



Recommended computer setup for Picea[®] Services

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1 Background for computer requirements

The amount of content in devices is increasing all the time. For example, there is already an Apple iPhone model available with 512 GB memory, Apple iPad Pro with 1024 GB memory and Samsung Galaxy S10+ with 1 TB memory. Device cameras are capturing video in e.g. 4K format, which will result in even bigger video file sizes.

Latest device models support USB 3.x technology, which improves content transfer speed between device and computer. We recommend connecting the device to computer's USB 3.x port to increase transfer speed and subsequently enhance customer experience.

We recommend using USB 3.x cables instead of USB 2.x.

2 PiceaServices Switch

2.1 Optimal computer for Windows

- Operating system: Windows 11 64 bit
- Memory (RAM): 8 GB or larger
- Disk: 1024 GB SSD (e.g. NVMe) disk or larger (Note! Inaccessible and encrypted temporary files are created to computer hard drive during switch operation). Note! An external USB 3.x hard drive (e.g. 2TB) can also be used. The recommended file system format is NTFS (also exFAT can be used).
 - *Clone:*
 - iOS cloning (iOS – iOS) requires the same amount of free hard drive space as the content amount in the source device.
 - Android cloning (Android – Android) does not require any additional free hard drive space.
 - *Switch:*
 - iOS to iOS transfer requires twice as much free hard drive space as the content amount in the source device.
 - If iOS device is either the source OR the target device, the same amount of free hard drive space is needed as the content amount in the iOS device.
 - Android to Android transfer does not require any additional free hard drive space.
 - For example, transfer from iPhone 8 256 GB (which is full of content) to another iPhone needs at least 500 GB free hard disk space.
 - *Lite Switch:*
 - Does not require any additional free hard drive space.
- USB ports:
 - At least two USB 3.x ports available for PiceaServices
 - If the external USB hub is used, it needs to be externally powered and with USB 3.x ports
- Display: Full HD resolution or higher
- Keyboard
- Mouse or trackpad
- Network connectivity through Wi-Fi or Ethernet

2.2 Optimal computer for macOS

- **Operating system:** macOS 15.0 Sequoia
- **See other requirements in chapter 2.1**

For PiceaServices Switch the speed is an essential factor and we recommend using USB 3.0/3.1 ports on the computer as well as USB 3.0/3.1 hubs.

USB hub with USB 3.0 connector (Startech part number ST7300USBME) allows connecting devices to PC using USB 3.0 connector:

<https://www.startech.com/en-us/cards-adapters/st7300usbme>

USB hub with USB 3.0 and USB-C connector (Belkin part number *F4U088*) allows connecting devices to PC with USB 3.0 connector. This hub works with PCs, which have only USB-C type connectors:

<http://www.belkin.com/us/F4U088/p/P-F4U088/>

3 PiceaServices Verify, Diagnostics, Eraser and Trade-In

3.1 Optimal computer for Windows

- Operating system: Windows 11 64 bit
- Memory: 8 GB or larger
- Disk: 256 GB disk or larger.
Note! An external USB 3.x hard drive can also be used. The recommended file system format is NTFS (also exFAT can be used).
- USB ports:
 - At least two USB 3.x ports available for PiceaServices
 - If the external USB hub is used, it needs to be externally powered and with USB 3.x ports
- Display: Full HD resolution or higher
- Keyboard
- Mouse or trackpad
- Network connectivity through Wi-Fi or Ethernet. Wi-Fi connection required for the Diagnostics Wi-Fi connection test case and for non-activated iOS devices automatic activation and setup.

3.2 Optimal computer for macOS

- Operating system: macOS 15.0 Sequoia
- See other requirements in chapter 3.1

3.3 Recommended USB hubs for PiceaServices

For PiceaServices products speed is an essential factor and we recommend using USB 3.0/3.1 ports on the computer as well as USB 3.0/3.1 hubs.

USB hub with USB 3.0 connector (Startech part number ST7300USBME) allows connecting devices to PC using USB 3.0 connector:

<https://www.startech.com/en-us/cards-adapters/st7300usbme>

USB hub with USB 3.0 and USB-C connector (Belkin part number *F4U088*) allows connecting devices to PC with USB 3.0 connector. This hub works with PCs, which have only USB-C type connectors:

<http://www.belkin.com/us/F4U088/p/P-F4U088/>

Bluetooth connectivity is required for Windows Phone 7, BlackBerry 10 and feature phones.

4 PiceaVolume

4.1 Recommended computer setup for PiceaVolume

- Desktop computer
- Operating system: Windows 11 Pro 64 bit
- Memory (RAM): 8 GB or larger
- CPU: i7 or higher (7th generation or newer)
- Internal Disk: 512GB SSD disk (e.g NVMe) or larger
- USB ports:
 - Four USB 3.x ports available for PiceaServices
 - External USB hub needs to have its own power supply
 - Thunderbolt port and USB hub provide even better performance.
- Display: Full HD resolution or higher
- Keyboard
- Mouse or trackpad
- Network connectivity through Wi-Fi or Ethernet. Wi-Fi connection required for the Diagnostics Wi-Fi connection test case and for non-activated iOS devices automatic activation and setup.

Example of a desktop USB port extension card:

StarTech 2 Port PCI Express (PCIe) SuperSpeed USB3.0 Card Adapter with LP4 Power (StarTech part number: *PEXUSB3S25*) allows connecting 2 USB hubs to PC at the same time.

<https://www.startech.com/Cards-Adapters/USB-3.0/Cards/2-port-PCI-Express-USB-3-Card~PEXUSB3S25>

4.2 Minimum requirement for computer setup for PiceaVolume

- Operating system: Windows 10 64 bit
- Memory: 4 GB
- Disk: 256 GB
- USB ports:
 - At least two USB 3.x ports available for PiceaServices
 - If the external USB hub is used, it needs to be externally powered and with USB 3.x ports
- Display: Full HD resolution
- Keyboard
- Mouse or trackpad
- Network connectivity through Wi-Fi or Ethernet. Wi-Fi connection required for the Diagnostics Wi-Fi connection test case and for non-activated iOS devices automatic activation and setup.

4.3 PiceaVolume processing capacity

4.3.1 Processing capacity

PiceaServices Volume supports processing many devices at the same time. For example, with four 20-port USB hubs, 80 devices can be processed simultaneously. When processing multiple devices,

recommendation is to use high quality externally powered USB hub(s). Note that USB hubs must not be cascaded.

4.3.2 USB Standard

Universal Serial Bus (USB) is an industry standard that establishes specifications for cables and connectors and protocols for connection, communication and power supply between computers, peripheral devices and other computers.

Windows itself does not limit how many devices can be connected at the same time. The supported maximum number of devices connected simultaneously is defined by a USB host controller and a USB driver version in your system.

USB standard defines maximum of 127 devices per one USB controller and there can be several USB controllers in the PC.

4.4 Recommended USB hubs for PiceaVolume

Recommended USB hubs:

StarTech Industrial 7 Port USB 3.0 Hub (StarTech part number: ST7300USBME) allows erasing 7 devices at the same time.

<https://www.startech.com/en-us/cards-adapters/st7300usbme>

Cambrionix Supersync15 15 PORTS | USB 3.2 | USB 3.2 HOST PORT 5GBPS | 2.1A (10W) PER PORT.

<https://www.cambrionix.com/products/industrial-usb-hub-supersync15>

Cambrionix 16 ports | Thunderbolt™ 3 | USB 3.2 | 40Gbps | 2.4A (12W) | Rackmount & Desktop | Charge & Sync

<https://www.cambrionix.com/products/thundersync3-16-industrial-usb-hub>

Sipolar A-223, 20-port USB 3.0 USB Hub

http://www.sipolar.com/page172.html?product_id=166

4.5 Recommended NFC tags for Android devices' automatic activation feature

Automatic Device Activation for Android requires a NFC tag. Non-activated devices can be automatically activated, and USB debugging enabled with the NFC tag. These tags need to be prepared before the Volume product is taken into use.

Same NFC tags can also be used when performing Diagnostics NFC test (for both Android and iOS devices).

NFC tags needs to follow the specifications:

- Type: Type 2 NFC tag (most popular type of NFC tags at the moment).

- Chip: NTAG216 (This chip type has enough memory to use for Automatic Device Activation).
- Tag needs to support reading and writing.

Note: Most of the NFC tags perform poorly when placed on the metal surface. If the Volume station is built on a metal surface tablet we recommend using on-metal NFC tags for best reliability.

<https://nfctagify.com>

4.6 Recommended Bar code readers

Custom field information can be filled in manually or by reading with a bar code reader.

Recommended bar code readers:

- Datalogic QuickScan QD2430
- TaoTronics bar code scanner

In case of any questions, please contact Piceasoft support, e-mail: support@piceasoft.com

5 Supported operating systems

5.1 Supported Windows operating system versions

PiceaServices supports following Windows operating system versions:

- Windows 11 64 bit
- Windows 10 64 bit

Recommendation is to install all available updates from Microsoft and to keep the operating system up-to-date.

Windows 10 S operating system version from Microsoft is not supported. Windows 10 S is targeted for educational users and doesn't support regular Windows applications, for example PiceaServices.

Windows 10 S allows software installation only from Microsoft Store.

Virtual environments/machines are not supported by PiceaServices.

5.2 Supported macOS operating system versions

- 15.0 Sequoia
- 14.0 Sonoma
- 13.0 Ventura
- 12.0 Monterey

Note: PiceaVolume is not supported in macOS

6 Internet connectivity requirements

PiceaServices requires connectivity for following servers and ports to support all use cases (Switch, Verify, Trade-In, Diagnostics, Eraser, Volume).

EU

- bootstrap.piceasoft.com (port 443)
- services.piceasoft.com (port 443)
- spds.piceasoft.com (port 443)
- cd.piceasoft.com (port 443)
- api.piceasoft.com (port 443)

Hosts above are using dynamic IP addresses because of the elastic load balancing. If client system cannot work with dynamic IP addresses, system is able to fall back to use static IP addresses. In this case the following IP addresses need to be allowed in firewalls in order to fully support our services:

- 185.6.180.157
- 185.6.183.21
- 185.6.180.234
- 185.6.183.73

All connectivity to above servers goes to port 443 (https).

For Apple iOS device erasing (PiceaEraser and PiceaVolume) and software updates (PiceaDiagnostics) connectivity to following server is needed:

- gs.apple.com

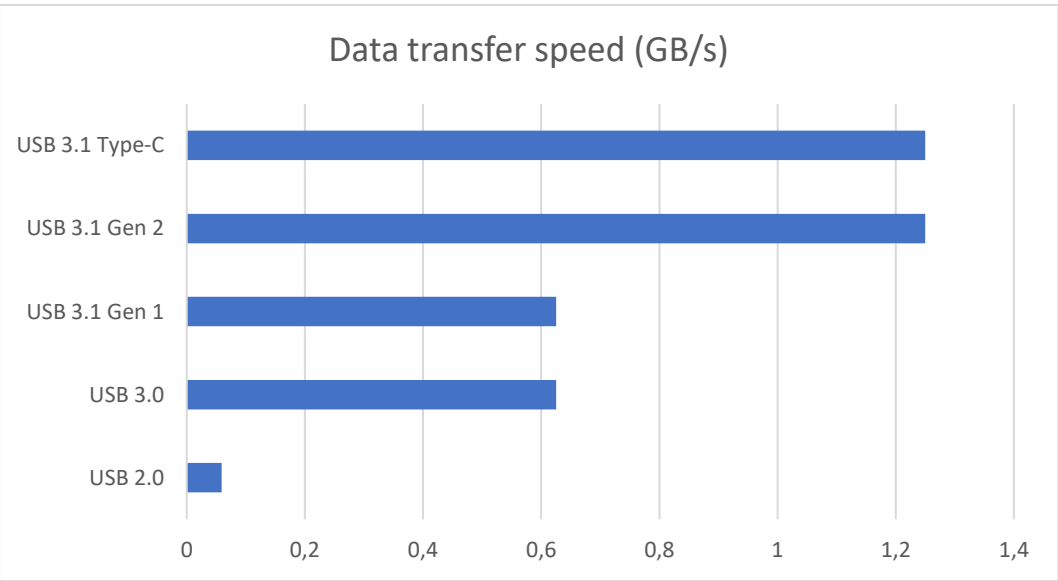
Connectivity to Apple servers goes to port 443 (https) and to port 80 (http).

7 USB Theoretical Data Transfer Speed

Theoretical speeds of different USB modes are listed in the table below. Actual transfer speed varies depending on content type (e.g. contacts, photos, or videos), device performance, type of memory used in device (internal memory, memory card), etc.

To achieve the highest possible transfer speeds all links in the chain must support the latest technology, starting from computers, device, cables and USB ports.

USB 2.0	0,059
USB 3.0	0,625
USB 3.1 Gen 1	0,625
USB 3.1 Gen 2	1,25
USB 3.1 Type-C	1,25
USB 3.2	2,4



Theoretical data transfer speeds are for reference only; actual data transfer speeds may vary.