

# Application Note

January 2016

## Install and Configure IBM ITDT-SE on Mac OS X for NEO Libraries



## Summary

This application note describes how to use IBM Tape Diagnostic Tool Standard Edition (ITDT-SE) on Mac OS X (10.10.3) attached via Thunderbolt connection to an ATTO ThunderLink SH 2068 SAS bridge to a NEOs StorageLoader. Although this document refers to NEOs StorageLoader with ATTO Thunderbolt connectivity, ITDT-SE works with all Overland Storage tape libraries and Fibre Channel or SAS host bus adapters.

## Introduction

This document describes how to extract and use ITDT-SE on Mac OS X environment. ITDT-SE is only used as a diagnostic test tool in order to collect logs or drive dumps, do firmware updates and general maintenance with IBM tape drives in Overland Storage libraries. It is not intended for backup and recovery operations.

This document makes reference to a MAC 10.10.3 with ITDT-SE v8.0.1 and a NEOs StorageLoader with an IBM LTO-6 SAS Tape Drive attached via Thunderbolt SAS Bridge to an ATTO ThunderLink SH2068.

ITDT-SE is designed to:

- Full Write test – write to end of media
- Perform a firmware update on tape drive
- System Test – which performs short test for compressible and no compressible data
- Basic device test
- Dump – pulls device logs from the tape drive
- Tape Usage – retrieve and display cartridge usage information
- Scan the system to discover all supported tape and library devices.
- Library Media Screening – Additional library test (only for NEO S-series libraries)

## Required Information, Tools, and Files

Before you begin these procedures, the following information is required.

## Prerequisites

- This document assumes that the reader is familiar with Mac and ITDT-SE. For more information on ITDT-SE or to download the latest version of ITDT-SE for Mac OS, refer to the following link.  
<http://www-01.ibm.com/support/docview.wss?uid=ssg1S4000662>
- This document assumes that the Overland NEO tape library has already been installed and configured. For more information about basic configuration of the tape library, please refer the *User Guide* that came with it.
- This document assumes the person using ITDT-SE with a NEO library is familiar with the ATTO Thunderlink product. Verify the appropriate ATTO drivers and ATTO ConfigTool is installed on the MAC OS. Additional information on this product can be found on ATTO's product site.  
<https://www.attotech.com/products/thunderbolt-desklink-devices/thunderlink>

## Versions

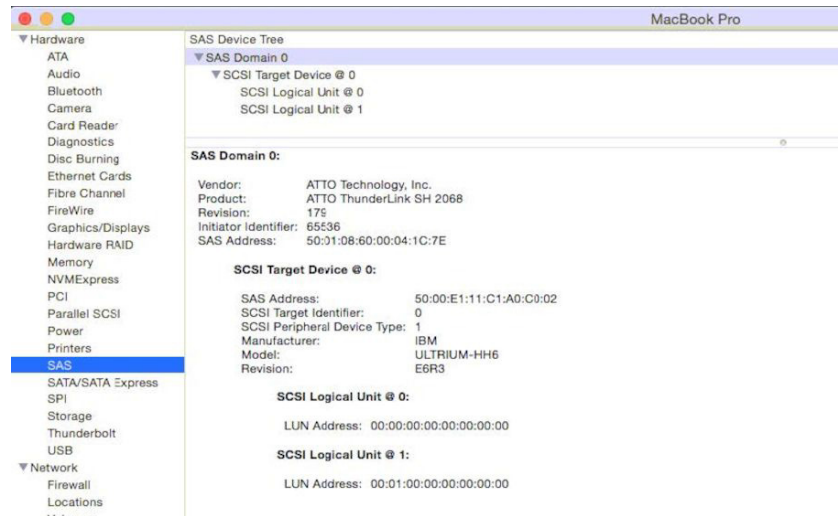
The following devices and version used in this document:

- NEOs StorageLoader firmware v4.93 / 2.50n
- One IBM ULTRIUM–HH6 SAS firmware vE6R3
- ITDT-SE v8.0.1 (MAC)
- MAC Version 10.10.3
- ATTO ThunderLink SH 2068 driver version 1.20
- ATTO ConfigTool version 4.20

## Discover NEO Devices on Mac

There are a few methods in order to verify that the devices are seen on the Mac system before using ITDT-SE. The three methods are using Mac System Profiler, ATTO ConfigTool and using the command line ioreg.

1. Navigate to System Profiler. Verify the devices under Hardware > SAS as shown here. This example shows a NEOs StorageLoader with one IBM LTO-6 tape drive.

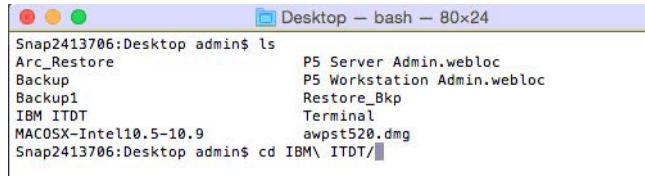




## Extract ITDT-SE Executable File

Use the following steps in order to extract the ITDT-SE executable file.

1. Create a temporary directory to copy the ITDT install file. Our example shows **IBM ITDT** in **/Users/admin/Desktop**.



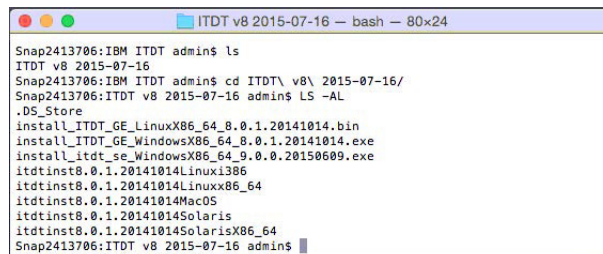
```

Desktop — bash — 80x24
Snap2413706:Desktop admin$ ls
Arc_Restore                P5 Server Admin.webloc
Backup                    P5 Workstation Admin.webloc
Backup1                    Restore_Bkp
IBM ITDT                  Terminal
MACOSX-Intel10.5-10.9     awpst520.dmg
Snap2413706:Desktop admin$ cd IBM\ ITDT/

```

2. Copy the installation file (**itdtinst8.0.1.20141014MacOS**) and paste into the temp directory:

**/Users/admin/Desktop/IBM ITDT**



```

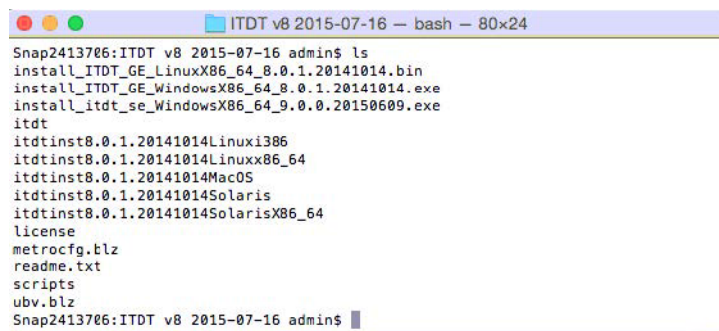
ITDT v8 2015-07-16 — bash — 80x24
Snap2413706:IBM ITDT admin$ ls
ITDT v8 2015-07-16
Snap2413706:IBM ITDT admin$ cd ITDT\ v8\ 2015-07-16/
Snap2413706:ITDT v8 2015-07-16 admin$ LS -AL
.DS_Store
install_ITDT_GE_LinuxX86_64_8.0.1.20141014.bin
install_ITDT_GE_WindowsX86_64_8.0.1.20141014.exe
install_itdt_se_WindowsX86_64_9.0.0.20150609.exe
itdtinst8.0.1.20141014LinuxI386
itdtinst8.0.1.20141014LinuxX86_64
itdtinst8.0.1.20141014MacOS
itdtinst8.0.1.20141014Solaris
itdtinst8.0.1.20141014SolarisX86_64
Snap2413706:ITDT v8 2015-07-16 admin$

```

3. Unzip the file by executing it. Type the following to extract the file:

**./itdtinst8.0.1.20141014MacOS**

```
Snap2413706:ITDT v8 2015-07-16 admin$ ./itdtinst8.0.1.20141014MacOS
```



```

ITDT v8 2015-07-16 — bash — 80x24
Snap2413706:ITDT v8 2015-07-16 admin$ ls
install_ITDT_GE_LinuxX86_64_8.0.1.20141014.bin
install_ITDT_GE_WindowsX86_64_8.0.1.20141014.exe
install_itdt_se_WindowsX86_64_9.0.0.20150609.exe
itdt
itdtinst8.0.1.20141014LinuxI386
itdtinst8.0.1.20141014LinuxX86_64
itdtinst8.0.1.20141014MacOS
itdtinst8.0.1.20141014Solaris
itdtinst8.0.1.20141014SolarisX86_64
license
metrocfg.blz
readme.txt
scripts
ubv.blz
Snap2413706:ITDT v8 2015-07-16 admin$

```

## 4. Start ITDT-SE by executing it.

```
/itdt
```

```
Snap2413706:ITDT v8 2015-07-16 admin$ ls
install_ITDT_GE_LinuxX86_64_8.0.1.20141014.bin
install_ITDT_GE_WindowsX86_64_8.0.1.20141014.exe
install_itdt_se_WindowsX86_64_9.0.0.20150609.exe
itdt
itdtinst8.0.1.20141014Linuxi386
itdtinst8.0.1.20141014Linuxx86_64
itdtinst8.0.1.20141014MacOS
itdtinst8.0.1.20141014Solaris
itdtinst8.0.1.20141014SolarisX86_64
license
metrocfg.blz
readme.txt
scripts
ubv.blz
Snap2413706:ITDT v8 2015-07-16 admin$ ./itdt
```

## 5. Enter 1 to get to the last page of the license agreement.

```
ITDT v8 2015-07-16 -- itdt -- 80x24
International License Agreement for Non-Warranted Programs

Part 1 - General Terms

BY DOWNLOADING, INSTALLING, COPYING, ACCESSING, CLICKING ON AN "ACCEPT"
BUTTON, OR OTHERWISE USING THE PROGRAM, LICENSEE AGREES TO THE TERMS OF THIS
AGREEMENT. IF YOU ARE ACCEPTING THESE TERMS ON BEHALF OF LICENSEE, YOU
REPRESENT AND WARRANT THAT YOU HAVE FULL AUTHORITY TO BIND LICENSEE TO THESE
TERMS. IF YOU DO NOT AGREE TO THESE TERMS,

* DO NOT DOWNLOAD, INSTALL, COPY, ACCESS, CLICK ON AN "ACCEPT" BUTTON, OR USE
THE PROGRAM; AND

* PROMPTLY RETURN THE UNUSED MEDIA AND DOCUMENTATION TO THE PARTY FROM WHOM
IT WAS OBTAINED FOR A REFUND OF THE AMOUNT PAID. IF THE PROGRAM WAS
DOWNLOADED, DESTROY ALL COPIES OF THE PROGRAM.

1. Definitions

"Authorized Use" - the specified level at which Licensee is authorized to
execute or run the Program. That level may be measured by number of users,

< [B] Back [Enter] Next [L] Last [Q] Quit > |
```

## 6. Enter i to accept the license agreement.

```
ITDT v8 2015-07-16 -- itdt -- 80x24
Licensee has done so.

L/N: L-TOSD-9F8EME
D/N: L-TOSD-9F8EME
P/N: L-TOSD-9F8EME

< [B] Back [I] I Agree [Q] Quit > |
```



## Scan Devices with ITDT-SE

ITDT-SE scans the local system for all supported tape and library devices that are attached to the system.

Before using ITDT-SE, please make sure of the following:

- All Backup Application services are stopped. For example, stop the backup jobs that are accessing the devices when using ITDT-SE, or if not sure, stop the entire backup application.
- When using ITDT-SE, please make sure only scratch tapes are available in the unit. Remove any tapes that cannot be overwritten.

1. When the following ITDT-SE menu appears, enter an **s** to scan and enter.

```

ITDT v8 2015-07-16 -- itdt -- 80x24

IBM Tape Diagnostic Tool Standard Edition - Version: 8.0.1.20141014

Entry Menu

[S] Scan for tape drives (Diagnostic/Maintenance Mode)
[U] Tapeutil (Expert Mode)
[A] Add Device Manually (Expert Mode)

[H] Help
[Q] Quit program

Notes:
- During a test, user data on the cartridge will be erased!
- Make sure no other program is accessing the devices used by ITDT!
- A device scan may take several minutes in some cases!

- Q + Enter will always close this program.
- H + Enter will display a Help page.

<[H] Help | [Q] Quit | Command > s

```

2. The devices will be listed in rows.

This example shows a NEOs StorageLoader with one LTO-6 tape device.

```

ITDT v8 2015-07-16 -- itdt -- 80x24

IBM Tape Diagnostic Tool Standard Edition - Device List

Host Bus ID LUN Model Serial Ucode Changer [#]
-----
0 0 0 0 ULTRIUM-HH6 11C1A400BF DBE5 4002671_LL0
1 0 0 0 1 FlexStor II 4002671_LL0 4.93
2
3
4
5
6
7
8
9
10
11

[S] Scan [T] Test [D] Dump [F] Firmware Update
[E] Encryption [W] Full Write [U] Tape Usage [O] Other...
[H] Help [V] Toggle View [M] Main Menu
<[Q] Quit | + | - | [N] Next | [P] Previous | Line # | Command >

```

- At the bottom of the menu, select the choices of commands or test to run. Press `o` in order to see additional tests.

```

ITDT v8 2015-07-16 -- itdt -- 80x24

IBM Tape Diagnostic Tool Standard Edition - Device List

Host Bus ID LUN Model Serial Ucode Changer [#]
-----
0 0 0 0 0 ULTRIUM-HH6 11C1A400BF DBE5 4002671_LL0
1 0 0 0 1 FlexStor II 4002671_LL0 4.93
2
3
4
5
6
7
8
9
10
11

[S] Scan [T] Test [D] Dump [F] Firmware Update
[E] Encryption [W] Full Write [U] Tape Usage [O] Other...
[H] Help [V] Toggle View [M] Main Menu
<[Q] Quit | + | - | [N] Next | [P] Previous | Line # | Command >
    
```

The following image shows the remaining **Other** tests.

```

ITDT v8 2015-07-16 -- itdt -- 80x24

IBM Tape Diagnostic Tool Standard Edition - Device List

Host Bus ID LUN Model Serial Ucode Changer [#]
-----
0 0 0 0 0 ULTRIUM-HH6 11C1A400BF DBE5 4002671_LL0
1 0 0 0 1 FlexStor II 4002671_LL0 4.93
2
3
4
5
6
7
8
9
10
11

[Y] sYstem Test [L] Library Test [I] Manual Inspect
[R] Return [C] Config. TCP/IP [M] Lib. Media Screening
[H] Help [V] Toggle View [K] Check LTFS Readiness
<[Q] Quit | + | - | [N] Next | [P] Previous | Line # | Command >
    
```



## Tape Drive Dump with ITDT-SE

When problems are encountered with the tape drive, you may be asked by Technical Support to pull a tape drive dump using ITDT-SE. The following procedure describes how to pull the tape drive dump files for Technical Support to analyze.

1. Select the device by entering the device number listed in the first column. The example shows the device 0 as the IBM LTO-6 tape device. Press **Enter** to continue on.

```

ITDT v8 2015-07-16 -- itdt -- 80x24

IBM Tape Diagnostic Tool Standard Edition - Device List

Host Bus ID LUN Model Serial Ucode Changer [#]
0 0 0 0 0 ULTRIUM-HH6 11C1A400BF D8E5 4002671_LL0
1 0 0 0 1 FlexStor II 4002671_LL0 4.93
2
3
4
5
6
7
8
9
10
11

[S] Scan [T] Test [D] Dump [F] Firmware Update
[E] Encryption [W] Full Write [U] Tape Usage [O] Other...
[H] Help [V] Toggle View [M] Main Menu
<[Q] Quit | + | - | [N] Next | [P] Previous | Line # | Command > 0

```

2. The device selected column will now show an **x**. To pull a tape drive dump, press **d** for dump and press **Enter**.

```

ITDT v8 2015-07-16 -- itdt -- 80x24

IBM Tape Diagnostic Tool Standard Edition - Device List

Host Bus ID LUN Model Serial Ucode Changer [#]
0 0 0 0 0 ULTRIUM-HH6 11C1A400BF D8E5 4002671_LL0 x
1 0 0 0 1 FlexStor II 4002671_LL0 4.93
2
3
4
5
6
7
8
9
10
11

[S] Scan [T] Test [D] Dump [F] Firmware Update
[E] Encryption [W] Full Write [U] Tape Usage [O] Other...
[H] Help [V] Toggle View [M] Main Menu
<[Q] Quit | + | - | [N] Next | [P] Previous | Line # | Command > d

```

- Wait while the dump is collected from the tape drive.

```

ITDT v8 2015-07-16 -- itdt -- 80x24

IBM Tape Diagnostic Tool Standard Edition - Dump

Model: | ULTRIUM-HH6 | Serial No: | 11C1A400BF |
-----|-----|-----|-----|
Host: | 0 | ID: | 0 | Microcode: | D8E5 |
-----|-----|-----|-----|
Bus: | 0 | LUN: | 0 | Changer: | DE64002671_LL0 |
-----|-----|-----|-----|

Status: | DRIVE DUMP |
-----|-----|

Dump ongoing - please wait...

Progress: |###|
-----|-----|

<[Q] Quit | Command >

```

The tape drive dump has completed.

```

ITDT v8 2015-07-16 -- itdt -- 80x24

IBM Tape Diagnostic Tool Standard Edition - Dump

Model: | ULTRIUM-HH6 | Serial No: | 11C1A400BF |
-----|-----|-----|-----|
Host: | 0 | ID: | 0 | Microcode: | D8E5 |
-----|-----|-----|-----|
Bus: | 0 | LUN: | 0 | Changer: | DE64002671_LL0 |
-----|-----|-----|-----|

Files: | 11C1A400BF-1068000316.003. | For Tape Drives:
      | 11C1A400BF-1068000316.003. | *.a - before "Force Dump"
      |                               | *.b - after "Force Dump"
-----|-----|-----|-----|
Log: | 11C1A400BF-1068000316.003. | Status: | PASSED |
-----|-----|-----|-----|

[R] Return to Device List

<[H] Help | [Q] Quit | Command >

```

- The logs are kept in the same directory that ITDT was originally copied to a new directory called **output**, contains the necessary tape drive dump files for Technical Support.

```

output -- bash -- 80x24

Snap2413706:ITDT v8 2015-07-16 admin$ cd output/
Snap2413706:output admin$ ls
11C1A400BF-10WT003403.a      11C1A400BF-10WT003403.blz
11C1A400BF-10WT003403.b      metro.log
Snap2413706:output admin$

```

## System Test with ITDT-SE

A scratch media is required in order to run the System Test. Scratch media is tape that doesn't contain critical data and can be overwritten. With this option, do not manually load the media into the drive, but rather, insert the scratch media into the Mailslot of the library or an available open cartridge slot.

1. From the ITDT SE menu, press **y** to execute the System Test.

```

IBM Tape Diagnostic Tool Standard Edition - Device List

  Host Bus ID LUN Model Serial Ucode Changer [#]
+-----+-----+-----+-----+-----+-----+-----+-----+
0 | 0 | 0 | 0 | 0 | ULTRIUM-HH6 | 11C1A400BF | D8E5 | 4002671_LL0 | X |
1 | 0 | 0 | 0 | 1 | FlexStor II | 4002671_LL0 | 4.93 | | |
2 | | | | | | | | | | |
3 | | | | | | | | | | |
4 | | | | | | | | | | |
5 | | | | | | | | | | |
6 | | | | | | | | | | |
7 | | | | | | | | | | |
8 | | | | | | | | | | |
9 | | | | | | | | | | |
10 | | | | | | | | | | |
11 | | | | | | | | | | |
+-----+-----+-----+-----+-----+-----+-----+

[Y] sYstem Test [L] Library Test [I] Manual Inspect
[R] Return [C] Config. TCP/IP [M] Lib. Media Screening
[H] Help [V] Toggle View [K] Check LTF5 Readiness
<[Q] Quit | + | - | [N] Next | [P] Previous | Line # | Command > y

```

2. Insert a scratch media into the Mailslot. When the following dialog window appears, press **Enter** to use the media located in the Mailslot.

```

IBM Tape Diagnostic Tool Standard Edition - System Test

Model Serial Ucode
+-----+-----+-----+
| ULTRIUM-HH6 | 11C1A400BF | D8E5 |
+-----+-----+-----+

Compressible Transfer Data
Size (KB) Size (M)
+-----+-----+-----+
| | | |
+-----+-----+-----+

Please insert tape
into the drive !

[Enter] OK
[C] Cancel

Remaining (KB)
+-----+
| |
+-----+

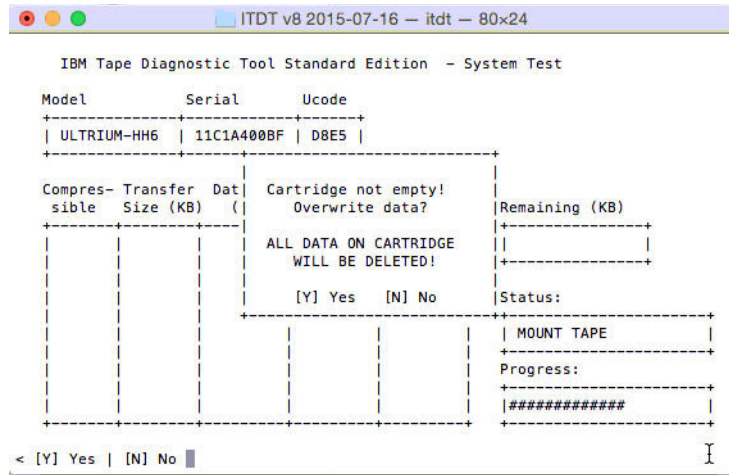
Status:
+-----+
| MOUNT TAPE |
+-----+

Progress:
+-----+
| # |
+-----+

< [Enter] OK | [C] Cancel >

```

- When the following warning dialog window appears, press **y** on the keyboard to confirm the overwrite of the data on cartridge.



- Wait while the ITDT-SE tests the drive using a compressed and non-compressed data test (4GB), writing to the cartridges using the tape drive.

