

Padus® Foundation Class™

Disc recording toolkit for Windows® operating systems

Overview

With the recent advent of low cost Compact Disc (CD) recording hardware and media, along with the hype of Digital Versatile Disc (DVD) products, many new opportunities for disc recording have arisen. CDs have been a low cost, universal moderate-capacity medium for personal storage and digital publishing; while the benefits of DVD have become globally obvious through the entertainment industry. This new standard brings up to 4.7 gigabytes (9.4GB on double-sided) of data on one disc. Encoding standards have moved this large amount of data into the realm of audio and video. Until recently, output to CD was a separate function. Now developers want output to CD and DVD as a standard and integrated part of many applications. While the incorporation of an output to optical discs is a clearly desirable option for many diverse applications, the difficulty of programming these functions has itself become a new obstacle. By utilizing the already available Padus Foundation Class, the obstacle is no longer in the way.

The Padus Foundation Class for the Windows® line of operating systems is a software development toolkit for all types of CD/DVD reading and recording. By using the Applications Programming Interface (API) of the PFC, software developers can easily incorporate sophisticated optical disc recording technology in software or hardware products. The PFC allows developers to satisfy a product's internal CD/DVD recording needs quickly and to get to market faster with an optical recording-enabled product. There is no need to spend time to master the complexities of the real time CD/DVD recording process because PFC correctly handles these complexities. Programmers also can forgo the investment of supporting an ever-expanding list of hundreds of available drives -- so they can spend development time on the larger project at hand, where their expertise is required.

Feature List

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- Pure C/C++ object-oriented environment with no Win32 UI
- Support for Windows® 95/98/Me/NT/2000/XP
- Independent ASPI layer
- Includes several sample applications (with source code) that illustrate the most common CD/DVD tasks
- Full 32-bit multi-thread and multitasking implementation
- Operates asynchronously with the ability to write multiple tasks at the same time
- Small footprint (the whole toolkit is contained in one single DLL of ~1MB)
- Consistent programming interface to real and virtual source and destination devices
- High speed pre-mastering engine, compatible with the most recent CD/DVD speeds
- CD writing methods: Track-At-Once, Session-At-Once, Disc-At-Once, RAW Disc-At-Once (with full PQ/R-W sub-code support and the ability to burn multiple sessions at once)
- DVD writing methods: Session-At-Once, Disc-At-Once
- CD file systems supported: ISO-9660, Joliet, UDF, Bridge (any combination of the above)
- DVD file systems supported: ISO-9660, UDF, Bridge (any combination of the above)
- CD file system extensions supported: XA / Bridge , El Torito (bootable), Apple hybrid
- DVD file system extensions supported: El Torito (bootable), Apple hybrid
- CD formats supported: CD-DA, CD+G, CD-ROM, CD-XA, CD+ (Enhanced CD), Mixed Mode, VideoCD, Super VideoCD, PhotoCD, Multi-session CD
- DVD formats supported: DVD-ROM, DVD-Video, DVD-Audio
- Video Recording for real-time and incremental DVD writing
- Reads and writes CD/DVD images in raw and .CDI formats



- CD-TEXT (read and write)
- CDDB (on-the-fly conversion to and from CD-TEXT, ID3 tags, and Windows Media tags)
- Multiple indexes with variable gaps and hi-speed transitions search
- High speed CD-DA ripping with multiple jitter correction and re-synchronization algorithms
- ISRC and UPC
- Low level algorithms for software ECC/EDC encoding and scrambling and full P-W sub-code generation
- Support for CD+G (Karaoke) encoding and decoding
- Includes on-the-fly MP3/WAV/Windows Media audio to CD-DA conversion and vice-versa.
- Optionally supplies software-generated ECC/EDC while writing in raw mode
- Bit-by-bit comparison of the source and destination contents through a verification process
- Evaluates system throughput for successful CD recording through a test process
- Support for all CD-R, CD-RW, DVD-RAM, DVD±R, and DVD±RW drives currently available (SCSI and ATAPI)
- Full support for IEEE-1394 (Firewire) and USB protocols
- Support for buffer under-run prevention technologies including: BURN-Proof™, JustLink™, PowerBurn™, SafeBurn™, and Seamless Link
- Support for optimized write strategies including: PoweRec™ and PoweRec II™
- Support for high quality CD-DA mastering technologies including: AudioMASTER™, AudioMASTER HQ™, and VariRec™
- Support for simultaneous recording to multiple CD-R, CD-RW, DVD-RAM, DVD±R, and DVD±RW drives
- Support for CD/DVD autoloaders and jukeboxes
- Support for CD/DVD label printers

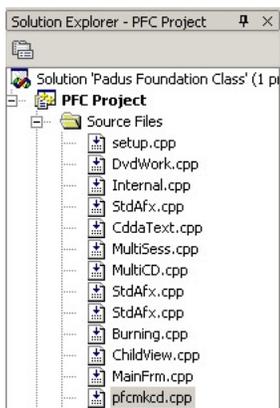
Developer Relations

Assists by Padus engineers

Our expert engineering staff is available to work with our customers and -- upon request -- develop new features, components or custom interfaces to considerably ease the integration of our toolkit. To obtain additional information about the Padus Foundation Class, including on what kind of assistance the engineers can provide after an agreement is signed, please call or e-mail Sales.

Clean, structured code

The source code contained in the Padus Foundation Class is well structured and organized. Any software developer can sit in front of the code for the first time and immediately have a general idea of how it all comes together.



All of the header, resource, and source files are shipped with pre-existing solution files for Microsoft® Visual Studio® 6 and Visual Studio®.net.

```

Cdx.h | Cdp.h | ChildView.cpp | MultiCD.cpp | MainFrm.cpp | pfcmkcd.cpp | RawStream.cpp | CddaText.cpp | DvdWork.cpp | Internal
CPfcmkcdApp
  BOOL CPfcmkcdApp::InitInstance()...
  // CPfcmkcdApp message handlers
  int CPfcmkcdApp::ExitInstance()
  {
    // TODO: Add your specialized code here and/or call the base class

    // ** Start PFC stuff **
    // Delete PFC device manager: this must be done only once per application
    delete pciDevMgr;
    delete pciLog;
    // ** End PFC stuff **

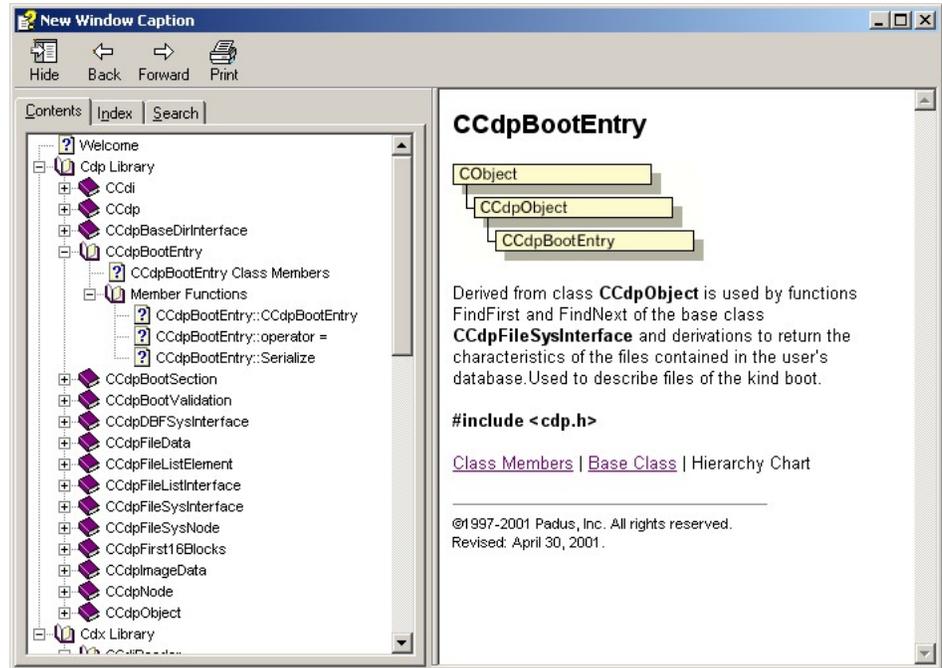
    return CWinApp::ExitInstance();
  }
  // CAboutDlg dialog used for App About
  class CAboutDlg : public CDialog
  {

```

One of the many strengths the Padus Foundation Class has to offer is great code. Clear comments and generous spacing provide any C++ developer with a place to dive right in.

Documentation for all classes and functions

A compiled help file (.CHM) is bundled with all variations of the Padus Foundation Class. Each library contains a list of each class member and member functions. Each class member contains a list of every data member, construction, operation, and operator, while each member function contains a list of every parameter, remark, or return value. All elements contain descriptions and references to other elements.



The included compiled help file (.CHM) contains descriptions and references to every line of code within the Padus Foundation Class.

Sample toolkit available for download

A free version of the Padus Foundation Class is available upon request for evaluation only. While this version is limited to 1x recording, it is fully-functional and clearly demonstrates the capabilities of the PFC. This demo version cannot be used for any commercial purposes, but can be used for test development of customizations of Padus architectures. To obtain additional information on obtaining the evaluation version, please contact our sales department.

Licensing and Pricing

The Padus Foundation Class is available now in any one of the following licensing deals:

- PFC Standard CD edition (up to 2 CD-R/RW drives without autoloader support). US \$50/unit with 100 prepaid licenses. Alternatively, a flat OEM licensing that would allow you to ship an unlimited amount of license is US \$30,000 for the first year and \$20,000 for the following years.

- PFC Professional CD edition (up to 32 CD-R/RW drives with autoloader support). US \$100/unit with 100 prepaid licenses. Alternatively, a flat OEM licensing that would allow you to ship an unlimited amount of license is US \$50,000 for the first year and \$40,000 for the following years.

- PFC Standard CD/DVD edition (up to 2 CD-R/RW and DVD-R/RW drives without autoloader support). US \$100/unit with 100 prepaid licenses. Alternatively, a flat OEM licensing that would allow you to ship an unlimited amount of license is US \$50,000 for the first year and \$40,000 for the following years.

- PFC Professional CD/DVD edition (up to 32 CD-R/RW and DVD-R/RW drives with autoloader support). US \$150/unit with 100 prepaid licenses. Alternatively, a flat OEM licensing that would allow you to ship an unlimited amount of license is US \$70,000 for the first year and \$60,000 for the following years.

The above pricing includes free, unlimited engineering support for as long as you license the product. There are no other fees.

Additional Information

Any additional or updated information on the Padus Foundation Class and its offerings are available at the Padus, Inc. website:

www.padus.com

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