Release Notes

BTW 6.1.0.1504 SDK

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Proprietary Information

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Compatibility

This section discusses the compatibility of applications produced using the SDK when deployed against Broadcom's various WIDCOMM BTW Bluetooth software products. BTW refers to Broadcom's WIDCOMM Bluetooth software products for Windows PCs. Currently, there are two major BTW products - Broadcom's Bluetooth Software for Windows, and Broadcom's Vista Profile Pack. The latest SDK release is compatible with both BTW products.

Broadcom's Bluetooth Software for Windows refers to all versions of the Broadcom/WIDCOMM Bluetooth Stack software. Previous releases are identified by version as BTW 1.x, 3.x, and 4.x. Current versions are referred to as BTW 5, and are identified by version as 5.x.x.x. Broadcom's Vista Profile Pack is a version of the Broadcom/WIDCOMM Bluetooth software that runs on the Microsoft Bluetooth stack. It is referred to as BTW 6, and is identifiable by version as 6.x.x.x.

Additionally, there is Broadcom's Vista Audio Pack. This product is identified by version as 5.2.x.x. SDK compatibility with BTW versions 5.2.x.x is limited, as this product supports audio profiles only. Contact Broadcom Technical Support directly at http://www.broadcom.com/products/bluetooth_support.php for information on SDK and Vista Audio Pack compatibility.

Compatibility with BTW 5, Bluetooth Software for Windows

BTW and SDK software versions are designed to be forward- and backward-compatible with all combinations of SDK and BTW 5 software, where both components are version 1.4.2.10 SP5 or greater. However, changes in BTW 5 stack software have created some limitations to compatibility.

Specifically, the following compatibility limitations exist on BTW 5 deployments:

- In SDK applications built from SDK releases prior to version 6.1.0.1502, SCO/eSCO audio connections can be established, but the audio device is never enabled on the system and so the audio stream is not available. This impacts BTW 5 deployments on 5.1 versions 5.1.0.3400 and greater, and all 5.5 versions. This issue was fixed in the 6.1.0.1502 SDK release.
- SDK applications built from SDK releases prior to version 6.1.0.1501 cannot read Service Discovery Records on all BTW 5.5 versions. This issue was resolved in 6.1.0.1501 SDK release.
- SDK applications built from SDK releases prior to 6.1.0.1504 had various results and failures using the CBtIf::Bond() method for pairing when deployed on Bluetooth 2.1 SSP capable platforms (all BTW 5.5 deployments, and Vista deployments with SP1 and Wireless Feature Pack, or SP2). These issues are fixed in SDK version 6.1.0.1504. Note that the Bond() API will now function correctly on all deployments where 1 or both entities being paired support Bluetooth 2.0 or less – if both entities support Bluetooth 2.1, the Legacy Bond() method cannot work. For this reason, the Bond() API is deprecated, and developers are encourage to migrate their applications to using the new BondEx() method, designed to handle all supported pairing scenarios.

For these reasons, Broadcom cannot guarantee full forward compatibility for applications built with previous versions of the SDK. Broadcom recommends recompiling applications with the 6.1.0.1504 version of the SDK to ensure forward and backward compatibility with all BTW 5 stack versions.

All of the SDK APIs and classes are fully supported in Bluetooth Software for Windows deployments, subject to documented deprecations and with the exceptions described below in "Compatibility and New Features".

Compatibility with BTW 6, Vista Profile Pack

SDK version 6.1.0.1504 is fully forward and backward compatible with all versions of Vista Profile Pack (BTW 6). BTW 6 compatibility was first introduced in SDK version 6.1.0.1501. Applications built with SDK versions prior to 6.1.0.1501 are only compatible with BTW versions prior to BTW 6, whereas applications built with SDK version 6.1.0.1501 or greater are forward and backward compatible with all supported BTW versions, including BTW 6.

Vista Profile Pack runs on Microsoft's Bluetooth stack. As a result, some SDK features, APIs, and classes may not be fully supported in a particular BTW 6 version. See the "BTW 6 Vista Profile Pack Limitations"

section in this document, and consult the latest SDK Release Notes for up to date SDK and BTW 6 API and class support details, available at http://www.broadcom.com/products/bluetooth_support.php.

Compatibility and Visual Studio 2005 Support

If an SDK application is built using Microsoft Visual Studio 2005, the application must be prepared to redistribute the Broadcom and the Microsoft runtime and interface library files to target platforms when appropriate. See the SDK Programmer's Guide, Section 3 – "Build Environments" for information on redistribution requirements.

Compatibility and New Features

When compatible BTW and SDK versions (as discussed earlier) are used together, the following apply:

- Applications built using an SDK version older than the BTW software version on which the application runs will run properly but may not be able to take advantage of newer features added in the more recent BTW software version.

- Applications built using an SDK version newer than the BTW software version on which the application runs will not run properly if it depends on newer features added in the more recent SDK version.

Changes in the SDK software generally consist of additions, such as new functions or new codes appended to enumerated constant lists. Such changes are documented in the SDK Release Notes for the version to which the change applies. In addition, concise comments in the affected SDK header file identify changes and specify the BTW and SDK versions in which the change(s) occur.

Changes from 6.1.0.1502

These Release Notes document the changes in the SDK from the previous SDK release, version 6.1.0.1502. For information on possible porting requirements when migrating your application from SDK versions previous to 6.1.0.1502, refer to the Release Notes for those versions, available at: http://www.broadcom.com/products/bluetooth_support.php. There were significant changes in the 6.1.0.1501 SDK release that may impact developers, particularly the new CSdpService::Commit() method requirement, documented in that version of the Release Notes; the 6.1.0.1502 SDK release also contained developer impact changes, particularly the introduction of the CL2CapIf::AssignPsmEx() method and deprecation of the CL2CapIf::AssignPsm() method.

The 6.1.0.1504 release is intended primarily as a maintenance release to address pairing problems with the CBtIf::Bond() method on BT 2.1 SSP capable platforms. The Bond() API has been fixed to allow it to function on 2.1 SSP capable platforms, but only if the pairing operation involves at least 1 entity that does not support 2.1 SSP pairing methods. As such, for applications created using previous 6.1 versions of the SDK, there are no developer changes required in order to compile the application with the new SDK version to take advantage of the fixes to the Bond() method, if the application will only ever target devices that do not support BT 2.1 SSP pairing methods.

However, as future devices will most likely all support BT 2.1 SSP pairing methods, a new CBtIf::BondEx() method has been introduced to handle 2.1 SSP pairing, including Legacy pin code pairing. The original Bond() method is therefore now deprecated, and all developers are encouraged to migrate their applications to the new BondEx() method, including use of the related new BondReply() method.

New in this version:

APIs:

`CBtIf::BondEx()`	- Developer Impact – new function (see above)
`CBtIf::BondReply()`	- Developer Impact – new function (see above)
`CBtIf::Bond()`	- Developer Impact – deprecated

BTW 6 Vista Profile Pack Limitations:

Limitations apply to the 6.1.0.1504 SDK release when applications are deployed against Vista Profile Pack BTW 6 target systems (systems running Microsoft Bluetooth stacks). Some classes and APIs are either currently not supported or are only supported with limited functionality under those deployments. Some of the limitations vary depending on the BTW 6 major version number, 6.0.x.x, 6.1.x.x, or 6.2.x.x currently.

This list of limitations may change as more functionality becomes available through the stack and SDK for these deployments. Check http://www.broadcom.com/products/bluetooth_support.php for updates to these Release Notes.

Classes:

- CL2CapConn and CL2CapIF are not supported in 6.0, but are supported in 6.1 and greater.
- CDunClient, CLapClient, CSppClient, and CSppServer are not supported in any 6.x version.

Sample apps:

- BlueComChat will not work on any 6.x version.
- BluePrint HCRP print profile will not work on 6.0 PP, but will work on 6.1 and greater.
- BlueTime will not work on 6.0, but will work on 6.1 and greater.
- BlueAudio only works for SCO on 6.0. 6.1 and greater support both SCO and eSCO.

APIs:

- CRfCommPort::OnEventReceived only reports a limited subset of events in all 6.x versions: RXFLAG, TXEMPTY, TXCHAR, CONNECTED_RFCOMM, CONNECT_ERR

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- GetConnectionStats (all classes where present) do not support the RSSI data field in 6.x versions.
- SetEScoMode (all classes where present) supported in 6.1 and greater, not supported in 6.0.
- The following APIs are not supported on any 6.x version:
    - SetLinkSupervisionTimeout (all classes where present)
    - ReadEScoLinkData, ChangeEScoLinkParms, EScoConnRsp (all classes where present)
    - CL2CapConn:
        - Reconfigure
        - OnConnectPendingReceived
        - OnCongestionStatus
    - CBtIf:
        - ReadLinkMode
        - SendVendorSpecificHcicmd
        - SetSniffMode
        - CancelSniffMode
        - IsRemoteDevicePresent
        - GetLocalServiceName
        - GetNextLocalServiceName
        - CreateCOMPortAssociation
        - RemoveCOMPortAssociation
        - ReadCOMPortAssociation
    - CRfCommPort:
        - SetFlowEnabled
        - SetModemSignal
        - GetModemStatus
        - SendError
        - Purge

Resolved Issues

BLTH00150656
SDK fixed PIN Bond will not work as expected with Secure Simple Pairing on Broadcom stack.

Release Note:
Fixed existing Bond() method to allow 2.1 SSP Legacy pairing to work. Bond() can only work if at least 1 pairing entity does not support 2.1 SSP pairing methods. Bond() now deprecated, use BondEx() instead.

BLTH00151098
Need to remove dependency on Microsoft GUID definitions in SDK library. SDK apps unnecessarily required to link using Microsoft Platform SDK.

Release Note:
Removed dependency on Microsoft Platform SDK lib from Retail SDK.

BLTH00151342
New SDK function for 2.1 bonding support for Broadcom stack.

Release Note:
Added CBtIf::BondEx to support 2.0 and 2.1 SSP pairing, and sample code in BlueTime.

BLTH00151620
Need to add SSP support to the SDK for Microsoft 2.1 Vista deployments.

Release Note:
Added support for Microsoft WFP SSP pairing methods Legacy, Numeric Compare, and Passkey, as well as the ability to invoke the native stack UI. Support added to BlueTime to demonstrate new BondEx and BondReply APIs.

BLTH00151945
SDK fixed PIN Bond will not work as expected with Secure Simple Pairing on Vista.

Release Note:
Changed legacy Bond() method to be able to do SSP pairing for Legacy only on Vista. Bond() can only work if at least 1 pairing entity does not support 2.1 SSP pairing methods. Bond() now deprecated, use BondEx() instead.

BLTH00153764
Failures in new Bond/BondEx logic.

Release Note:
Fixed crash with Legacy Bond() pairing from 2.1 Vista to other 2.1 device. Fixed BondEx failure from Vista 2.0. Fixed erroneous report of failed Bond on Vista 2.0.

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BLTH00153807
Update BTW SDK Programmer's Guide with new BondEx function.

Release Note:
Added documentation for new BondEx() and BondReply() functions, deprecated Bond() function.

Known Issues

BLTH00051402
OBEX header manipulation results in memory leaks. SDK applications experiencing memory leaks if the application performs operations on a CObexHeaders object received via a callback.
Workaround: Do not perform manipulations on received CObexHeaders object to turn around and resend, instead, copy object to local storage and return from callback.

BLTH00052086
CL2CapConn::Reconfigure only affects MTU (BTW).

BLTH00052416
Sample apps demonstrate CBtIf object usage badly. Only 1 CBtIf object should be instantiated.

BLTH00071273
With BlueAudio, users cannot read the eSCO parameters correctly after adjustment.

BLTH00077280
BlueObex fails with new app param overflow logic. Unlimited number of Application Parameters now allowed, changed from 3 previously, so old check for expected failure after adding 4th now does not fail.

BLTH00080426
Audio gateway pops "no device" warning bubble on audio events even when SDK SCO connected

BLTH00087672
SDK CPrintClient uses internal CBtIf, conflicts with app object if exists

BLTH00087685
SPP print sessions from SDK leave some printers in bad state.

BLTH00087689
CHeadphoneClient GetConnectionStatistics only returns bConnected properly, no statistics.

BLTH00093909
BlueHeadphone and BlueAudio must pair with headset before able to connect on Vista.

BLTH00094318
CBtIf::Role_Switch always returns TRUE even if Role Switch fails.

BLTH00096952
BlueObex connection disconnect automatically after 3 minutes.

BLTH00115574
SDK classes need more thread protection. L2CAP, RFCOMM, and CBtIf classes can cause crashes if objects deleted while callbacks firing.

BLTH00128125
Sample applications should disallow unsupported operations based on platform.

BLTH00122904
SDK Programmer's Guide references Link mode definitions in wrong file (BtIfDefinitions.h, actually in BtIfClasses.h).

BLTH00126896
Can not read esco Param on Client or Server

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BLTH00127218
SDK Sample apps do not always clean up service records on exit.
Workaround: Always Stop server sessions before closing app.

BLTH00127221
SDK Sample apps should cleanly do successive client and server sessions without requiring app restart.
Workaround: Launch separate executable instances for each client or server session.

BLTH00127395
Blue Headphone returns no services found if already connected.
Workaround: check if connected to remote already before trying to discover A2DP service record.

BLTH00129615
BlueTime: Selecting OK before service is detected on the client hangs the sample app.
Workaround: Do not select OK until service is shown in dialog.

BLTH00136479
SDK Service Discovery performed twice unnecessarily on BTW 6

BLTH00157205
BlueTime can crash if Bond window closed while Bond operation still active.
Workaround: Do not close Bond dialog window while Bond operations are in progress.

BLTH00157212
BlueTime can crash if Inquiry window closed while Inquiry results still being processed
Workaround: Do not close Inquiry window while Inquiry results still being processed.