

OPTICAL DISC ARCHIVE DRIVE UNIT

TECHNICAL NOTE
Recommended Configuration for Connected Computers

ODS-D380U

ODS-D380F

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English

This document shows the recommended configuration for a computer connected to the ODS-D380U/F Optical Disc Archive Drive Unit. In order to maximize the performance of the ODS-D380U/F and achieve normal read/write operation, check each item and review the configuration environment of the computer as necessary. USB 3.0 and later standards have been incorporated into USB 3.2. In this document, SuperSpeed USB 10Gbps (USB 3.2) is referred to as USB 3.2 10Gbps, and SuperSpeed USB (USB 3.2) as USB 3.2 5Gbps.

Please refer to the Sony Creative Software site (<http://www.sonycreativesoftware.com/>) for the latest information.

Recommended Configuration of Computers Connected to the ODS-D380U

1. General Precautions When Using USB 3.2

Observe the following precautions when using USB 3.2.

- Do not insert a USB hub/selector/switch between drive unit and computer. (excluding USB hubs/selectors/switches designated by Sony that resolve compatibility problems)
- Use the USB cables supplied with the unit.
- On computers with multiple USB ports, the transfer rate may decrease if there are many other devices connected via USB.
- On computers with multiple USB ports, the transfer rate may vary depending on the port used.

2. USB Host Controllers for Connecting an ODS-D380U

To maximize the performance when retrieving from an ODC5500R (5.5 TB write-once cartridge), the USB port of the computer connecting to the ODS-D380U should satisfy the following requirements.

- Use a USB 3.2 10Gbps port. USB 3.2 5Gbps and USB 2.0 ports are not supported.
- On computers with multiple USB 3.2 10Gbps ports, assign preference to the ODS-D380U. Connect the mouse, keyboard, and other peripheral devices to USB 3.2 5Gbps or USB 2.0 ports.
- Select the latest generation host controller.

Notes

- The transfer rate of the host controller may not satisfy the ODS-D380U requirement, depending on the expansion board connected to the expansion slot.
- Compatibility problems with the ODS-D380U may occur, depending on the manufacturer and type of the host controller. (For details, see sections 4 and 5.)

Check Procedure

Check your computer configuration using the following procedure.

Check item	Section	Check point & solution
Check type of USB host controller of computer	3	Check for USB 3.2 10Gbps host controller. →If there is no USB 3.2 10Gbps host controller, use a computer with recommended chipset, or install a recommended USB 3.2 10Gbps expansion board.
Check chipset of computer	4, 5	Check for recommended chipset or compatible chipset. →If chipset is deprecated, use a computer with recommended chipset, or install a recommended USB 3.2 10Gbps expansion board. If chipset is compatible in an enabled C-state, enable the state required to satisfy the usage conditions.

You can check whether the USB connection is appropriate using the system check function of the Optical Disc Archive Utility. For details, refer to the Help for the Optical Disc Archive Utility.

3. Checking the USB Host Controller Type of Computers for Use

Check items ① and ② in the specifications documentation for your computer.

- ① Check “Interface,” “USB ports,” and similar items. Determine whether the USB host controller of the computer supports 5Gbps/10Gbps according to the description in the specifications.

Description in specifications	Meaning
Mentions both USB 3.0 and USB 3.1	USB 3.0: 5Gbps, USB 3.1: 10Gbps
Mentions USB 3.1 only	USB 3.1: 10Gbps
Mentions both USB 3.1 5Gbps and 10Gbps	Speed is as described
Mentions both USB 3.1 Gen 1 and USB 3.1 Gen 2	USB 3.1 Gen 1: 5Gbps, USB 3.1 Gen 2: 10Gbps

- ② Check the location of the USB 3.2 10Gbps ports. Connect the ODS-D380U to one of these ports.

If your computer is not equipped with a USB 3.2 10Gbps host controller, you will need to add a USB 3.2 10Gbps expansion board.

Note

USB 3.0 and USB 3.1 standards have been incorporated into the USB 3.2 standard, but note that most computers currently available may only refer to USB 3.0 and USB 3.1 in their specifications documentation.

4. Recommended Chipsets / Recommended USB 3.2 10Gbps Expansion Boards

To use the ODS-D380U, connect a computer with the recommended chipset below or use a recommended USB 3.2 10Gbps expansion board. If, after checking, the computer does not have the recommended chipset, prepare a computer with recommended chipset or add a recommended USB 3.2 10Gbps expansion board. On computers with a deprecated chipset, problems such as reduced transfer speed, drive units not visible from the computer, or incomplete writing may occur.

Windows

Recommended chipset (on-board chip)

- Intel® H370 Chipset
- Intel® Z390 Chipset

Recommended USB 3.2 10Gbps expansion board (chipset)

- Ableconn PU31-2C-2 (ASM2142)
- Kuroshiko USB3.1C-P2-PCIE (ASM2142)
- Sonnet USB3C-2PM-E (ASM1142)*
- Sonnet USB3C-4PM-E (ASM1142)*
- dodocool DC26 (ASM1142)*

* There may be a drop in readout transfer rate if using two or more ports simultaneously. Also, the SSD performance may affect the transfer rate.

Recommended model

- HP EliteDesk 800 G4 SF (Q370)
- HP EliteBook 830 G5/CT
Uninstall the “hp Sure Click” security function.
- DELL OptiPlex 7060 SFF (Q370)

Macintosh

Recommended model

- Mac mini Late 2018 (JHL7540/CM246)

Linux

Recommended chipset (on-board chip)

- Intel® B360 Chipset
- Intel® H370 Chipset

Recommended USB 3.2 10Gbps expansion board (chipset)

- Kuroshiko USB3.1C-P2-PCIE (ASM2142)

Note

Do not connector any other peripheral devices to the USB ports of the USB 3.0 hub.

5. Chipset Type Check Methods

(1) Searching on the website of the computer manufacturer

If you already possess a computer or are planning a computer purchase, you can check the chipset of the computer by checking items ① to ③.

- On the manufacturer’s website, check the “(Basic) Configuration” or “Specifications” of the desired model.
- Search the web for “pdf <PC manufacturer> <model name>” and check the specifications.
- For older models, check “Product Support” information for products by the computer manufacturer.

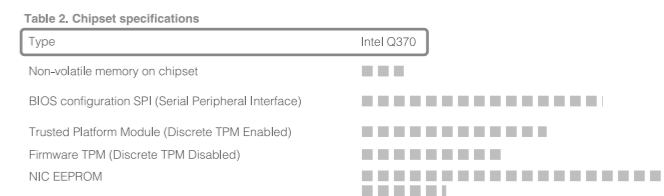
Examples:

The following images are reference web sites of each computer manufacturer.

Dell OptiPlex 7060 SFF

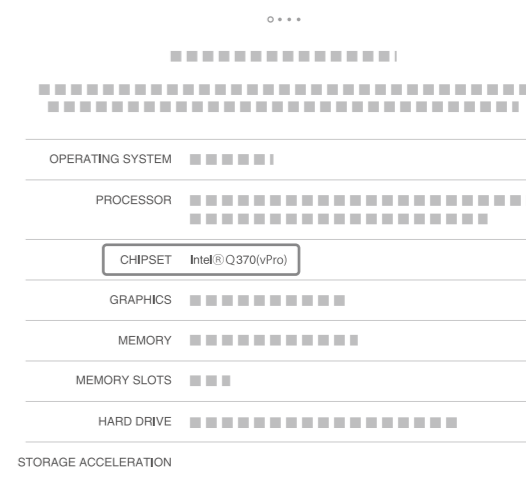
- Select [Support] → [Product Support] from the menu bar at the top of the official site.
- Enter “optiplex 7060” in the search window, and select “DOCUMENTATION” at the top of the search results.
- Click [View PDF] for “OptiPlex 7060 Small Form Factor Setup and specifications guide” in the “Manuals and Documents” section.
- Open the document to the “Chipset” section in the “System specifications” chapter.

Chipset



HP Elitedesk 800 G4 SF

- Select [Desktops] → [Tower] from the menu bar at the top of the official site.
- In the side menu, select [Business] in the “USE” category, and select [Small form factor] in the “FORM FACTOR” category.
- Scroll to find the Elitedesk 800 G4 SF, and click [Tech spec].



(2) Checking on the computer to be used

You can check the chipset of your computer using the following method.

Windows/Macintosh

Open Device Manager and check the devices.

Example: Windows 10

① Set Device Manager to display devices by type.

* Select [View]→[Devices by type].

② Expand “System devices” “PCI Express Root Complex” and other entries

③ Search for “chipset”.

In this example, we can see that “Intel 300 Series /Z390” is used.



Linux

Check the chipset using the following command from the console.

```
lspci | grep USB
```

Example:

```
>lspci | grep USB
00:1a.0 USB controller: Intel Corporation C600/X79 series chipset USB2
Enhanced Host Controller #2 (rev 05)
00:1d.0 USB controller: Intel Corporation C600/X79 series chipset USB2
Enhanced Host Controller #1 (rev 05)
08:00.0 USB controller: Texas Instruments Device 8241 (rev 02)
```

In this example, we can see that “Intel C600/X79” is used.

* Which is used, C600 or X79, depends on the computer.

Recommended Configuration for Computers Connected to ODS-D380F

If a recommended host bus dapter is not used or the maximum data transfer size is not optimized, then the transfer speed may be reduced, drive units may not be visible from the computer side, data writes may not be completed successfully, or other problems may occur.

1. Recommended host bus adapters

* Set the computer's power options to [High Performance].

Windows/Linux

- QLE2560/QLE2562 (QLogic 8Gbps Fibre Channel Host Bus Adapter)
- QLE2690/QLE2692 (QLogic 16Gbps Fibre Channel Host Bus Adapter)
- QLE2740/QLE2742 (QLogic 32Gbps Fibre Channel Host Bus Adapter)
- LPe12000/LPe12002 (Emulex 8Gbps Fibre Channel Host Bus Adapter)
- LPe31000/LPe31002 (Emulex 16Gbps Fibre Channel Host Bus Adapter)
- LPe32000/LPe32002 (Emulex 32Gbps Fibre Channel Host Bus Adapter)

2. Settings of recommended host adapters

To use Windows, be sure to set the maximum data transfer size of the recommended host bus adapter to 2MiB as shown below. This setting is not required for Linux.

Windows

Download the latest host bus adapter utility tool from the recommended host bus adapter manufacturer's website and install it on your computer. Examples of settings for some recommended host bus adapters are described below.

QLogic Windows SuperInstaller Version 11.00.12

Execute the “qlfcx64.exe” command line utility as shown below to set the maximum data transfer size of the host bus adapter to 2 MiB.

```
c:\>qlfcx64.exe -tsize /fc /set 2048
```

qlfcx64.exe is installed in the following location by default.

```
C:\Program Files\QLogic Corporation\SuperInstaller\Drivers\Win2K8\FC\x64\qlfcx64.exe
```

Emulex FC Driver for Windows Version 12.4.243.4-11

Launch the “OneCommand Manager” host bus adapter management utility, select the host bus adapter you want to configure, and set the following parameters to set the maximum data transfer size of the host bus adapter to 2 MiB.

Parameter	Value	
LimTransferSize	0	Set the value selected by the “ExtTransferSize” parameter to the maximum transfer size allowed by the driver (default is “0”).
ExtTransferSize	2	Set the maximum data transfer size (Units: MB).

You can check whether the Fibre Channel connection is appropriate using the system check function of the Optical Disc Archive Utility. For details, refer to the Help for the Optical Disc Archive Utility.

Data Handling and Storage

1. General Precautions Relating to Storage

Observe the following general precautions when using storage.

- For SSDs, the transfer rate may decrease when transferring tens of GB of data depending on the cache implementation.
- For HDDs, the transfer rate may decrease as the free space is consumed.

2. Precautions When Retrieving Using the ODS-D380U/F

Observe the following precautions relating to the retrieve destination storage to maximize ODS-D380U/F performance.

- Check that the free space is larger than the maximum file size on the retrieve destination storage.
 - * Specifically, when retrieving from a ODC5500R (5.5 TB write-once cartridge).
- Check that the output is stable at a transfer rate of 500 MB/sec.¹
 - * Transfer capacity of 100 GB to 500 GB. If the normal data block size is 30 GB or lower, this limit does not apply.

3. Recommended Storage Selection Criteria

The following devices and configuration criteria are recommended when selecting storage to satisfy the transfer rate (condition *1 above).

- Select SSD.
- Choose an SSD RAID configuration.
- Choose an HDD RAID configuration (RAID0/RAID5/RAID6, 4 to 6-drive configuration without parity drives).

4. Validated Storage

SSD:

- Samsung 860PRO
- Samsung 960PRO, 970PRO
- Western Digital WD Black series
- SanDisk Extreme Pro series

HDD RAID:

- HPE MSA2040

(2) ご使用中のコンピューターで確認する方法

お手元にあるコンピューターのチップセットは、以下の方法で確認できます。

Windows/Macintosh

デバイスマネージャを開いて確認します。

※以下は、Windows 10の場合

- デバイスマネージャの表示形式を[デバイス(種類別)]にします。 ※[表示]→[デバイス(種類別)]を選択
- “システムデバイス”“PCI Expressルートコンプレックス”などの項目を展開します。
- “chipset”という単語を探します。この例では、チップセットが“Intel 300 Series /Z390”であることが分かります。

 	
<div><ul style="list-style-type: none"> Intel(R) Core(TM) i5-8500 CPU @ 3.00GHz Intel(R) Core(TM) i5-8500 CPU @ 3.00GHz Intel(R) Core(TM) i5-8500 CPU @ 3.00GHz Intel(R) Core(TM) i5-8500 CPU @ 3.00GHz Intel(R) Core(TM) i5-8500 CPU @ 3.00GHz Intel(R) Core(TM) i5-8500 CPU @ 3.00GHz Intel(R) Power Engine Plug-in Microsoft Windows Management Interface for ACPI Microsoft Windows Management Interface for ACPI Microsoft Windows Management Interface for ACPI PCI Express ルート コンプレックス<ul style="list-style-type: none"> High Definition Audio コントローラー Intel(R) Serial IO GPIO Host Controller-INT3450 Intel(R) 300 Series Chipset Family LPC Controller (Z390) - A305 Intel(R) Ethernet Connection (7) I219-V Intel(R) Host Bridge/DRAM Registers - 3EC2 Intel(R) Management Engine Interface Intel(R) PCI Express Root Port #1 - A338 Intel(R) PCI Express Root Port #17 - A340 Intel(R) PCI Express Root Port #21 - A32C<ul style="list-style-type: none"> PCI Express 上位スイッチ ポート<ul style="list-style-type: none"> PCI Express 下位スイッチ ポート<ul style="list-style-type: none"> Thunderbolt(TM) Controller - 15EB PCI Express 下位スイッチ ポート PCI Express 下位スイッチ ポート<ul style="list-style-type: none"> Intel(R) USB 3.1 eXtensible Host Controller - 1.10 (Microsoft)<ul style="list-style-type: none"> USB ルート ハブ (USB 3.0) PCI Express 下位スイッチ ポート Intel(R) PCI Express Root Port #9 - A330 Intel(R) SMBus - A323</div>	

Linux

コンソールから、以下のコマンドを用いて確認できます。

```
lspci | grep USB
```

表示例

```
>lspci | grep USB
00:1a.0 USB controller: Intel Corporation C600/X79 series chipset
USB2 Enhanced Host Controller #2 (rev 05)
00:1d.0 USB controller: Intel Corporation C600/X79 series chipset
USB2 Enhanced Host Controller #1 (rev 05)
08:00.0 USB controller: Texas Instruments Device 8241 (rev 02)
```

この例では、チップセットがIntel C600/X79であることが分かります。
※C600とX79のどちらであるかはコンピューターに依存します。

ODS-D380Fを接続するコンピューターの推奨構成について

推奨ホストバスアダプターをご使用されない、またはホストバスアダプターの最大データ転送サイズを最適値に設定されない場合は、転送速度が低下したり、コンピューター側からドライブユニットが見えなくなったり、書き込みが正常に完了しないなどの不具合が生じることがあります。

- 推奨のホストバスアダプターについて**
コンピューターの電源オプションは[高パフォーマンス]に設定してください。

Windows/Linux：

- QLE2560/QLE2562（QLogic 8Gbps Fibre Channel Host Bus Adapter）
- QLE2690/QLE2692（QLogic 16Gbps Fibre Channel Host Bus Adapter）
- QLE2740/QLE2742（QLogic 32Gbps Fibre Channel Host Bus Adapter）
- LPe12000/LPe12002（Emulex 8Gbps Fibre Channel Host Bus Adapter）
- LPe31000/LPe31002（Emulex 16Gbps Fibre Channel Host Bus Adapter）
- LPe32000/LPe32002（Emulex 32Gbps Fibre Channel Host Bus Adapter）

2. 推奨のホストバスアダプターの設定について

Windowsをご使用の場合は、以下の設定例を参考に、推奨ホストバスアダプターの最大データ転送サイズを必ず2MiBに設定してください。Linuxに関しては特に設定を行う必要はありません。

Windows：
あらかじめ推奨ホストバスアダプターのメーカーのWebサイトで、最新のホストバスアダプターのユーティリティツールをダウンロードし、コンピューターにインストールしてください。
推奨ホストバスアダプターごとの設定例を以下に説明します。

QLogic Windows SuperInstaller Version 11.00.12

下記のようにコマンドラインユーティリティ qlfcx64.exeを実行して、ホストバスアダプターの最大データ転送サイズを2MiBに設定します。

```
c:>qlfcx64.exe -tsize /fc /set 2048
```

qlfcx64.exeは、デフォルトでは次の場所にインストールされています。
C:¥Program Files¥QLogic Corporation¥SuperInstaller¥Drivers
¥Win2K8¥FC¥x64¥qlfcx64.exe

Emulex FC Driver for Windows Version 12.4.243.4-11

ホストバスアダプター管理ユーティリティ OneCommand Managerを起動し、設定変更対象のホストバスアダプターを選択してから、以下の項目を設定してホストバスアダプターの最大データ転送サイズを2MiBにします。

パラメーター	設定値	
LimTransferSize	0	ExtTransferSizeパラメーターで選択した値を、ドライバーで許可される最大転送サイズにする(デフォルトは「0」)。
ExtTransferSize	2	最大データ転送サイズを指定する(単位：MB)。

Optical Disc Archive Utilityのシステムチェック機能を用いて、Fibre Channel接続が適切かどうかを確認できます。詳細はOptical Disc Archive Utilityのヘルプをご覧ください。

データを取り扱うストレージについて

1. ストレージに関する一般的な注意事項

ストレージのご使用においては、一般的に以下の注意事項にご配慮ください。
• SSDはキャッシュの実装形態により、数十GB以上のデータ転送時に、転送レートが低下することがある。

- HDDは、空き容量が減少するに従い、転送レートが低下することがある。

2. ODS-D380U/Fを用いてリトリブする際の注意事項

ODS-D380U/Fのパフォーマンスを最大限発揮させるためには、リトリブ先のストレージに関して、以下の注意事項にご配慮ください。
• リトリブ先のストレージに、最大ファイルサイズ以上の空き容量があること。 ※特に、ODC5500R（5.5TB ライトワンス型カートリッジ）からリトリブする場合。
• 500MB/secの転送レートが安定的に出ること。*1
※転送容量100GB～500GBの場合。通常取り扱うデータサイズが30GB未満の場合はこの限りではありません。

3. ストレージの推奨選定条件

上記*1を満たすためのストレージの選択・構成例は、以下の通りです。

- SSDを選択する。
- SSD RAID構成を採る。
- HDD RAID構成を採る(RAID0/RAID5/RAID6、パリティドライブ抜きで4～6台構成)。

4. 検証済みストレージ

SSD：

- Samsung社製860PRO
- Samsung社製960PRO、970PRO
- Western Digital社製WD Blackシリーズ
- SanDisk社製Extreme Proシリーズ

HDD RAID：

- HPE社製 MSA2040