

The following generic system requirements need to be met for installation of TOSHIBA drive common tool.

No.	requirements	Details
1	Operating System	See section <a href="#">1.2</a>
2	CPU Architecture	x64/aarch64
3	RAM Size	4GB
4	User Privileges	Administrator/Super-user

**Table 1: System requirements**

## 2.2 Installation Files

Installer files for supported platforms are named as follows

1. Linux 64-bit Installer: install-lin-toshiba-CC\_rel-tsbdrv-MM.mm.bbbb.ARCH.bin

The file names are in the following format:

install-<platform>-toshiba-<CC>\_rel-tsbdrv-<MM>.<mm>.<bbbb>.<ARCH>.<ext>

<platform> : 'lin' for Linux

<CC> : 2 digits Customization Code

<MM> : 2 digits Major Version

<mm> : 2 digits minor version

<bbbb> : 4 digits build number

<ARCH> : CPU architecture

**x64**: Intel 64-bit CPU Architecture

**aarch64**: ARM 64-bit CPU Architecture

<ext> : File extension i.e. bin for Linux platform



## 2.3 Installation on Linux

1. Start the Installation on a command prompt with Administrative privileges (Super User).

Command
#./install-lin-toshiba-01_rel-tsbdrv-13.05a.7850.x64.bin
Output
<p>END-USER LICENSE AGREEMENT FOR TOSHIBA Drive Common Tool (TSBDRV)</p> <p>BY CLICKING "I ACCEPT" AT THE END OF THIS AGREEMENT OR BY INSTALLING, ACCESSING, OR USING ANY PART OF TOSHIBA Drive Common Tool ("TSBDRV"), YOU ACKNOWLEDGE THAT YOU HAVE READ AND UNDERSTOOD THIS AGREEMENT AND THAT YOU AGREE TO BE BOUND LEGALLY BY THE TERMS AND CONDITIONS. IF YOU DO NOT AGREE TO COMPLY WITH THE TERMS AND CONDITIONS, PLEASE CLICK "I DECLINE." AND DO NOT INSTALL OR USE TSBDRV.</p> <p>The End-User License Agreement For TOSHIBA Drive Common Tool ("EULA") is an agreement between you and Toshiba Electronic Devices &amp; Storage Corporation ("TDSC") for TSBDRV, and its associated software components, media, printed materials, and online or electronic documentation ("Software").</p> <p>1. GRANT OF LICENSE: TDSC grants you the limited, personal, revocable, non-exclusive, non-transferable and royalty-free license (with no right to sublicense) to install and use a single copy of the Software on your computer or product. THE SOFTWARE IS NOT INTENDED FOR USE IN THE OPERATION OF NUCLEAR FACILITIES, AIRCRAFT NAVIGATION OR COMMUNICATION SYSTEMS, AIR TRAFFIC CONTROL, OR ANY CIRCUMSTANCE IN WHICH THE FAILURE OF THE SOFTWARE COULD LEAD TO DEATH, PERSONAL INJURY, OR SEVERE PHYSICAL OR ENVIRONMENTAL DAMAGE. Notwithstanding the foregoing, you understand that the Software may include open source software and if there is any inconsistency between the terms and conditions of this EULA and the license of such open source software, those of the license of such open source software shall prevail.</p> <p>2. TITLE AND RIGHTS: All title, including but not limited to copyrights, in and to the Software and any copies thereof are owned by TDSC. All rights not expressly granted are reserved by TDSC. You may not remove or alter any copyright notices on the Software. You shall not modify, alter, disassemble, recompile or reverse engineer the Software. You shall not disclose, transfer and distribute the Software and TDSC's confidential information in relation to the Software to any third party without prior written consent of TDSC. Furthermore, you agree not to create derivative works based on the Software.</p>

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(A)ccept / (D)ecline

2. Accept the license agreement by entering “A” and press ‘Enter’.
3. During installation, installer will prompt for TSBDV REST Service configuration confirmation for RHEL7, Ubuntu14.2 and SLES12SP1 onwards.

For older Linux distributions, TSBDV REST service will not be configured and installer will automatically go to step 4.b.

#### **Output**

Do you want to install tsbdrv REST service [y/n] (default Y)?

- a. If you don’t want to configure service on the system, then type N and press ‘Enter’.

#### **Output**

Do you want to install tsbdrv REST service [y/n] (default Y)? N

- b. If you don’t want to configure service on the system, then type N and press ‘Enter’.

#### **Output**

Do you want to install tsbdrv REST service [y/n] (default Y)? Y

4. If TSBDVRD configuration is selected as 'Yes' then, installer will prompt for TSBDVR REST Service IP/Port/SSL Certificate configurations.

<b>Output</b>
<pre>::Select IP::   1) example.com   2) XXX.XXX.XXX.XXX   3) YYY.YYY.YYY.YYY   4) 127.0.0.1 Enter IP/Host name Selection [1-4]: 1  ::Default Port::   Port 59999 will be used.  Following SSL &lt;KEY&gt; and &lt;CERTIFICATE&gt; pair will be used:   KEY:          /opt/toshiba/tsbdrv/etc/ssl/tsbdrv.key   CERTIFICATE:  /opt/toshiba/tsbdrv/etc/ssl/tsbdrv.crt Do you want to use other SSL files [y/n] (default N)? N</pre>

5. If TSBDVRD configuration is selected as 'Yes' then, installer will also prompt for firewall exception configuration if following firewalls are installed and running.
- Firewalld

<b>Output</b>
<pre>Do you want to add port '59999' to 'firewalld' firewall exception (y/n)?</pre>

- UFW on Ubuntu

<b>Output</b>
<pre>Do you want to add port '59999' to 'ufw' firewall exception (y/n)?</pre>

- SuSEfirewall2

<b>Output</b>
<pre>Do you want to add port '59999' to 'SuSEfirewall2' firewall exception (y/n)?</pre>

Type **n** if you don't want to add port to firewall exception.

Type **y** if you want to add port to firewall exception.

If selected **y**, then port 59999 will be added firewall exception for `firewalld` and `ufw` by installer.

However, for SuSEfirewall2, installer cannot add firewall exception and hence following message will be displayed on console.

**Output**

```
Installer cannot configure port exception for SuSEfirewall2.  
Please add port '59999' to SuSEfirewall2 configuration file  
and restart the firewall.  
Note: Configuration FW_SERVICES_EXT_TCP in file  
'/etc/sysconfig/SuSEfirewall2'.  
e.g. FW_SERVICES_EXT_TCP="59999"
```

6. After successful installation, following message will be displayed on console
  - c. For RHEL7, Ubuntu14.2 and SLES12SP1 onwards (if TSBDRV REST service was configured).

**Output**

```
Service tsbdrvd started.  
  
tsbdrv installed successfully.
```

- d. For older Linux or for RHEL7, Ubuntu14.2 and SLES12SP1 onwards (if TSBDRV REST service was not configured).

**Output**

```
tsbdrv installed successfully.
```

**Note**

1. From TSBDRV 5.0 onwards, TSBDRV REST Service is installed and started during installation for RHEL7, Ubuntu14.2 and SLES12SP1 onwards.
2. TSBDRVD REST Service configuration/installation/start-up may fail in few cases (due to firewall restriction or network constraints).
3. If installation fails due to service failure on (standalone) systems then skip TSBDRV REST service installation. See point 2.a above in current section.
4. It is highly recommended to not change the port configuration during installation.
5. If you wish to change SSL certificates (and respective private key) then use working Key-Certificate pair only.
6. Installer can add firewall exception for firewalld, ufw and SuSEfirewall2 firewalls only.
7. TSBDRV REST Services are not supported for AArch64, hence step 3 onwards are not applicable.

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### 2.3.1 Linux Folder Tree Structure

This folder tree structure post installation is shown below.

Folder Name	Description
/opt/	Folder location where application is installed
/opt/toshiba/	Root node of folder tree structure is named as “toshiba”
/opt/toshiba/tsbdrv/	Application folder for tsbdrv specific files
/opt/toshiba/tsbdrv/bin/	This folder contains the Linux Toshiba TSBDRV executable binary
/opt/toshiba/tsbdrv/lib64/	This folder contains the Linux Toshiba TSBDRV library
/opt/toshiba/tsbdrv/scripts/	This folder contains python based wrapper scripts.
/opt/toshiba/tsbdrv/etc/	This folder contains TSBDRVD REST service configuration files. <b>This folder is not created for AArch64.</b>
/opt/toshiba/tsbdrv/etc/ssl/	This folder contains default SSL key/certificate pair for TSBDRVD REST service HTTP communication. <b>This folder is not created for AArch64.</b>
/var/log/toshiba/tsbdrv/	Folder location where command logs will be placed.
/var/lock/toshiba/tsbdrv/	Folder location where lock file will be created.

## 2.4 Setup using Zip Files

Zip files for supported platforms are named as follows

1. Linux 64-bit tarball: lin-toshiba-CC\_rel-tsbdrv-MM.mm.bbbb.x64.tgz
2. Windows 64-bit zip file: win-toshiba-CC\_rel-tsbdrv-MM.mm.bbbb.x64.zip

### 2.4.1 Untar and Execute on Linux

Steps to follow in command prompt with Administrative privileges (Super User)

Step 1: Copy tarball to directory

Step 2: Untar the file using 'tar' or suitable command.

E.g: `$ tar xvfz lin-toshiba-CC_rel-tsbdrv-MM.mm.bbbb.x64.tgz -touch`

Step 3: Change directory to 'tsbdrv'

`$cd tsbdrv`

Step 4: Export dynamic library load path

`$export LD_LIBRARY_PATH=$PWD`

Step 5: Execute 'tsbdrv'

`$ ./tsbdrv version`

#### 2.4.1.1 Folder Structure

Folder Name	Description
<extracted path>/tsbdrv/	Application folder for tsbdrv specific files
<extracted path>/tsbdrv/scripts/	This folder contains python based wrapper scripts.
/var/log/toshiba/tsbdrv/	Folder location where command logs will be placed.
/var/lock/toshiba/tsbdrv/	Folder location where lock file will be created.

### 2.4.2 Unzip and Execute on Windows

Steps to follow

Step 1: Copy Zip package to directory

Step 2: Unzip the file using any zip file software

Step 3: Open command prompt as administrator.

Step 4: Change directory to 'TSBDRV' in unzipped path.

`$cd TSBDRV`

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Step 5: Execute 'tsbdrv'.

```
$ .\tsbdrv.exe version
```

#### 2.4.2.1 Folder Structure

Folder Name	Description
<extracted path>\TSBDRV	Folder location where application and libraries are installed
<extracted path>\TSBDRV	Folder location where command logs will be placed.
%PROGRAMDATA%\TOSHIBA\TSBDRV\lock	Folder location where lock file will be created.

## 2.5 Setup using Standalone Files

Files for supported platforms are named as follows

1. Linux 64-bit tarball: lin-toshiba-standalone-CUSTOMER\_rel-tsbdrv- MM.mm.bbbb.x64.tgz
2. FreeBSD 64-bit tarball: freebsd-toshiba-standalone-01\_rel-tsbdrv- MM.mm.bbbb.x64.tgz

### 2.5.1 Untar and Execute

Steps to follow in command prompt with Administrative privileges (Super User)

Step 1: Copy tarball to directory

Step 2: Untar the file using 'tar' command or suitable command.

E.g: tar xvf lin-toshiba-standalone-CUSTOMER\_rel-tsbdrv- MM.mm.bbbb.x64.tgz

Step 3: Change directory to 'tsbdrv'.

```
$cd tsbdrv
```

Step 4: Execute 'tsbdrv'.

```
$./tsbdrv version
```

#### 2.5.1.1 Folder Structure

Folder Name	Description
<extracted path>/tsbdrv/	Application folder for tsbdrv specific files
/var/log/toshiba/tsbdrv/	Folder location where command logs will be placed.
/var/lock/toshiba/tsbdrv/	Folder location where lock file will be created.



## 2.6 Updating Software

### 2.6.1 Updating Software on Linux

#### 2.6.1.1 Updating from 5.X to 6.X

Upgrade from TSBDRV-5.X to TSBDRV-6.X will not prompt for TSBDRV REST service configuration.

1. Start the Installation on a command prompt with Administrative privileges (Super-User).

Command
<code>#./install-lin-toshiba-01_rel-tsbdrv-13.05a.7850.x64.bin</code>
Output
<pre>END-USER  LICENSE  AGREEMENT  FOR  TOSHIBA  Drive  Common  Tool (TSBDRV)  BY  CLICKING  "I  ACCEPT"  AT  THE  END  OF  THIS  AGREEMENT  OR  BY INSTALLING,  ACCESSING,  OR  USING  ANY  PART  OF  TOSHIBA  Drive Common  Tool  ("TSBDRV"),  YOU  ACKNOWLEDGE  THAT  YOU  HAVE  READ  AND UNDERSTOOD  THIS  AGREEMENT  AND  THAT  YOU  AGREE  TO  BE  BOUND LEGALLY  BY  THE  TERMS  AND  CONDITIONS.  IF  YOU  DO  NOT  AGREE  TO COMPLY  WITH  THE  TERMS  AND  CONDITIONS,  PLEASE  CLICK  "I  DECLINE." AND  DO  NOT  INSTALL  OR  USE  TSBDRV.  The  End-User  License  Agreement  For  TOSHIBA  Drive  Common  Tool ("EULA")  is  an  agreement  between  you  and  Toshiba  Electronic Devices  &amp;  Storage  Corporation  ("TDSC")  for  TSBDRV,  and  its associated  software  components,  media,  printed  materials,  and online  or  electronic  documentation  ("Software").  1.  GRANT  OF  LICENSE:  TDSC  grants  you  the  limited,  personal, revocable,  non-exclusive,  non-transferable  and  royalty-free license  (with  no  right  to  sublicense)  to  install  and  use  a single  copy  of  the  Software  on  your  computer  or  product.  THE SOFTWARE  IS  NOT  INTENDED  FOR  USE  IN  THE  OPERATION  OF  NUCLEAR FACILITIES,  AIRCRAFT  NAVIGATION  OR  COMMUNICATION  SYSTEMS,  AIR TRAFFIC  CONTROL,  OR  ANY  CIRCUMSTANCE  IN  WHICH  THE  FAILURE  OF THE  SOFTWARE  COULD  LEAD  TO  DEATH,  PERSONAL  INJURY,  OR  SEVERE PHYSICAL  OR  ENVIRONMENTAL  DAMAGE.  Notwithstanding  the foregoing,  you  understand  that  the  Software  may  include  open source  software  and  if  there  is  any  inconsistency  between  the terms  and  conditions  of  this  EULA  and  the  license  of  such  open source  software,  those  of  the  license  of  such  open  source software  shall  prevail.  2.  TITLE  AND  RIGHTS:  All  title,  including  but  not  limited  to copyrights,  in  and  to  the  Software  and  any  copies  thereof  are owned  by  TDSC.  All  rights  not  expressly  granted  are  reserved by  TDSC.  You  may  not  remove  or  alter  any  copyright  notices  on the  Software.  You  shall  not  modify,  alter,  disassemble, recompile  or  reverse  engineer  the  Software.  You  shall  not disclose,  transfer  and  distribute  the  Software  and  TDSC's confidential  information  in  relation  to  the  Software  to  any</pre>

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(A)ccept / (D)ecline

2. Accept the license agreement by entering "A".
3. After successful installation, following message will be displayed on console
  - a. For RHEL7, Ubuntu14.2 and SLES12SP1 onwards.

#### **Output**

```
Installer requires all the instances of tsbdrv stopped!
Stopping...
Service tsbdrv started.

tsbdrv updated successfully.
```

- b. For older Linux.

#### **Output**

```
tsbdrv updated successfully.
```

#### **Note**

Once this tool is installed, it won't be updated with same tool having different Customization Code (CC). You have to uninstall existing tool first and then install the tool with different Customization Code (CC).

### **2.6.1.2 Updating from 4.2 and earlier**

Upgrade from TSBDRV-4.x to TSBDRV-6.0 will work same as new installation.

See [Installation on Linux](#) for details.

## 2.7 Uninstalling the TOSHIBA TSBDREV Tool

### 2.7.1 Uninstalling tool from Linux

The TOSHIBA TSBDREV tool can be uninstalled by running the uninstall script from /opt/toshiba/tsbdrv/bin directory.

Command
# /opt/toshiba/tsbdrv/bin/uninstall.sh

1. Output for RHEL7, Ubuntu14.2 and SLES12SP1 onwards (if TSBDREV REST service was configured during installation)

Output
tsbdrv will be removed from the system. Are you sure to remove tsbdrv? [y/n] Y Stopping tsbdrvd server: [ OK ] tsbdrv removed from the system successfully.

2. Output on older Linux or for RHEL7, Ubuntu14.2 and SLES12SP1 onwards (if TSBDREV REST service was not configured during installation)

Output
tsbdrv will be removed from the system. Are you sure to remove tsbdrv? [y/n] Y tsbdrv removed successfully from the system.

**Note**

If TSBDREV REST Service was configured during installation then, same is stopped and removed during uninstall. Configuration removal window will appear on screen during uninstall.

### 3. Troubleshoot steps

#### 3.1 Ubuntu 22.04 Keyboard Issue

After logging to Ubuntu 22.04 setup as 'root' user, sometimes user input via keyboard becomes unresponsive. To fix it, execute below command from terminal.

```
ibus restart
```

## 4. Open Source Software

TSBDRV includes following open source code:

OSS Name	OSS Version	OSS Website	OSS License
rapidJson	1.0.2	<a href="https://rapidjson.org/">https://rapidjson.org/</a>	MIT License
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