

Novell Developer Kit

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GETTING STARTED WITH NETWARE®
CROSS-PLATFORM LIBRARIES FOR
C



Novell®

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About This Guide

This guide lists general information needed to begin development using Novell® cross-platform libraries for C. It covers the following topics:

- [Section 1.1, “Cross-Platform Libraries,” on page 11](#)
- [Section 1.2, “Windows 95 and Windows 98 Client Development Setup,” on page 12](#)
- [Section 1.3, “Windows NT Client Development Setup,” on page 13](#)
- [Section 1.4, “Reserving Services and Names,” on page 14](#)
- [Section 1.5, “How To Get Assistance,” on page 14](#)

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation.

Documentation Updates

For the most recent version of this guide, see [NLM and NetWare Libraries for C \(including CLIB and XPlat\)](http://developer.novell.com/ndk/clib.htm) (<http://developer.novell.com/ndk/clib.htm>)

Additional Information

For information about other CLib and XPlat interfaces, see the following guides:

- [NLM Development Concepts, Tools, and Functions](http://developer.novell.com/ndk/doc/clib/ndev_enu/data/hqgkbkjr.html) (http://developer.novell.com/ndk/doc/clib/ndev_enu/data/hqgkbkjr.html)
- [Single and Intra-File Services](http://developer.novell.com/ndk/doc/clib/sngl_enu/data/h68b1qom.html) (http://developer.novell.com/ndk/doc/clib/sngl_enu/data/h68b1qom.html)
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- [Connection, Message, and NCP Extensions](http://developer.novell.com/ndk/doc/clib/cmgxenu/data/hvxfva0i.html) (<http://developer.novell.com/ndk/doc/clib/cmgxenu/data/hvxfva0i.html>)
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- Sample Code (http://developer.novell.com/ndk/doc/clib/code_enu/data/hwtnc7wc.html)
- Client Management (http://developer.novell.com/ndk/doc/clib/clnt_enu/data/he77rked.html)
- Bindery Management (http://developer.novell.com/ndk/doc/clib/bind_enu/data/h9qzn7u5.html)

For CLib source code projects, visit [Forge](http://forge.novell.com) (<http://forge.novell.com>).

For help with CLib and XPlat problems or questions, visit the [NLM and NetWare Libraries for C \(including CLIB and XPlat\) Developer Support Forums](http://developer.novell.com/ndk/devforums.htm) (<http://developer.novell.com/ndk/devforums.htm>). There are two for NLM development (XPlat and CLib) and one for Windows XPlat development.

Documentation Conventions

In this documentation, a greater-than symbol (>) is used to separate actions within a step and items within a cross-reference path.

A trademark symbol (®, ™, etc.) denotes a Novell trademark. An asterisk (*) denotes a third-party trademark.

Getting Started

This documentation is designed to help you start using the NetWare® cross-platform functions by providing the following information:

- Cross-platform NetWare libraries
- NetWare clients
- reserving services, names, and numbers
- getting assistance from Novell and other developers with your interests and considerable experience

1.1 Cross-Platform Libraries

NOTE: While most cross-platform functions can be called to access remote 3.x servers, they are supported only on local 4.x, 5.x, and 6.x NetWare servers.

The following table is a list of the NetWare libraries that are provided by Novell®. This reference is given to help you decide which libraries to link into your code.

IMPORTANT: There are three libraries that should always be linked into your code. They are:

CAL*.*
CLX*.*
LOC*.*

Library File	Description
AUD*.*	Auditing library
CAL*.*	NetWare Calls library-link in always
CLNWINTH.DLL	Support library-do not link
CLX*.*	Client library-link in always
LOC*.*	Localization library-link in always
NET*.*	NDS library

. represents the following library files:

Library File	Description
NLM32.IMP	Link file for the NLM platform
NLM32.NLM	Module file for NLM platform source code (32 bit)
WIN32.LIB	Import library file for Windows NT, Windows 95, and Windows 98 source code (32 bit)

Library File	Description
WIN32.DLL	Dynamic link library file for Windows NT, Windows 95, and Windows 98 source code (32 bit)

1.2 Windows 95 and Windows 98 Client Development Setup

In the following table:

- The "Compiler" column lists compilers that have Novell provided libraries. These compilers can be used on the Windows 95 and Windows 98 Clients.
- The "Library Directory" column identifies the directory where the library and include files for the specific compiler are located.
- The "#define Variable" column specifies the variables that must be defined for the libraries to be used. The variables help define the data types in the ntypes.h header file which allows the code to be platform independent.

Compiler	Library Directory	#define Variable
Borland* C++ (V 4.5 or above)	\NWSDK\LIB\WIN32\BORLAND	N_PLAT_MSW
	\NWSDK\INCLUDE	N_ARCH_32
Microsoft* Visual C++* (V 2.0 or above)	\NWSDK\LIB\WIN32\MSCVC	N_PLAT_MSW
	\NWSDK\INCLUDE	N_ARCH_32

The following is a list of the Windows 95* and Windows 98* Client libraries. These library files are found in different directories, depending on the compiler being used. These Windows 95 and Windows 98 Client libraries are dynamic.

For a description of these libraries, see "Cross-Platform Libraries" above.

The library (.LIB) files for the Borland compiler are found in \NWSDK\LIB\WIN32\BORLAND.

The library (.LIB) files for the Microsoft compiler are found in \NWSDK\LIB\WIN32\MSCVC.

AUDWIN32.LIB
CALWIN32.LIB
CLXWIN32.LIB
LOCWIN32.LIB
NETWIN32.LIB

The .DLL files for both the Borland and Microsoft compilers are found in \NWSDK\LIB\WIN32\DLL\W95\.

AUDWIN32.DLL
CALWIN32.DLL
CLNWIN32.DLL
CLNWINTH.DLL

CLXWIN32.DLL
LOCWIN32.DLL
NCPWIN32.DLL
NETWIN32.DLL

1.3 Windows NT Client Development Setup

In the following table:

- The "Compiler" column lists compilers that have Novell provided libraries. These compilers can be used on the Windows NT Client.
- The "Library Directory" column identifies the directory where the library and include files for the specific compiler are located.
- The "#define Variable" column specifies the variables that must be defined for the libraries to be used. The variables help define the data types in the ntypes.h header file which allows the code to be platform independent.

Compiler	Library Directory	#define Variable
Borland* C++ (V 4.5 or above)	\NWSDK\LIB\WIN32\BORLAND	N_PLAT_WNT3
	\NWSDK\INCLUDE	N_ARCH_32
Microsoft* Visual C++* (V 2.0 or above)	\NWSDK\LIB\WIN32\MSCVC	N_PLAT_WNT3
	\NWSDK\INCLUDE	N_ARCH_32

The following is a list of the Windows* NT Client libraries. These library files are found in different directories, depending on the compiler being used. These Windows NT Client libraries are dynamic.

For a description of these libraries, see "[Cross-Platform Libraries](#)" above.

The library (.LIB) files for the Borland compiler are found in \NWSDK\LIB\WIN32\BORLAND.

The library (.LIB) files for the Microsoft compiler are found in \NWSDK\LIB\WIN32\MSCVC.

AUDWIN32.LIB
CALWIN32.LIB
CLXWIN32.LIB
LOCWIN32.LIB
NETWIN32.LIB

The .DLL files for both the Borland and Microsoft compilers are found in \NWSDK\LIB\WIN32\DLL\WNT32.

AUDWIN32.DLL
CALWIN32.DLL
CLNWIN32.DLL
CLXWIN32.DLL
LOCWIN32.DLL
NCPWIN32.DLL
NETWIN32.DLL

1.4 Reserving Services and Names

The NetWare OS comes with a predefined set of services, but it allows you to expand these services. Before expanding some of these services, however, to ensure uniqueness you need to reserve the service's ID, name, number, or type. The following names, numbers, or types must be reserved with Novell before you make any expansion.

- NDS schema extension name prefixes
- NCP Extension names

To reserve the relevant service IDs, names, numbers, or types, contact Novell DeveloperNet® in one of the ways explained below in "How to Get Assistance." For international registration contact your local Novell office.

1.5 How To Get Assistance

Novell provides a number of support options. Free support is available from developer support forums (newsgroups). You can purchase support by phone, by e-mail, or at onsite labs. For more information, go to the Novell Developer Support home page at <http://developer.novell.com/support> (<http://developer.novell.com/support/>).

Revision History

The following table outlines all the changes that have been made to the Getting Started documentation (in reverse chronological order):

Release Date	Revision Description
October 5, 2005	Transitioned to revised Novell documentation standards.
March 2, 2005	Fixed the preface and legal information.
June 2003	Modified the link in Section 1.5, "How To Get Assistance," on page 14 . Removed references to libraries and DLLs that are no longer included in CLib.
September 2001	Added support for NetWare 6.x to the documentation.
June 2001	Made changes to improve document accessibility. Made minor formatting changes.
July 2000	Separated from Return Values for C and created new documentation component for Getting Started.
November 1999	Rewrote the Section 1.1, "Cross-Platform Libraries," on page 11 .

