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AnywhereUSB Windows Driver Release Notes

AnywhereUSB Gen 2

Version 3.99 (December 04, 2019)

INTRODUCTION

This is a production release of the AnywhereUSB Generation 2 Windows Driver.

SUPPORTED Products

- AnywhereUSB Gen 2 Windows Driver for 32-bit operating systems
- AnywhereUSB Gen 2 Windows Driver for 64-bit operating systems

SUPPORTED Operating Systems

- Windows 7
- Windows 8
- Windows 8.1
- Windows 10
- Server 2008-R2
- Server 2012
- Server 2012-R2
- Server 2016
- Server 2019

KNOWN ISSUES

- The Belkin USB 2.0 4-port mobile-powered hub model F5U404BLK sometimes fails to enumerate when connected to AnywhereUSB.

UPDATE BEST PRACTICES

Digi recommends the following best practices:

1. Uninstall the existing driver package via Add and Remove Hardware
2. Install the new Windows driver package.

TECHNICAL SUPPORT

Get the help you need via our Technical Support team and online resources. Digi offers multiple support levels and professional services to meet your needs. All Digi customers have access to product documentation, firmware, drivers, and knowledge base and peer-to-peer support forums.

Visit us at <https://www.digi.com/support> to find out more.

CHANGE LOG

VERSION 3.99 December 4, 2019

NEW FEATURES

None

ENHANCEMENTS

1. AwUsbApi.dll is now multi-thread safe. This means that library functions can be called concurrently from different Windows threads.

SECURITY FIXES

None

BUG FIXES

1. With Windows 10 builds 1903 and 1908, the host computer would lose connectivity on reboot. This issue was determined to be due to the system network driver not being available at the time the AnywhereUSB system driver started. The “Digi AnywhereUSB Network Service” has been changed so that it works around this problem by disabling and re-enabling the “Network Attached USB Enumerator”. Note that this requires that the Startup Type of this service be configured for “Automatic” (which is the default).

NOTE: The Microsoft-certified AnywhereUSB device drivers have not changed since v3.95 and will still show up with a version number of 3.95.

2. AwUsbApi.dll AwUsbGetConnectionStatus function incorrectly reported AWUSB_STATUS_IN_USE instead of AWUSB_STATUS_CONNECTED when the host itself was connected to an AnywhereUSB hub.

VERSION 3.96 February 2019

1. The Windows Installer and the AnywhereUSB Configuration Utility are signed by Digi International to eliminate UAC (User Account Control) warning messages about unknown publisher.
2. For customers using encrypted AnywhereUSB connections, the encryption service will now use certificates from either the Windows Local Machine Trusted Root CA store or the Windows Local Machine Intermediate CA store for authentication server certificates. In the previous 3.95 release, the encryption service only used the Trusted Root CA store.

VERSION 3.95 April 2018

1. Several USB devices (e.g. Dediprog SF100 and Silicon Labs UART) fail to enumerate over a high latency WAN link. Fixed by setting ionhub service registry DWORD variable FastStartHub to 1. This variable is off (0) by default.

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\ionhub]
    "FastStartHub"=dword:00000001
```

(JIRA AWUSB-537)
2. AnywhereUSB client driver awvusb.sys blue-screens when connecting to an AnywhereUSB hub. Happens only with XenServer and XenCenter VM's. Fixed. (JIRA AWUSB-550)
3. AnywhereUSB driver installer does not support upgrades. Installer now blocks attempts to upgrade over a previous installation. Previous installation must be uninstalled first. You may be prompted to reboot the computer. (JIRA AWUSB-438)
4. Users can now import CA certificates to the Windows Certificate Store to authenticate server certificates. The CA certificate must be installed on the "Local Computer" in the Trusted Root Certification Authorities store. (JIRA AWUSB-539)
1. AwUsbGetConnectionStatus did not handle groups correctly. It also incorrectly reported AWUSB_STATUS_IN_USE instead of AWUSB_STATUS_CONNECTED for host currently connected to local machine. Fixed. JIRA AWUSB-492.
2. On rare occasions the encryption service has stopped and forced users to restart it. It will now automatically restart. (JIRA AWUSB-513)
3. The encryption service now logs critical events which can be viewed from the Windows Event Viewer System log. (JIRA AWUSB-514)

VERSION 3.91 September 2017

1. Client to hub connections with lengthy establishment times could lead to a blue screen if prematurely disconnected by a user. Fixed. (JIRA AWUSB-421)
2. Fixed memory leak in encryption service. (JIRA AWUSB-451)
3. Disconnecting an AnywhereUSB hub connected to an Axis T8311 joystick caused a blue screen. Fixed. (JIRA AWUSB-392)

VERSION 3.90.223 June 2017

1. TLS v1.2 and SHA-2 (SHA-256) support. This only affects "Encrypted AnywhereUSB".

SHA-2 (SHA-256) certificates can now be used for authentication. Note that the certificate must be signed using 2048-bit RSA encryption. Also, SHA-1 based certificates can still be used.

Note:

TLS v1.2 and SHA-2 support require AnywhereUSB firmware to be updated to at least rev N1 (1.93). It still works with older firmware (starting with rev L v1.80) by "falling back" to TLS 1.0.

2. Users can specify a certificate "folder" instead of a certificate file when setting up "Encrypted AnywhereUSB" connections. You can specify it from the AnywhereUSB Configuration Utility (AwUsbCfg.exe) or the console application (AwConsole.exe) just as you specify a file.

Please note - to use a folder, each certificate must be renamed after the subject hash. Suppose you had a folder named c:\my-certs with two certificates - CertA.crt and CertB.crt. For example, to rename CertA.crt:

- a. Download an OpenSSL installer for Windows (version >= 1.0 since pre-1.0 versions use an older hash which will not work with AnywhereUSB).
- b. Open a command prompt from your certificate folder (c:\my-certs)
- c. Create a subject hash:

```
c:\my-certs> openssl x509 -hash -in CertA.crt -noout
```

It outputs an 8-digit hash (e.g. bc35a2e5)

- d. Rename (or copy) your certificate file with the hash as its base and the zero character as its extension:

```
c:\my-certs> copy CertA.crt bc35a2e5.0
```

VERSION 3.90 January 2017

1. Support encryption in AnywhereUSB Programming API, AwUsbApi.dll.
2. Workaround for Error Code 38. When all of the AnywhereUSB hubs are disconnected, the device manager unloads the ionhub.sys and awvusb.sys drivers, and several outstanding references to the driver objects persist and block it from being removed from memory. A subsequent attempt to connect to an AnywhereUSB hub will fail with an Error Code 38 and require a reboot in order to recover.

To work-around this failure (most likely caused by intrusive third-party software) you must set these two variables to 1:

```
[HKLM\System\CurrentControlSet\Services\AwVusb]
```

```
"DoNotUnload" = dword:1
```

```
[HKLM\System\CurrentControlSet\Services\IonHub]
```

```
"DoNotUnload" = dword:1
```

Note: This work-around is disabled by default.

VERSION 3.82 May 2016

1. Fix IOCTL Vulnerability - "Secunia advisory SA68000". (JIRA AWUSB-295)
2. An unusually long network delay could lead to a BSOD. Fixed. (JIRA AWUSB-259)
3. Fix Handle leak in Encryption Service. (JIRA AWUSB-310)

VERSION 3.80 July 2015

1. Installer did not remove pre-InstallShield drivers (such as 3.60) and led to customer complaints. Fixed.
2. Configuration Utility was not remembering group assignment after disconnecting as it had done in 3.60. Fixed.
3. Added support in AwConsole for encrypted connections.

VERSION 3.71 Jan 2015

1. OpenSSL encrypted USB traffic support (AES-128 encryption only). Firmware version 1.81 and later is required.
2. Optional "tunneling" of TCP connections over a single TCP connection between the host and the AnywhereUSB remote hub to eliminate network disconnects due to inactivity. Note that tunneling is enabled automatically when data encryption is turned on. Firmware version 1.80 and later is required.
3. New installer. Uninstalls will be done conventionally from Programs and Features instead of from the Configuration Utility. However the configuration utility must be used to

uninstall an older version if you are upgrading. Note that the new installer copies the driver files to C:\Program Files\Digi\AnywhereUSB by default instead of c:\AnywhereUSB.

4. The hub driver would sometimes unload with pending network I/O resulting in a blue screen. Fixed.
5. This release no longer supports signed drivers for Windows XP, Server 2003, and Server 2008.

VERSION 3.60 May 2014

1. Low and Full Speed devices which are attached to AnywhereUSB via an external USB 2.0 hub did not enumerate. Fixed. (JIRA AWUSB-77)
2. AwUsbView did not show device speeds correctly. Fixed. (JIRA AWUSB-54)
3. Add Multi-Host support to AwUsbApi DLL. (JIRA AWUSB-65)
4. If a USB string contained zero as a character, AnywhereUSB would incorrectly treat it as an invalid string. Fixed.
5. Removed Reboot and Configure commands from AwConsole (the console configuration app). (JIRA AWUSB-80)
6. Added work-around for Microsoft Windows 8 / Server 2012 bug which kept USB Mass Storages devices from working. (JIRA AWUSB-77)
7. Fix bug with MultiTT (Multi Transaction Translator) external hub. (JIRA AWUSB-87)
8. UnInstaller failed on Windows 8 because of a deprecated registry key. Fixed. (JIRA AWUSB-88)
9. UnInstaller failed to bring up log in Windows 8 and Server 2012. Fixed. (JIRA AWUSB-88)
10. When certain devices are removed, awvusbd.sys was causing a BSOD. Fixed. (JIRA AWUSB-86)
11. Removed firmware and configuration app for legacy AnywhereUSB/5 devices. They will no longer be supported going forward.

VERSION 3.51 January 2013

1. Fix critical memory leak in awusbsys driver.
2. If you put awusbsys and awvusbd under Driver Verifier, it would cause a blue-screen because of the DV filter. Fixed.
3. The "X" icon at the top-right now closes the AWUSB Configuration Utility. It used to minimize it to the System Tray.
4. The Connection List now has Group Number field. This was added to support connectivity to MHC (Multi-Host Connections) capable AnywhereUSB hubs that couldn't be discovered.
5. Event Logging section has been removed from File / Preferences window. Digi tech support will provide specific logging methods for troubleshooting if needed.
6. Event Log button, which was only for the legacy AnywhereUSB/5, has been removed. Digi tech support will provide specific logging methods for troubleshooting if needed.
7. The AnywhereUSB Configuration Utility executable and the three AnywhereUSB drivers (.sys files) all share the same version numbers now.
8. The Configure button is now only used to configure Group Numbers for 2nd generation models which are running v1.38 (or newer) firmware. Network configuration and Friendly Name changes are no longer supported with the Configure button. Use the Device Discovery Utility or the AnywhereUSB Web UI to make network configuration changes. Use the AnywhereUSB Web UI to make Friendly Name changes.

VERSION 3.50 October 2012

1. In rare circumstances, the endpoint receiver handler locks up when it receives a partial message from TDI. Rebooting the host was the only way to recover from this in a MultiHost environment. Fixed.
2. Added a MultiString registry variable, "SkipMsOsDescrDevList", which can be used to define problematic USB devices which fail enumeration if they receive a Get String Descriptor request for the Microsoft OS Device Descriptor.
3. AwUsbCfg.exe - Add Group Number field to Connection List Dialog. This only affects users who have to connect to a hub on a different subnet.

VERSION 3.30 February 2012

1. Updated driver to use Microsoft's new value of USBD_STATUS_CANCELED. Using the old value caused some devices to hang.
2. Initialize the wValue field of the setup packet. This fixed support for Aladin EToken.
3. A device with a very long USB serial number string could cause a blue screen. Fixed.
4. IonHub ignored IOCTL_INTERNAL_USB_CYCLE_PORT. Fixed. Some USB functional drivers depend on this IOCTL.
5. If a functional driver used the WdfDeviceAssignS0IdleSettings/IdleUsbSelectiveSuspend method for its device, it failed because IonHub reported that the device could wake from PowerDeviceD3. It (ionhub.sys) has been fixed by reporting PowerDeviceD2 in DeviceWake. This fixes a problem seen with Texas Instruments umpusbvista.sys functional driver for its 3410 USB to serial converter.
6. A column in Configuration Utility that was used to display the address of the host in the Host to group assignments was too narrow for an IP address of 12 digits. This caused a line wrap in the Host Column and all subsequent group assignments were displayed off by one.